

**Registered  
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**THURSDAY, MAY 5, 1977**

**PART II**



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**CONSUMER  
PRODUCT SAFETY  
COMMISSION**

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**POWER LAWN  
MOWERS**

**Proposed Safety Standard and Extension  
of Time**

## CONSUMER PRODUCT SAFETY COMMISSION

[ 16 CFR Part 1205 ]

### POWER LAWN MOWERS

#### Proposed Safety Standard and Extension of Time

APRIL 25, 1977.

AGENCY: Consumer Product Safety Commission.

ACTION: Proposed rule and extension of time.

SUMMARY: The Consumer Product Safety Commission proposes a consumer product safety standard applicable to power lawn mowers, pursuant to section 7(f) of the Consumer Product Safety Act (15 U.S.C. 2056(f)). The proposed rule is designed to eliminate or reduce unreasonable risks of injury that the Commission has preliminarily determined are associated with power lawn mowers. Also, the period during which the Commission must either promulgate a consumer product safety rule or withdraw the notice of proceeding is extended to October 3, 1977.

DATES: The proposed effective date is 2 years after the final standard is issued by the Commission. However, more stringent blade stop times become effective 4 years after the final standard is issued.

Written comments should be submitted on or before July 5, 1977.

Interested persons will have an opportunity to make an oral presentation of data, views, or arguments on June 13, 1977.

ADDRESSES: Written comments, preferably in five copies, should be submitted to the Secretary, Consumer Product Safety Commission, Washington, D.C. 20207. Opportunity for oral presentation: 1111 18th Street NW., Washington, D.C. 2020. All material which the Commission has that is relevant to this proceeding, including any comments that may be received on this proposal, may be seen in, or copies obtained from, the Office of the Secretary, 3rd Floor, 1111 18th Street NW., Washington, D.C. 20207.

#### FOR FURTHER INFORMATION CONTACT:

Dr. Alan M. Ehrlich, Office of Standards Coordination and Appraisal, Consumer Product Safety Commission, Washington, D.C. 20207 (301-492-6470).

#### A. PRODUCT DEFINITION

The requirements set forth in proposed 16 CFR Part 1205 apply to power lawn mowers, which, for the purposes of this regulation, are defined as grass-cutting machines with a minimum cutting width of 304 mm. (11.96 in.) that employ an engine or a motor as a power source and are consumer products as defined in section 3(a)(1) of the Consumer Product Safety Act (15 U.S.C. 2052(a)(1)). This definition of power lawn mowers includes both rotary and reel-type mowers and applies to both riding and walk-behind

mowers. Mowers powered by internal combustion engines or electric motors are included. However, an individual section within Part 1205 may apply to only some of the types of mowers included within the definition of "power lawn mowers" (for example, only to rotary mowers or only to walk-behind mowers), and, where this is the case, the section will state the types of mowers to which it applies.

#### B. BACKGROUND

On August 15, 1973, the Outdoor Power Equipment Institute (OPEI) petitioned the Consumer Product Safety Commission, pursuant to section 10 of the Consumer Product Safety Act (also referred to as "the act") (15 U.S.C. 2059), to commence a proceeding for the development of a consumer product safety standard for power lawn mowers. In its petition, OPEI also requested the Commission to publish a voluntary standard, ANSI B 71.1-1972, "Safety Specifications for Power Lawn Mowers, Lawn and Garden Tractors, and Lawn Tractors," with amendments and a compliance program, as a proposed consumer product safety standard. (ANSI standards are approved by, published by, and available from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018.)

After consideration of the available information concerning injuries and injury potential associated with power mowers, the Commission preliminarily determined that the following hazards were associated with power lawn mowers and presented unreasonable risks of death or injury to consumers:

1. Lacerations, amputations, avulsions, and other injuries resulting from contact with the rotating mower blade.
2. Lacerations, punctures, and other injuries caused by objects propelled by the mower blade.
3. Lacerations, contusions, abrasions, and other injuries resulting from the rolling, slipping, or overturning of power lawn mowers or by failure of power lawn mower brakes or steering mechanisms.
4. Burns and other injuries resulting from direct contact with exposed heated surfaces of power mowers or from fires caused by ignition of liquids used as fuel for power mowers.
5. Injuries caused by electric shock from power sources of electrically powered lawn mowers or electrical systems of nonelectrically powered lawn mowers.
6. Hearing loss and nonauditory trauma from exposure to excessive noise.

Accordingly, on November 16, 1973, the Commission granted the portion of the OPEI petition which requested that the Commission commence a proceeding to develop a consumer product safety standard for power lawn mowers. The Commission, however, denied the OPEI request to publish ANSI B 71.1-1972, with amendments, as a proposed consumer product safety standard. This portion of the petition was denied because the Commission believed it should solicit offers to develop a standard and allow interested persons or organizations to submit previously issued or adopted

standards as a recommended consumer product safety standard (section 7(b) of the act, 15 U.S.C. 2056(b)).

The Commission commenced the proceeding to develop a consumer product safety standard applicable to power lawn equipment by publishing a notice in the **FEDERAL REGISTER** of July 22, 1974 (39 FR 26662). Interested persons were invited to submit an existing standard as a proposed consumer product safety standard or to submit an offer to develop a recommended safety standard. The notice of proceeding contains a more detailed discussion of the information about injuries associated with power mowers that indicates a need for remedial action and discusses the provisions and adequacy of existing standards as they relate to the unreasonable risks of death or injury that the Commission has preliminarily determined are associated with power lawn mowers. In response to the notice of proceeding, the Commission received one existing standard and an Invitation for Bid, issued by the General Services Administration, which was referred to as an existing standard, for consideration as proposed consumer product safety standards. The Commission also received four offers to develop a standard applicable to power lawn mowers.

The Commission subsequently accepted the offer of Consumers Union of United States, Inc. (CU), 256 Washington Street, Mount Vernon, New York 10550, to develop a consumer product safety standard applicable to power lawn mowers (39 FR 37803, October 24, 1974).

The time by which CU was to submit a recommended consumer product safety standard to the Commission was extended from December 19, 1974, until July 17, 1975 (40 FR 10228, March 5, 1975; 40 FR 30863, July 23, 1975). After consideration of the recommended standard submitted by CU, the Commission extended until April 30, 1977, the date by which it must either publish a proposed consumer product safety standard applicable to power lawn equipment or withdraw the notice of proceeding (40 FR 45220, October 1, 1975; 41 FR 9914, March 4, 1976; 41 FR 27997, July 8, 1976).

The materials submitted to the Commission by CU consist of the following reports: (1) CU's Proposed Lawn Mower Safety Standard, (2) a Rationale for Proposed Safety Standard for Power Lawn Mowers, (3) copies of standards referenced in CU's Proposed Lawn Mower Safety Standard, (4) an analysis of the economic impact of CU's Proposed Lawn Mower Safety Standard, (5) an Environmental Impact Assessment Report, and (6) the record of CU's proceeding (minutes of meetings, etc.).

By a letter dated August 15, 1975, CU also provided the Commission with some corrections and clarifications to the standard. In addition, the Commission has received comments on the provisions of the standard from individual members of CU's Power Lawn Mower Standard Development Committee and its subcommittees and from other interested indi-

viduals. Also, the Commission staff met with OPEI in a series of three public meetings, at which OPEI presented its views on CU's recommended standard to the staff. In addition, the Commission's staff held a public meeting with consumers and private inventors concerning CU's recommended standard.

The Commission's staff conducted an extensive evaluation of the standard which CU recommended. Many of the provisions were controversial in terms of their cost and their effect upon the utility of power mowers. It was necessary to conduct additional tests to determine the feasibility and effectiveness of some of the recommended provisions. The Commission also obtained the opinion of independent experts on various questions which were raised during the evaluation. In addition, the Commission consulted with groups of consumers in order to obtain information concerning the desirability of certain provisions of the standard and used the information obtained from these groups in its evaluation.

Copies of all materials which the Commission has considered during this proceeding may be obtained from, or inspected in, the Office of the Secretary, 3rd Floor, 1111 18th Street NW., Washington, D.C. 20207.

As a result of its consideration and evaluation of the recommended standard submitted by CU and the comments that it has received, the Commission has determined that some changes were required in the tests and requirements recommended by CU in order to further reduce the risks which the standard addresses or in order to lessen the adverse effect of certain provisions on the cost, utility, or availability of power lawn mowers. Certain provisions of the CU standard were deleted because the Commission determined that the particular risk that they addressed was not sufficient to support the inclusion of the provision in a mandatory standard or because the requirements are already generally complied with and there is no apparent reason to think that they will not continue to be complied with. In addition, the recommended standard has been rewritten in order to increase the technical clarity of the requirements and to put the standard in a form suitable for publication in the Code of Federal Regulations.

Where a provision of the proposal set forth below differs substantively from the standard recommended by CU, an explanation is given in section C or D of this preamble.

In the proceedings prior to the publication of this notice, the product to be regulated by proposed Part 1205 was referred to as "power lawn equipment." In proposed Part 1205, the designation of the product has been changed to "power lawn mowers." The change was made because the term "power lawn equipment" may include products other than those intended to be covered by this proposed standard. The original notice of proceeding (39 FR 26662) indi-

cated that the Commission intended the standard to cover only that equipment included within the definition of "power lawn mowers" in Part 1205.

### C. THE PROPOSED STANDARD

The standard which is proposed below is designed to reduce or eliminate the unreasonable risks of injury that the Consumer Product Safety Commission has preliminarily determined are associated with power lawn mowers.

The standard itself will be Subpart A of Part 1205. Additional regulations which the Commission may issue concerning power lawn mowers that are not a part of a consumer product safety standard will be included within a Subpart B to be issued subsequently. These could include certification and labeling regulations under section 14 of the act (15 U.S.C. 2063). If the Commission issues any statements of policy or interpretation concerning power lawn mowers, they could be set forth in a Subpart C. Since only Subpart A of Part 1205 has been proposed, however, any reference to Part 1205 in this preamble refers only to Subpart A and not to possible future actions of the Commission.

For the provisions of the standard recommended by CU which the Commission has proposed in Part 1205, the Commission adopts the rationale for these provisions that is contained in the Rationale for a Proposed Safety Standard for Power Lawn Mowers that was submitted to the Commission by CU. The rationale for the changed and additional provisions of the proposal, together with a brief description of the CU rationale where necessary, is given below in the discussion of the requirements of each section of the standard.

The proposed standard consists of fourteen sections covering the following subject matter:

|         |   |
|---------|---|
| Sec.    |   |
| 1205.1  | Scope, application, background, and effective date. |
| 1205.2  | Definitions.  |
| 1205.3  | Walk-behind mower protective devices.               |
| 1205.4  | Thrown objects test for rotary mowers.              |
| 1205.5  | Walk-behind mower controls.                         |
| 1205.6  | Fuel ignition hazards.                              |
| 1205.7  | Electrically-powered mowers.                        |
| 1205.8  | Riding mower stability and shield requirements.     |
| 1205.9  | Riding mower steering requirements.                 |
| 1205.10 | Riding mower brakes.                                |
| 1205.11 | Riding mower controls.                              |
| 1205.12 | Warning labels.                                     |
| 1205.13 | Prohibited stockpiling.                             |
| 1205.14 | Findings.   |

An explanation of the standard is given below.

*Scope and application (Section 1205.1).* The definition of "power lawn mower" as used in proposed Part 1205 is given in section A of this preamble (also see § 1205.1(a)(1) of the standard).

This Part 1205 will apply to all power lawn mowers that are produced or distributed for sale to or for the personal use, consumption or enjoyment of consumers in or around a permanent or

temporary household or residence, a school, in recreation or otherwise. This Part does not apply to power lawn mowers that are not customarily produced or distributed for sale to, use or consumption by, or enjoyment of a consumer.

Power lawn mowers subject to this Part 1205 that are manufactured after the effective date of this standard must meet its requirements if the mower is manufactured for sale, offered for sale, or distributed in commerce within the United States or if the mower is imported into the United States.

*Effective date (Section 1205.1).* The effective date proposed for Part 1205 is two years after promulgation of Part 1205 in the FEDERAL REGISTER. This date was chosen by the Commission because the presently available information indicates that most mower manufacturers will need that long to accomplish the design and production changes that will be necessary in order to comply with the standard. Also, as discussed below, the provisions for blade stopping times become more stringent 4 years after promulgation of Part 1205.

The Commission has preliminarily determined that a period of 24 months from the date of publication of the final standard to its effective date is in the public interest for the following reasons. The increase in manufacturing cost and retail prices that will be caused by the standard are inversely related to the length of time that manufacturers are allowed for bringing their products into compliance with the requirements of the standard. The process of modifying existing mowers to comply with the standard consists of such stages as redesign, prototype construction and testing, retooling, and manufacture and testing of new production. A delay of two years in the effective date of the standard will allow the necessary modifications to mowers without major market disruptions such as higher costs and prices or an insufficient number of products available to meet consumer demand.

The Commission wishes to point out, however, that it is interested in implementing this standard in the shortest period of time that will not create such major market disruptions. If additional data show that it is in the public interest, the effective date of the standard could be shorter than two years (perhaps as little as one year, which was the period recommended by CU). In addition, the Commission is considering specifying shorter effective dates for those provisions of the standard that most presently available mowers can meet or that can be implemented relatively quickly (e.g., labeling). The Commission encourages the submission of data concerning what effective date would be most appropriate for each requirement of the standard.

The factors that led to the Commission's preliminary conclusion that a two year period is appropriate for the effective date are discussed in a draft economic impact analysis (dated Febru-



ary, 1977) which is available from the Office of the Secretary.

In the parts of the standard which require the blade to stop within certain times (§§ 1205.5(b) and 1205.11(b)), the requirements are implemented in two stages. At the effective date of the standard (proposed to be 2 years after promulgation), the blade of a walk-behind mower would have to stop within 5 seconds of release of the deadman, while the blade of a riding mower would have to stop within 6 seconds. Two years after that (4 years after promulgation), the permissible stopping time would be reduced to 3 seconds for both types of mowers.

The interim 5 and 6 second requirements can be achieved by most currently-marketed mowers and are intended to increase safety by eliminating mowers with longer than usual stopping times.

However, from the information presently available to the Commission, it appears that a major redesign and retooling effort will be necessary in order to modify existing mowers to comply with the 3 second requirements. The Commission's preliminary determination is that the four year period is appropriate and in the public interest in order that the modifications made necessary by these more stringent provisions may be accomplished without major market disruptions such as higher costs and prices or an insufficient number of products to meet consumer demand. However, the Commission especially solicits comments on whether the delay of two additional years for the shorter blade stopping times is appropriate in view of the fact that CU's recommendation for the effective date for blade stopping time was "not less than one year."

Further discussion of blade stopping times is given below in this section C of this preamble.

**Walk-behind mower protective devices (Section 1205.3).** Section 1205.3 is one of several sections designed to prevent injuries caused by contact with the mower blade. This section contains certain requirements for mower handles and shields and several tests involving a foot probe which are designed to determine if the mower blade can contact the operator's foot during some commonly occurring conditions associated with mower use.

**The foot probe.** The foot probe specified in the proposed standard is shown in Fig. 3 and is identical to the foot probe used in British Standard BS 5107, "Specification for Powered Lawn Mowers," April, 1974, (the UK probe). (British Standards are approved and published by the British Standards Institution and are available for purchase from the American National Standards Institute, Inc., referenced above.) This probe differs from the one recommended to the Commission by CU, which is essentially the probe prescribed by UL 82, "Standard for Electric Gardening Appliances," Second Edition (February 14, 1974), a voluntary standard developed by and available from Underwriters Labora-

tories Inc., 207 E. Ohio Street, Chicago, Illinois 60611. A third probe known to the Commission is that used in ANSI B71.1-1972 and B71.1a-1974. In evaluating these probes, however, the Commission's staff conducted tests which showed that the UK probe more closely simulates the action of the human foot than the other probes and also provides a more stringent test for blade contact than the other probes. Accordingly, the Commission is proposing the use of the UK foot probe in these tests since it appears to be a more effective means of achieving the safety objective of this test. The test procedures, however, are similar to those recommended by CU.

**Foot probe test.** The first test utilizing the foot probe (the foot probe test, § 1205.3(a)(2)(i)) is to insert the foot probe as far as possible under all points of the bottom edge of the blade housing and shields and then pivot the toe of the foot probe upward around the heel as much as possible as the probe is withdrawn. The shields (including the housing) must prevent the foot probe from either entering the path of the blade or causing any part of the mower to enter the path of the blade.

The test proposed by the Commission is similar to the test recommended by CU in that the probe is inserted at all points around the bottom periphery of the mower. OPEI has commented that since the mower blade will stop when the operator leaves the operating position, the danger of inadvertent contracting a moving blade with the operator's foot exists only from the rear. OPEI therefore argues that the foot probe need only be inserted under the rear periphery of the mower. The Commission has not had time to fully evaluate this comment, but comments from other interested persons on this issue are requested. If the OPEI comment is found to have merit, the Commission can change the proposed test when the final standard is promulgated.

**Terrace test.** The next test is designed to determine if the mower protects against foot contact with the blade when the mower is pushed across a transition from a horizontal surface to a lower inclined surface, as in beginning to mow downhill (the terrace test, § 1205.3(a)(2)(ii)). In this test, the foot probe is inserted at the rear of the mower as the mower is passed over a test surface consisting of a horizontal surface connected to a surface inclined 30 degrees below the horizontal by a curved surface having a radius of 500 mm. (19.68 in.).

**Obstruction test.** An obstruction test (§ 1205.3(a)(2)(iii)) is also provided which consists of passing the mower back and forth over (1) a depression 25 mm. (.99 in.) deep with a 150 mm. (5.9 in.) radius of curvature and (2) a raised obstacle 232 mm. (9.1 in.) square, each extending the full width of the mower. The test requires that not more than one of the mower's wheels at a time may be lifted from the test surface. This requirement is designed to insure that the protective shields are not raised excessively during these conditions, which would

allow the operator's foot to contact the blade.

This test also requires that the raised obstacle not stop the mower by interfering with the shields. This is to insure that users of the equipment are not tempted to remove such shields in order to eliminate the inconvenience that would occur if the mower were to catch on such obstacles, especially when the mower is pulled backward.

The obstruction test proposed by the Commission is the one recommended by CU, except that CU specified that portions of the test fixture could be cut away if they interfered with the blade housing. The Commission proposal would require that the housing, in addition to the other shields, meet the requirements. The Commission believes that cutting away the test fixture so that it does not interfere with the mower housing could reduce the stringency of the test with respect to other shields. The requirement that not more than one wheel at a time shall lift from the fixture surface is intended to prevent the housing or shields being lifted sufficiently so that the foot could contact the blade. This hazard would exist whether the lifting is caused by the housing or by another shield.

**Shield strength test.** A shield strength test (§ 1205.3(a)(1)(ii)) is provided so that each of the front, back and both sides of the mower are subjected, in turn, to a 225 newton (51 lb.) force to determine whether the shields are adequately strong.

**Handle tests.** Mower handles are required to be provided with an upstop to prevent the rearmost part of the handle from moving closer than 430 mm. (16.93 in.) to the vertical line through the nearest point on the blade tip circle (§ 1205.3(b)(2)). This restraint will prevent the handle from riding up over the mower, which would allow the operator to get too close to the blade. However, it is permissible to provide a means to temporarily disable the upstop (as when storing the mower, for example).

Handle strength tests are also provided to insure that the handle will be strong enough to serve as a reliable means for the operator to use to keep away from the blade. One of these tests (the handle upstop test, § 1205.3(b)(4)(ii)) was recommended by CU and consists of applying a 270 newton (60 lb.) force to press the handle upward against the handle upstop. The other test was added by the Commission's staff and consists of applying a torque to the handle in each intended use position until one side of the mower lifts and then in the opposite direction until the other side lifts (§ 1205.3(b)(4)(i)). The Commission believes that the handle is an important protection against the possibility of blade contact and, therefore, that the test should also include an indication of the handle's ability to withstand torsional stresses. Accordingly, the test recommended by CU has been supplemented by adding the handle twisting requirement described above.

**Thrown objects (Section 1205.4).** Each year, rotary lawn mowers cause a large number of injuries as a result of objects

such as rocks, sticks, wire, and nails being hit by the mower blade and ejected at high speeds through the discharge chute or under the shields. A thrown objects test for rotary mowers is provided in § 1205.4 of the proposed standard to determine the extent to which a mower will (1) eject objects struck by the rotating blade and (2) limit the ejection of such objects to areas where injuries are less likely to occur.

The test which is proposed in § 1205.4 differs from the test that was recommended by CU and also differs from the other widely known tests that have been developed for existing voluntary standards (ANSI, UL, and the International Standards Organization (ISO)). Each of these other tests appear to have advantages and disadvantages, and there were differing opinions among the Commission's staff concerning which of these tests would be most suitable for the Commission to propose as part of the mandatory standard. As a result, the Commission contracted with the Research Triangle Institute (RTI), Research Triangle Park, North Carolina 27709, to evaluate all of these tests against each other and under conditions of actual grass mowing to determine which of the tests or whether an alternative test, best detected the hazard. RTI recommended a fifth test which they developed (hereafter referred to as the RTI test) that is similar to the ISO test but which also incorporates aspects of all the other tests. A discussion of RTI's test methodology and results is contained in RTI's "Final Report: Thrown Objects Test Comparison" dated January, 1977, which is available from the Office of the Secretary. The Commission believes that the test recommended by RTI is more representative of the conditions that would be encountered in actual mowing and has therefore proposed it instead of the CU test.

The test apparatus consists of an octagonal target enclosure surrounding an artificial turf surface which supports the mower to be tested. Sixpenny nails are injected from three positions into the blade of the mower while it is operating, and the number and location of the hits of the nails that are propelled against the walls of the enclosure are recorded. The pass/fail criteria for the number and location of the hits were established by the Commission and are given in § 1205.4 (c). The criteria for walk-behind mowers allow fewer hits in the rear quadrant of the target (compared to riding mowers and to the other quadrants) in order to protect the operator. More hits are allowed in the area facing the usual location of the discharge chute for both riding and walk-behind mowers since the danger to bystanders is more apparent in this direction. A report from the Commission's Bureau of Engineering Sciences which explains why these criteria were selected will be available from the Office of the Secretary during the comment period.

Construction plans furnished by RTI for a suitable test apparatus are available from the Office of the Secretary.

Riding mowers have an additional target consisting of a circle of cardboard that is placed over the seat to detect hits that might endanger the operator. Although the test recommended by RTI did not include an operator target for riding mowers, there was a cylindrical target in the test recommended by CU. The Commission's staff deemed the proposed circular operator target to be easier to mount and more effective in registering hits than a cylindrical one.

*Walk-behind mower controls* (Section 1205.5). Many injuries in involving walk-behind power lawn mowers occur when the hands of the operator come into contact with the blade when the operator intentionally approaches the blade area to perform a task such as attempting to clear a clogged discharge chute, adjust the wheels, or empty a grass catcher. In order to reduce these injuries, the Commission is proposing to require a blade control system for all walk-behind mowers. The blade control system would (1) prevent operation of the blade unless the control is actuated by the operator, (2) require that the operator be in continuous contact with the control in order for the blade to continue to be driven, and (3) cause the blade to stop within specified times (discussed below) upon release of the control by the operator. For a walk-behind mower with manual starting controls, this control would stop the blade without stopping the power source, unless the mower can pass the "easy restart" test discussed below. Walk-behind mowers are also required to have a second control which must be actuated before a stopped blade can be restarted. The significance of these requirements in preventing injuries caused by blade contact with the hands is explained below.

Except for the "easy restart" test and the particular blade stopping times, the requirements for this control system were recommended by CU. CU determined that in order to prevent injuries to an operator who had left the operating position (unless the blade was found "harmless" by CU's blade harmless test), it was necessary for the blade to either (1) stop moving or (2) be rendered harmless (the blade harmless test) by the time the operator could leave the operating position and reach the area where a hand could come into contact with the blade. CU therefore recommended that a control be required which would have to be continuously touched ("continuously actuated") by the operator in order for the blade to operate. When the operator released this control (which CU called the "deadman control"), the blade was required to come to a stop or become "harmless" within certain time limits. To prevent the unintentional starting of the blade when the "deadman control" was contacted accidentally, CU recommended that it be necessary to operate at least one other control in addition to the deadman control in order to restart the blade.

*Easy restart test* (Section 1205.5(d)). CU recognized that one way to accom-

plish the required stopping of the blade, especially on less expensive mowers, was to provide that the power source will stop when the deadman control is released. This method of stopping the blade has the advantage of allowing the operator to hear when a gasoline engine (and therefore the blade) has stopped. However, it has the disadvantage of requiring that the power source be restarted before blade operation may resume. Where power start capability is provided, CU believed this not to be a significant inconvenience. However, where the mower must be manually restarted, CU believed that the operator may be tempted to disable the deadman control in order to avoid the necessity for restarting the engine after releasing the deadman control (for example, by tying or taping the control in the actuated position). In order to discourage disabling of the deadman control, CU recommended two requirements applicable only to walk-behind mowers. First, the power source shutoff control must be inoperative unless the deadman control is released by the operator. This would discourage a relatively permanent disabling of the deadman control since the deadman control would have to be released in order to turn off the engine. CU also recommended that a means be provided to prevent operation of the blade if the wire or linkage to the deadman control were cut or disconnected. These two additional protective requirements to discourage disabling of the deadman control are referred to below as "interlocks."

The Commission, however, believes that as a practical matter it would be very difficult and quite possibly expensive to design interlocks to discourage disabling of the deadman control that could not also be disabled by a user who was determined to do so. The Commission believes that a more effective approach would be to reduce the motivation for users to disable the deadman control by requiring that mowers with manual starting controls be "easy" to restart if the power source stops when the deadman control is released. Accordingly, the Commission conducted human factors research to determine starting effort levels which most consumers will consider to be "easy" and has developed a test (§ 1205.5(d)(2)) to determine if a mower exceeds this level. The test consists of seeing if the mower can be started by a 23 kg. (50 lb.) weight dropping 61 cm (24 in.). The problems associated with restarting the mower can, of course, be avoided if the power source does not stop when the blade stops or if a power restart capability is provided. The former result can be achieved by using a clutch to disconnect the blade from the power source when the deadman control is released. The alternatives allowed by the standard as proposed, therefore, are (1) power restart capability, (2) manual start where the power source does not stop when the deadman control is released (i.e., a clutch device), and (3) manual start that passes the easy restart test.



## PROPOSED RULES

The Commission wishes to point out that it is not fully convinced that its "easy-restart" test is adequately indicative of an ease of restart that would not unduly tempt consumers to disable the deadman control. However, the Commission is reluctant at this time to foreclose the possibility of an "easy-restart" mower as a satisfactory solution to the blade stop requirement in the proposed standard and therefore an "easy-restart" option is incorporated in the proposal. The Commission particularly seeks comments on the provision for easy restart. In addition, the Commission urges those manufacturers most interested in "easy-restart" to share their "easy-restart" technology with the Commission when commenting on the proposed standard. Unless the Commission is thereby convinced that an "easy-restart" feature is effective and technically feasible, it is possible that the "easy-restart" requirement will be modified or deleted when the final standard is issued. If this easy restart requirement were deleted, the remainder of the standard as proposed would require that either the blade stop by means other than stopping the engine when the deadman control is released (i.e., a clutch device) or that a power restart capability be provided. From the discussion above, it can be seen that the question of the degree to which the Commission should issue requirements intended to reduce the possibility of users disabling the deadman control has not been fully resolved. Comments on this issue are therefore sought by the Commission. Some alternatives which have been recommended to the Commission, and upon which comment is therefore specifically solicited, are:

1. No requirements to protect against the possibility of users disabling the deadman control.
2. Use of "interlocks" to make disabling more difficult.
3. East of restart test similar to the one proposed to reduce the inconvenience of restarting manual start mowers.
4. Prohibiting manual start mowers that stop the blade by stopping the power source. This would require mowers to have either a power start capability or a clutch to disconnect the blade when the deadman control is released.

**Blade harmless test.** Concerning the concept of a "blade harmless test," the Commission has been unable to find a repeatable test that can sufficiently indicate the point at which an individual is likely to be injured by a moving blade. This includes the "blade harmless test" recommended by CU, which consists of inserting a vinyl-wrapped dowel into the path of the blade. (If the tape was not cut, CU deemed the risk of injury to the operator to be acceptable.) Accordingly, the blade harmless test recommended by CU has not been proposed.

The Commission, however, believes that it would be desirable to have a test that would identify a blade that is reasonably safe if inadvertently contacted by the operator. The inclusion of such a test would encourage the development of safer blades, which might ultimately be the most effective means of reducing

injuries caused by contact with the blade. Accordingly, the Commission would welcome comments suggesting a suitable test for this purpose.

**Blade stopping times (Sections 1205.5 (b) and 1205.11(b)).** In order for the "deadman control" to be effective, it is necessary that the blade stop before the operator's hand can come into contact with it after leaving the operating position. Accordingly, the Commission has proposed a stopping time of 3 seconds for all mowers, to be effective two years after the effective date of the remainder of Subpart A or Part 1205 (four years after the standard is issued). The Commission based its decision to propose a 3 second stopping time on the following data:

(a) A National Bureau of Standards analysis of films of blade access time tests taken by the University of Iowa (Memorandum from NBS to CPSC's Jon Shelton dated March 21, 1975, "Time to Blade Contact Data").

(b) Blade access time tests conducted at Eckerd College by a task group of CU's Power Lawn Mower Standard Development Committee (Document 76, CU's Blade Contact Subcommittee, "Time to Blade Access Test Report").

(c) A limited blade access time study conducted by the Commission's Office of the Medical Director (Videotape, December 1975: Methodology for Evaluating the Proposed Lawn Mower Standard).

(d) The preliminary analysis of a time to blade access study conducted for the Commission by the National Bureau of Standards (NBS) (Memorandum from NBS to CPSC's Dale Scott dated February 24, 1977, "Lawn Mower Foot Probe Study (Project 138) and Time-to-Blade Access Study (Project 139)"). A draft of NBS' complete reports should be available from the Office of the Secretary early in the comment period.

The data are also discussed in an evaluation of blade stopping time by the Commission's Office of the Medical Director, dated December 7, 1976. These studies all show that an operator's hand may reach the blade contact area by the most direct route from the operating position in less than 3 seconds. Three seconds should provide a reasonable degree of protection, however, since the operator will usually expend some time in beginning to perform the task (clearing the discharge chute, for example) and since manufacturers are likely to design to a shorter time than 3 seconds to insure that all of their mowers will meet the requirement.

For the period between the time Part 1205 becomes effective and the time the 3 second blade stopping time goes into effect, the Commission proposes stopping times of 5 seconds for walk-behind mowers and 6 seconds for riding mowers. These times are one second longer than the times which were recommended by CU but are consistent with the recommendations of the majority of CU's blade contact subcommittee. The Commission, however, believes that a slightly longer time is justified on an interim

basis for the following reason. As mentioned in the preceding paragraph, the 3 second time which the Commission believes is appropriate as an eventual requirement will probably require design changes to currently available mowers. Some changes would also probably be necessary in order to enable manufacturers to comply with the 4 and 5 second times recommended by CU. The Commission does not believe that it is reasonable to require two design efforts within a two year period in order to gain a one second margin of safety on a temporary basis. From the information available to the Commission, it appears that the proposed interim 5 to 6 second stopping times can be achieved by most currently-marketed mowers. The effect of the interim requirements, therefore, would be to increase safety since it will eliminate those currently marketed mowers with longer than usual stopping times.

The Commission's reasons for selecting the effective date of the shorter blade stopping times are discussed above under § 1205.1.

An additional requirement (§ 1205.5 (c)) to ensure that the operator does not come into contact with a rotating blade is that walk-behind mowers with blades that commence operation when the power source starts shall have their starting controls located within the operating control zone (defined in § 1205.2(a) (17)).

It is also required that all mowers be provided with a shutoff control to stop the operation of the power source (§ 1205.5(e)). This control shall require a manual operation before the power source can be restarted.

**Fuel ignition hazards (Section 1205.6).** The hazard of fuel ignition has been addressed by requirements designed to reduce the amount of spilled or leaked fuel and to control the ignition sources of sparks and exhaust heat.

The proposal includes a requirement (§ 1205.6(a)(1)) that high tension cables on mowers be fully insulated. A test is also provided to determine that the spark plug connector will not spark against grounded metal if the operator attempts to start the mower while the connector is disconnected (§ 1205.6(a)(1)(ii)). In addition, grounding switches are not permitted in the high tension (secondary) part of the ignition system (§ 1205.6(a)(2)).

Leakage from the fuel system during any reasonably foreseeable condition of use is prohibited (§ 1205.6(c)). In addition, a test (§ 1205.6(b)) is provided to insure that fuel will not contact certain parts of the mower and that not more than 0.95 gm. (.033 fl. oz.) of fuel will collect in any single pool when the fuel tank is overfilled.

**Electrically-powered mowers (Section 1250.7).** In order to reduce the hazard of electric shock associated with electrically-powered mowers, the following requirements are included in the proposed standard. A performance test is provided to insure that the parts of the electrically-powered lawn mower which are normally contacted by the operator

are covered with insulation having a resistance of a least 250,000 ohms (§ 1205.7(a)).

A requirement is included that folding or pivoting handles on electrically-powered mowers shall not entrap electrical cords which connect parts of the mower (§ 1205.7(b)).

A plug blade shielding test is also provided to insure that the plug blades for electrically-powered lawn mowers are shielded so that they cannot be contacted by a probe while they are still energized by the extension cord (§ 1205.7(c)). A further discussion of this test is given in section D of this preamble.

A switch that disconnects both sides of the power supply to the mower when it is in the OFF position is also required (§ 1205.7(d)).

**Riding mower stability and shield requirements (Section 1205.8).** In order to reduce injuries caused by the turning over of a riding mower, static stability requirements are included which specify that the mower's upper wheels shall not lift when it rests on a slope inclined 30° from the horizontal when the mower is facing uphill or downhill or on a slope inclined 20° from the horizontal when the mower is facing in either direction across the slope (§ 1205.8(a)).

Shields are also required (§ 1205.8(c)) for riding mowers to prevent the foot probe of Fig. 3 from entering the blade path or contacting any moving mower part driven by the power source that is within 125 cm. (49.2 in.) of the seat reference point of the mower (defined in § 1205.2(a)(23)).

**Riding mower steering requirements (Section 1205.9)** This section (§ 1205.9(a)(3)) does not permit tiller bar steering to be utilized in riding mowers, since a tiller bar requires the operator's body to be in an unstable position during sharp turns. If a mower is steered by dual hand-lever controls, to turn a forward-traveling vehicle to the right, the left control shall move in a forward direction relative to the right control or the right control shall move rearward relative to the left control and vice versa (§ 1205.9(a)(2)). All other types of steering controls shall move to the right, or in a clockwise direction, to turn a forward-traveling mower to the right, and vice versa (§ 1205.9(a)(1)).

A structural integrity test of the steering system is also included (§ 1205.9(b)). The system is required to withstand a force of 222 newtons (50 lb.) applied to the steering mechanism while the steerable wheels are held in each of three positions.

**Riding mower brakes (Section 1205.10).** The proposed standard includes requirements (§ 1205.10(a)(1)(i)) for attainable stopping distances for riding mowers in both the forward and backward directions. In order that the operator shall be able to control the mower, a test is provided (§ 1205.10(a)(1)(iii)) to ensure that the service brake is capable of holding the mower stationary on a slope that is inclined at an angle of 17° when a 222 newton (50 lb.) force is applied to the brake control. The serv-

ice braking system shall function independently of the position of the transmission or clutch controls or engine operation § 1205.10(a)(1)(ii)).

A structural integrity test for braking controls (§ 1205.10(b)) is provided which requires foot brakes to be able to withstand a force of 1,670 newtons (375.5 lb.) and hand brakes to be able to withstand a force of 710 newtons (159.7 lb.).

A test for parking brakes (§ 1205.10(c)) is provided to insure that they will limit the amount of roll when the mower is parked on an inclined surface.

In order to further reduce the potential hazard of a runaway mower, the parking brake requirement recommended by CU has been supplemented in the proposal by specifying that these requirements shall also apply when the power source is running (§ 1205.10(c)(2)(i)(C)).

A leg probe (Fig. 9) (§ 1205.10(d)(1)) is proposed to determine that the brake pedal is located close enough to the seat that smaller operators can apply the necessary force to the pedal.

In order that brakes be reliable to use, brake pedals are required to have slip resistant contact surfaces (§ 1205.10(d)(2)), and a barrier is required § 1205.10(d)(2) to prevent the foot from sliding off a right-side control surface toward the right and from sliding off a left-side control surface toward the left.

**Riding mower controls (Section 1205.11).** A riding mower is required (§ 1205.11(a)) to have a blade control system (CU's "deadman control") which will present operation of the blade unless a control is actuated by the operator and require that the operator be in continuous contact with the control in order for the blade to continue to be driven. The mower shall also have a second control which must be actuated before a stopped blade can be restarted. The significance of this control system is explained above in the discussion of walk-behind mower controls under § 1205.5. The second control, which must be actuated before the stopped blade can be restarted must require a force of at least 110 newtons (24.8 lb.) in order to be actuated. This is to prevent inadvertent engagement of the blade control.

In order to reduce injuries connected with backover accidents, the blade of a riding mower must come to a stop when the transmission or traction drive is positioned for reverse travel (§ 1205.11(a)(3)).

Riding mowers are also required to have a control so that the blade may be rendered inoperative while the mower is traveling forward (§ 1205.11(a)(4)). This enables the operator to reduce the hazard from a moving blade when it is not needed for mowing and also to reduce the hazard of thrown objects when the mower is driven across an area covered with gravel or debris.

Two years after the effective date of Part 1205 (four years after the standard is issued), the blade of a riding mower must come to a complete stop within 3 seconds after the blade control "deadman" is released or after the transmis-

sion or traction drive is positioned for reverse travel (§ 1205.11(b)). For mowers manufactured before that date but after the effective date of the standard, the blade is required to stop within 6 seconds. See the discussion above under § 1205.5 for the reasons the Commission selected these particular blade stopping times and this effective date.

In order to prevent blade motion except when the operator requires it, and to prevent inadvertent blade motion when the mower power source is started, a riding mower is required to have a means to prevent the engine from being started by its normal starting means unless the blade drive is disengaged and the traction drive is disengaged or in neutral (§ 1205.11(c)(1)).

In order that the power source may be conveniently stopped and not inadvertently restarted, all riding mowers are required to have a shutoff control to stop the operation of the power source (§ 1205.11(c)(2)). This control shall require a manual operation before the power source can be restarted.

The traction drive of a riding mower is also required to have a "deadman" type control so that the power source must be stopped or the traction drive disconnected if the operator leaves the operating position or otherwise releases the control without first disengaging the traction drive (§ 1205.11(d)(1)). This will stop the movement of the mower if the operator falls or is thrown from the operating position.

A neutral position is required between any forward position and any reverse position of a riding mower transmission (§ 1205.11(d)(2)) in order to reduce the possibility of causing mower instability if the transmission went immediately from forward drive to reverse drive.

To prevent inadvertent shifting of the transmission, the transmission or traction drive control is also required to have a lockout or other means to prevent moving from forward to reverse or vice versa without an intentional manipulation of the control (§ 1205.11(d)(3)).

**Warning labels (Section 1205.12).** The warning label shown in Fig. 10 is required to be applied to the blade housing or other shielding of all lawn mowers subject to this standard. This issue is discussed below in section D. IV. 12 of this preamble.

**Prohibited stockpiling (Section 1205.13).** Section 9(d)(2) of the Consumer Product Safety Act (15 U.S.C. 2058(d)(2)) authorizes the Commission to prohibit stockpiling of consumer products that are the subject of a consumer product safety rule. Stockpiling means manufacturing or importing such a product between the date of issuance of the rule and its effective date at a rate that is significantly greater than the rate at which such product was produced or imported during a base period specified by the Commission.

An anti-stockpiling provision is included as part of the proposed standard (§ 1205.14) to insure that the purposes of the standard, if promulgated, will not be circumvented. The proposed anti-



stockpiling rule specifies that power lawn mowers that do not comply with the standard shall not be manufactured or imported between the date of promulgation of the final standard and the date the standard becomes effective at a rate that is more than 20 percent greater than the rate at which power lawn mowers were produced or imported during the base period. The proposed base period is, at the option of the manufacturer or importer concerned, any period of 365 consecutive days beginning on or after September 1, 1971, and ending on or before August 31, 1976.

Since the requirements for 3 second blade stopping times after release of the "deadman control" become effective two years after the effective date of the remainder of the standard, mowers which do not comply with these provisions shall not be manufactured or imported between the date of promulgation of Part 1205 and the date these provisions become effective at a rate that is more than 20 percent greater than the rate at which power lawn mowers were produced or imported during the base period.

**Findings (Section 1205.14).** At the time a final rule is promulgated, this section will contain the Commission's findings on the topics outlined in the OTHER CONSIDERATIONS section (E) of this preamble.

#### D. PROVISIONS OF CU'S RECOMMENDED STANDARD THAT ARE NOT INCLUDED IN CPSC'S PROPOSED STANDARD

I. A number of the provisions that were in the standard that CU recommended to the Commission have not been included in the standard that the Commission is proposing. In some cases, the provisions were not proposed because the Commission's analysis of the particular risk of injury that the provision was intended to address did not show that the particular risk was sufficient to support the need for inclusion of the provision in a mandatory standard.

The following requirements that were recommended by CU have not been proposed by the Commission as part of the mandatory standard for the above reason:

1. **Electrical terminals.** That electrical terminals be protected against short circuiting by metal fuel containers or tools.

2. **Battery chargers.** Requirements for on-board battery charging systems.

3. **Fuel system.** Requirements for integrity of the fuel system. The proposal substitutes a general requirement that the fuel system not leak under any reasonably foreseeable condition of use.)

4. **Fuel tank venting.** Requirement for fuel tank venting.

5. **Key lock.** Requirement for a key lock for power start mowers.

6. **Control movement.** Requirements for the movement of traction drive clutch and/or neutral return controls, brakes, parking controls, speed controls, and steering controls.

7. **Parking brake interlock or alarm.** That a riding mower have a means to prevent ground travel when the parking brake is engaged, unless the service brak-

ing system and parking braking system are separate and independent or unless an alarm is provided to indicate when the parking brake is engaged.

8. **Instructions.** That instructions setting forth certain safety-related matters be provided.

II. A number of CU's other recommended requirements were not proposed because the Commission concluded that (1) the requirements were features of a voluntary standard that is complied with by at least the vast majority of mower manufacturers or is otherwise a generally followed manufacturing practice and (2) there is no apparent reason to believe that the requirements will not continue to be so. However, if manufacturers should begin to produce mowers which do not conform to these practices, the Commission will reconsider whether additional requirements should be included in the mandatory standard. The following requirements have not been proposed for this reason.

1. **Electrical.** That electrically-powered mowers be either of double-insulated construction or grounded.

2. **Electrical.** Requirements for (1) grounding conductors, (2) a leakage current test for non-double-insulated mowers, and (3) power supply cord strain relief.

3. **Battery powered mowers.** That battery powered mowers with nominal power supply potentials exceeding 30 volts contain certain protective features. Currently marketed mowers that exceed 36 volts contain these protective features, and the Commission believes that this level of protection is adequate.

4. **Battery started mowers.** Requirement for similar protective features in battery started internal combustion engine powered mowers.

5. **High tension cables.** Requirements for high tension cables.

6. **Structural integrity.** Requirements for general structural integrity of rotary mowers.

7. **Blades.** CU's blade attachment security test, blade impact test, and mower unbalance test.

III. The following CU requirements have not been proposed for both of the categories of reasons given above.

1. **Electrical.** Requirements that electrically-live parts and certain dead metal parts be so located or enclosed that they may not come into contact with uninsulated live parts.

2. **Electrical cords.** Requirements concerning electrical cords for electrically powered mowers.

3. **UL 82.** Requirement that would have incorporated certain provisions of UL 82, "Standard for Electric Gardening Appliances," Second Edition (February 14, 1974), by reference.

4. **Control location.** That certain controls be located within the operating zone.

5. **Required operating controls.** Requirements for the presence of certain operating controls and that there be independent traction and blade controls.

6. **Labels.** Requirements for warning labels and for label durability and

placement (except for the proposed blade housing label).

IV. A discussion of the reasons that particular other CU requirements were not proposed is given below.

1. **Sound levels.** CU recommended that, after the effective date of the standard, the allowable sound levels produced by power lawn mowers should be limited to 92 dbA for walk-behind mowers and 95 dbA for riding mowers. They also recommended that sound levels should be further reduced to 90 dbA for all mowers two years after the effective date of the standard. The Commission has not proposed these recommendations.

The rationale for sound level requirements is that long-term exposure to high sound levels can cause a loss of hearing. As noted by CU, it is also possible that noise can mask shouted warnings of potentially dangerous situations. The Commission does not believe that the difference between the sound levels for currently available mowers and the 90 dbA level is significant in permitting better communication of shouted warnings at the distances that are likely to be involved. However, data are available from which the Commission could conclude that exposure to noise can, over a period of years, produce a hearing loss. Any such loss would be the result of the cumulative effect of the noise from power lawn mowers and other noise sources to which the consumer might be exposed.

Under the Noise Control Act of 1972 (Sec. 4(c), Pub. L. 92-574, 86 Stat. 1235, 42 U.S.C. 4903(c)), the Administrator of the Environmental Protection Agency (EPA) has the responsibility of coordinating the programs of all Federal agencies relating to noise control and of establishing regulations to protect the public health and welfare from major sources of noise. On January 12, 1977, EPA published a FEDERAL REGISTER notice (42 FR 2525) identifying power lawn mowers as a major source of noise. This is the first step toward promulgation by EPA of a noise standard for power lawn mowers. This EPA standard could be effective at about the same time as the Consumer Product Safety Commission's Safety Standard for Power Lawn Mowers. Since the question of injury to hearing caused by lower levels of noise produced by power lawn mowers requires consideration of the cumulative effect of other noise sources, it appears that any action taken by the Commission to regulate the sound levels of power lawn mowers would unnecessarily duplicate functions that are specifically assigned to EPA by the Noise Control Act of 1972. Furthermore, EPA's authority to protect the public health and welfare apparently extends to the establishment of standards to protect against annoyance caused by noise as well as against the risk of hearing loss, so that EPA could possibly set more stringent requirements than would be possible under the Consumer Product Safety Act.

Requirements for 92 dba for walk-behind mowers and 95 dba for riding mowers are in the present voluntary standards and can be met by most currently-marketed mowers.



For the reasons given above, the Commission has decided to defer further consideration of sound level requirements for power lawn mowers until EPA has had a reasonable opportunity to issue regulations in this area.

2. *Electrically-powered mowers.* a. The requirements for electrically-powered mowers that were recommended by CU allowed the outer surface of the handles and controls to be made of electrically conductive material if this material were isolated from the electrical system by sufficient insulation. The Commission, however, believes that under conditions that may be encountered in use, electrically conductive paths could be formed across such insulation, thereby energizing the whole handle and control assembly. Accordingly, the Commission has changed this requirement so that the outer surfaces of these parts must be of or covered with an insulating material (§ 1205.7(a)).

b. The test recommended by CU to determine the sufficiency of the insulation has also been changed. CU recommended that a high voltage be applied across the insulation to metallic foil that was wrapped around it. This method of testing would not detect pin point holes and cracks in the insulation that are not large enough to allow the foil to enter but which could fill with conductive material (e.g., perspiration) under conditions of actual use. Accordingly, the Commission has proposed a test method whereby the insulated handle or control is submerged in a conductive solution that can enter tiny holes and cracks in the insulation, and the resistance of the entire insulated area is measured between the conductive solution and the nearest conductive part of the mower (§ 1205.7(a)(2)).

c. The plug blade shielding test recommended by CU called for the use of a representative range of commercially available extension cords. The recommended CU requirement could result in a plug passing the test with some extension cords and failing with others. Also, to the extent that different sets of cords could be selected for use in this test, the test might not yield repeatable results. In order to eliminate these difficulties, the Commission proposal substitutes a specified gage for the extension cords (§ 1205.7(c)). The gage consists of the suitable plug from UL 498, "Attachment Plugs and Receptacles," October 29, 1976, connected as shown in Fig. 8.

CU's plug shielding test involved contacting the plug blade with a test probe and then inserting the plug into the extension cord receptacle to see if the blade could contact the extension cord contact while the test probe remains in contact with the plug blade. In the proposal, the Commission has reversed this procedure so that the plug is fully inserted into the gage and then withdrawn to the point that the test probe can be inserted to make contact with the plug blades. The Commission believes that since the hazard exists in the situation where the plug blade is touching the extension cord contacts, the test should begin in this mode.

Also, the hazard is more likely to cause injury during withdrawal of the plug than during insertion since the hand would be more likely to be lower on the plug when trying to pull it out.

3. *Fuel tank filling.* CU's requirement that fuel tanks not overflow while being filled has not been proposed. This test is not sufficiently repeatable, and the hazard is also addressed by the overflow protection test, which has been retained (§ 1205.6(b)).

4. *Exhaust system surface temperatures.* CU's requirement that exhaust system surfaces that are above the blade housing and that reach temperatures above 150° C. (302° F.) shall be inaccessible or shielded has not been proposed. Injuries can occur even at the limit suggested by CU, and the Commission believes that additional research is required in order to determine if a practical temperature limit exists which would significantly reduce the generally minor injuries that do occur from this hazard.

5. *Traction disengagement control.* CU's requirement for a traction disengagement control for walk-behind mowers has not been proposed because the blade deadman control largely eliminates any hazard that might be caused by the lack of this feature.

6. *Braking modulation.* The test recommended by CU to determine the ability of the brake system to modulate its braking between zero and maximum braking force has not been proposed because the results are too dependent on operator skill and the test can be dangerous to perform.

7. *Dynamic stability.* CU's recommended requirements for testing the dynamic stability of riding mowers have not been proposed because they are too dependent upon operator skill and can be dangerous to perform.

8. *Housing strength test.* The housing strength test recommended by CU has not been proposed since the Commission believes that the thrown objects test will also adequately test for housing strength. If the mower housing were weak enough to be penetrated during the thrown objects test, the housing would not shield against the thrown objects, and that test would be failed. Furthermore, the test is a feature of the voluntary standard that is complied with by the vast majority of presently available mowers. Accordingly, an additional test to see if the housing can be penetrated is not necessary.

9. *Certification label.* CU's requirement for a label stating that the mower "meets U.S. Consumer Product Safety Commission safety regulations for power lawn mowers" has not been proposed. The Commission intends to address this topic in a separate certification regulation that the Commission will develop under § 14 of the Consumer Product Safety Act (15 U.S.C. 2063). The Commission will propose that regulation for public comment and intends that it will become effective on the effective date of Part 1205. A more detailed discussion of issues associated with certification requirements is given in section E of this notice, "Other Considerations."

10. *Starting stability.* CU recommended a starting stability test for manually started mowers that were not provided with a slip-resistant area which would enable the operator to stabilize the mower while starting. The Commission, however, has proposed a requirement that any mower whose blade can begin movement when it is started is required to have its starting controls in the operating control zone, where it would be relatively easy to stabilize the mower against a manual starting force. For other mowers, the starting stability is not a safety-related feature since the blade will not move when the mower is started.

11. *Blade harmless test and interlocks.* As explained in section C of this preamble under § 1205.5, CU's requirements for a blade harmless test as an alternative to blade stopping and for interlocks to discourage disabling of the "deadman" have not been included in the proposal.

12. *Warning label.* The label for the mower housing that was recommended by CU depicts a hand with severed fingers and dripping blood. Some people object to this label as being offensive to the sensibilities of the consumer because of its gory nature. Others believe that these features of the label are justified since they impress the user with a realization of severe hazard associated with contacting an operating blade. After considering the objections which had been raised to the CU label and considering a number of alternative labels, the Commission decided to propose the label shown in Fig. 10, which was devised by the Commission's Office of the Medical Director (OMD). The Commission believes that the OMD label will be as effective as the CU label in warning the consumer of the danger of contact with the blade without unnecessarily subjecting the consumer to the features of the CU label which were the source of some objections.

#### E. OTHER CONSIDERATIONS

*Findings.* Section 9(c) of the act requires that prior to promulgating a consumer product safety rule the Commission shall consider and make appropriate findings as to:

- (1) The degree and nature of the risk of injury the rule is designed to eliminate or reduce;
- (2) The approximate number of consumer products, or types or classes thereof, subject to such rule;
- (3) The need of the public for the consumer products subject to such rule, and the probable effect of such rule upon the utility, cost, or availability of such products to meet such need;
- (4) Any means of achieving the effect of the rule while minimizing adverse effects on competition or disruption or dislocation of manufacturing and other commercial practices consistent with the public health and safety;
- (5) That the rule (including its effective date) is reasonably necessary to eliminate or reduce an unreasonable risk

of injury associated with power lawn mowers; and

(6) That promulgation of the rule is in the public interest (15 U.S.C. 2058 (b) and (c)).

The Commission must also include these findings in the final standard.

Section 9(b) of the act (15 U.S.C. 2058 (b)) requires that in promulgating a consumer product safety rule, the Commission shall also consider and take into account the special needs of elderly and handicapped persons to determine the extent to which such persons may be adversely affected by the rule.

The Commission welcomes comments from interested parties relating to all aspects of the subject matter of these findings.

**Economic analysis.** As required by section 9(c) of the act (15 U.S.C. 2058(c)), the Commission has taken into account in its consideration of the proposed standard the need of the public for power lawn mowers and the probable effects of the standard upon the utility, cost, and availability of the product to meet such need. These are among the factors the Commission weighed in estimating the economic impact of the proposed standard on consumers, manufacturers of power lawn mowers or their components, persons involved in the distribution and sale of this product, and other areas of the general economy. A draft economic impact analysis is available for inspection or copying in the Office of the Secretary. The Commission welcomes comments on the analysis and on the possible economic effects of the proposed standard.

**Environmental impact.** After due deliberation, the Commission has determined that there are no significant potentially adverse environmental effects associated with this standard. The factors considered in making this determination are contained in an environmental impact assessment that may be seen in, or obtained from, the Office of the Secretary.

**Preemption.** Section 26(a) of the act (15 U.S.C. 2075(a)) provides that whenever a consumer product safety standard issued under the act is in effect, no state or political subdivision of a state shall have any authority either to establish or to continue in effect any provision of a safety standard or regulation which prescribes any requirements as to the performance, composition, contents, design, finish, construction, packaging, or labeling of such products if the requirements are designed to deal with the same risks of injury associated with such consumer product that are dealt with by the consumer product safety standard, unless the state or local requirements are identical to the requirements of the standard promulgated under the act. This means that state or local requirements, to the extent they address the described types of requirements and the same risks as any Federal standard that is ultimately issued, will be preempted by the Federal standard upon its effective date unless they are identical to the final Federal standard.

However, section 26(c) of the act (15 U.S.C. 2075(c)) provides that upon application of a state or political subdivision thereof, the Commission may, by rule and after notice and opportunity for oral presentation of views, exempt a proposed safety standard or regulation described in the application from the preemption provisions of section 26(a) (under such conditions as the Commission may impose). In such cases, the Commission must find that the proposed state or local standard or regulation (1) imposes a higher level of performance than the standard promulgated under the act and (2) does not unduly burden interstate commerce.

Section 26(a) does not, however, prevent the Federal Government or the government of any state or political subdivision of a state from establishing a safety requirement applicable to a consumer product for its own use if such requirement imposes a higher standard of performance than that required to comply with the otherwise applicable Federal standard.

**Certification and labeling.** Manufacturers and private labelers of power lawn mowers will be required to comply with the certification provisions of section 14(a)(1) of the act (15 U.S.C. 2063(a)(1)) after the effective date of the power lawn mower safety standard. Section 14(a)(1) requires manufacturers (and private labelers, if the product bears a private label) to issue a certificate which states that the product conforms to all applicable consumer product safety standards and specifies any applicable standard. The certificate shall be based on a test of each product or upon a reasonable testing program and must state the name of the manufacturer or private labeler issuing the certificate and include the date and place of manufacture.

In addition, section 14 (b) and (c) of the act allows, but does not require, the Commission to issue regulations which would (1) prescribe a reasonable testing program, (2) specify which manufacturer shall issue the certificate when a product has more than one "manufacturer," and (3) require labeling of products subject to consumer product safety standards. Specific certification and labeling requirements of the type authorized by section 14 (b) and (c) of the Consumer Product Safety Act are not included in the standard, but the Commission anticipates that they will be addressed in a separate rule to be developed under that section. The rule on certification and labeling will be separately proposed for public comment in accordance with the requirements of the Administrative Procedure Act (5 U.S.C. 553). It is intended that the final rule on certification and labeling will be issued prior to the effective date of the power lawn mower safety standard and will become effective at the same time as that standard.

Section 16 of the act (15 U.S.C. 2065) requires that manufacturers, importers, and private labelers of a consumer product shall establish and maintain such records and make such reports as the

Commission may reasonably require for the purposes of implementing the act or to determine compliance with rules or orders prescribed under the act. Requirements under this section could be included in a certification regulation in order to insure that adequate records of a testing program are kept.

Although the Commission does not intend to issue a certification regulation as part of the standard that is being proposed in this notice, the Commission believes that it would be helpful to solicit comments on issues related to this subject so that these comments can be considered in drafting a proposed certification regulation. The following questions are among those that will be considered in the process of issuing a certification regulation:

1. Concerning the requirement for a "reasonable" testing program:

(a) Should the Commission issue no regulation in this area? In this event, each manufacturer would have to formulate its own reasonable testing program.

(b) Should the Commission prescribe the outer limits or parameters of what it considers a reasonable testing program, but issue no specific requirements for sampling and testing?

(c) Should the Commission prescribe specific requirements for sampling and testing?

2. Who should be required to certify? To what extent should component manufacturers be required to certify their components? To what extent should manufacturers be allowed to rely upon the certification of component manufacturers?

3. What would be the most appropriate and effective testing program? Would it be model qualification, production quality control, sampling and testing, some combination of these techniques, or some other method to meet the certification requirement of the statute?

4. Should manufacturers be required to retain the samples that are tested? If so, for how long?

5. What records should be kept of the manufacturer's testing programs, the test; performed, and the test results? How long should such records be maintained?

6. Section 14 of the act (15 U.S.C. 2053(c)) sets forth information which the Commission may require on labels on the product. Which of this information would be useful to the consumer?

In addressing these questions, commenters should keep in mind the nature of the power lawn mower industry and the cost and effects of any contemplated testing program. (It has been estimated that it will require approximately 10 days to test a mower to see if it complies with all the provisions of the proposed standard.)

Comments that solely concern certification issues will not be addressed in the preamble to any final consumer product safety standard for power lawn mowers that may be issued by the Commission. Rather, these comments will be considered by the Commission prior to

proposing a certification regulation. The substantive comments that are received on that proposal will be addressed in the preamble to the final certification regulation when it is issued.

**Metric units.** The proposed Part 1205 will be enforced on the metric units for dimensions, weights, etc. that are given in the Part. However, for convenience, the English equivalents are also given.

**F. EXTENSION OF TIME**

Section 9(a)(1) of the act (15 U.S.C. 2058(a)(1)) requires that within 60 days after the publication of a proposed consumer product safety rule, the Commission shall either (1) promulgate a rule respecting the risk of injury associated with such product, or (2) withdraw the applicable notice of proceeding, unless the Commission extends the 60 day period for good cause shown and publishes its reasons in the FEDERAL REGISTER. The process of promulgating a consumer product safety rule or withdrawing the applicable notice of proceeding requires the Commission to consider the substantive comments that are received on the proposal, decide if any changes to the proposed rule are required, make the findings required by section 9 of the act, and prepare an appropriate FEDERAL REGISTER notice. In the case of the proposed power lawn mower standard, the Commission believes that these actions will require at least 90 days. Since 60 days are being allowed for the public to comment on the proposed rule, a total of at least 150 days from the date of publication of this notice will be required for the Commission to promulgate a rule (or withdraw the notice of proceeding). Accordingly, the Commission hereby extends until October 3, 1977, the date by which it must either publish a consumer product safety rule respecting the risk of injury associated with power lawn mowers or withdraw by rule, the applicable notice of proceeding. This period may be further extended for good cause shown.

**G. CONCLUSION AND PROPOSAL**

Having considered CU's recommended safety standard for power lawn mowers and the supporting material submitted therewith, together with other relevant information, the Commission concludes that the recommended standard, changed as described above and with additional editorial changes, should be proposed as a consumer product safety standard.

Therefore, pursuant to provisions of the Consumer Product Safety Act (7(f), Pub. L. 92-573, 86 Stat. 1215, 15 U.S.C. 2056(f)), the Commission proposes that Title 16, Chapter II of the Code of Federal Regulations be amended by adding to Subchapter B a new Part 1205 as follows:

**PART 1205—SAFETY STANDARD FOR POWER LAWN MOWERS**

**Subpart A—The Standard**

- Sec. 1205.1 Scope, application, background, and effective date.
- 1205.2 Definitions.

- Sec. 1205.3 Walk-behind mower protective devices.
- 1205.4 Thrown objects test for rotary mowers.
- 1205.5 Walk-behind mower controls.
- 1205.6 Fuel ignition hazards.
- 1205.7 Electrically-powered mowers.
- 1205.8 Riding mower stability and shield requirements.
- 1205.9 Riding mower steering requirements.
- 1205.10 Riding mower brakes.
- 1205.11 Riding mower controls.
- 1205.12 Warning labels.
- 1205.13 Prohibited stockpiling.
- 1205.14 Findings.

**AUTHORITY:** Sec. 2, 3, 7, 9, 14, 19, Pub. L. 92-573, 86 Stat. 1207, 1208, 1212-17, 1220, 1224; 15 U.S.C. 2051, 2052, 2056, 2058, 2063, 2068.

**§ 1205.1 Scope, application, background, and effective date.**

(a) *Scope.* (1) This Subpart A of Part 1205, a consumer product safety standard, prescribes safety requirements for power lawn mowers, which, for the purposes of this Part, are defined as grass-cutting machines with a minimum cutting width of 304 mm. (11.96 in.) that employ an engine or a motor as a power source and are consumer products as defined in section 3(a)(1) of the Consumer Product Safety Act (15 U.S.C. 2052(a)(1)). This definition includes both rotary and reel-type mowers and applies to both riding and walk-behind mowers. Mowers powered by internal combustion engines or electric motors are included. Where an individual section within this Subpart A of Part 1205 applies only to certain types of the mowers included within "power lawn mowers," the section will state the types to which it applies. The requirements of this standard are designed to reduce or eliminate the unreasonable risks of death or injury associated with power lawn mowers.

(2) Section 1205.14 sets forth the findings which the Consumer Product Safety Commission is required to make by section 9 of the Consumer Product Safety Act (15 U.S.C. 2058) in issuing this standard.

(3) *Other standards.* (i) Portions of the following standards are incorporated by reference into this standard:

(A) ANSI/ASTM D 484-71 (R 1976), "Standard Specification for Hydrocarbon Dry Cleaning Solvents"—Table 1 (Type I solvent) (See § 1205.6(b)(2)).

(B) Federal Specification FF-N-105B (3), "Nails, Brads, Staples and Spikes: Wire, Cut and Wrought" (4 Oct 74) (See § 1205.4(b)(2)(v)).

(ii) ANSI standards are approved by, published by, and available from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018. ASTM standards are approved by, published by, and available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103. Federal Specifications are available for reference at General Services Administration Regional Business Service Centers and at some Federal Government Depository Li-

braries (librarians will be able to help locate the nearest copy).

(iii) The requirements that have been incorporated by reference from these standards are those set forth in the particular revision or edition of the standard that is specified above. Any subsequent revisions of the relevant portions of the standards are not thereby incorporated into this Part 1205.

(b) *Application.* (1) This Part 1205 shall apply to all power lawn mowers that are produced or distributed for sale to or for the personal use, consumption, or enjoyment of consumers in or around a permanent or temporary household or residence, a school, in recreation or otherwise. This Part does not apply to power lawn mowers that are not customarily produced or distributed for sale to, use or consumption by, or enjoyment of a consumer.

(2) Power lawn mowers manufactured after the effective date of this standard must meet the requirements of this standard if the mower is manufactured for sale, offered for sale, or distributed in commerce within the United States or if the mower is imported into the United States.

(3) The requirements of Subpart A of this Part 1205 are based on the metric units for weights, dimensions, etc., that are given in the Part. However, for convenience, the English equivalents are also given. Only English units are given for plywood thicknesses, since this is not a dimension but rather a designation of a commercially available size. There is no current equivalent metric designation.

(c) *Background.* (1) On August 15, 1973, the Outdoor Power Equipment Institute (OPEI) petitioned the Consumer Product Safety Commission pursuant to section 10 of the Consumer Product Safety Act (15 U.S.C. 2059) to commence a proceeding for the development of a consumer product safety standard for power lawn mowers. In its petition, OPEI also requested that the Commission publish a standard of the American National Standards Institute, ANSI B71.1-1972, "Safety Specifications for Power Lawn Mowers, Lawn and Garden Tractors, and Lawn Tractors," with amendments and a compliance program, as a proposed consumer product safety standard.

(2) After consideration of the available information concerning injuries associated with power mowers, the Commission preliminarily determined that power lawn mowers present unreasonable risks of death or injury to consumers. Accordingly, on November 16, 1973, the Commission granted the portion of the OPEI petition which requested that the Commission commence a proceeding to develop a consumer product safety standards for power lawn mowers. The Commission began the development of the standard by publishing a notice of proceeding in the FEDERAL REGISTER of July 22, 1974 (39 FR 26662), inviting interested persons to submit an existing standard as a proposed consumer product safety standard or to submit offers to develop a recommended safety standard.



(3) In response to this invitation, the Commission received one existing standard and an Invitation for Bid, issued by the General Services Administration, that was referred to as an existing standard, for consideration as a proposed consumer product safety standard, and also received four offers to develop a standard applicable to power lawn mowers. The Commission subsequently accepted the offer of Consumers Union of United States, Inc., (CU) to develop a consumer product safety standard applicable to power lawn mowers.

(4) The requirements of this Part 1205 have resulted from the standard which was recommended by CU and from certain additions, deletions, modifications, and editorial changes which were made by the Commission after an extensive evaluation of CU's recommended standard. All material which was considered by the Commission during this proceeding is available from the Office of the Secretary, Consumer Product Safety Commission, 1111 18th Street NW., Washington, D.C. 20207. During its evaluation, the Commission obtained the opinion of independent experts and groups of consumers on various questions which were raised during the evaluation.

(5) A more detailed account of the background of this Part can be found at 42 FR 23052.

(c) *Effective date.* Except where stated otherwise, Subpart A of this Part 1205 shall become effective 2 years after promulgation of Part 1205. In § 1205.4(b) and § 1205.11(b)(2) (relating to blade stopping times), a more stringent requirement becomes effective on 4 years after promulgation of Part 1205).

#### § 1205.2 Definitions.

(a) As used in this Part 1205:

(1) "Battery powered mowers" means mowers that utilize storage batteries as a source of power.

(2) "Blade" means any device, mechanism, or means that is intended to cut grass during mowing operations and includes all blades of a multibladed mower.

(3) "Blade tip circle" means the path described by the outermost point of the blade edge as it moves about its axis.

(4) "Brake pedal" means the portion of a foot operated brake that is intended to be contacted by the foot.

(5) "Cutting width" means the blade tip circle diameter or, for a multi-bladed mower, the width, measured perpendicular to the forward direction, of a composite of all blade tip circles.

(6) "Electrically-powered mower" means those mowers utilizing the continuously-supplied residential voltage commonly available in the U.S. at re-

ceptacles installed in homes (nominally 120 volts A.C.).

(7) "Engine" means a power producing device which converts thermal energy from a fuel into mechanical energy.

(8) "Equivalent test weight" means a weight used to simulate a standard test operator in some tests of riding power lawn mowers. Its weight is  $95 \pm 5$  kg. ( $209 \pm 11$  lb.). The center of gravity of the weight is 230 cm. (9.1 in.) above the lowest point of the operator-support surface of the seat, and 250 cm. (9.8 in.) forward of the seat reference point.

(9) "Fuel system" means an arrangement of components designed to deliver combustible matter to an engine.

(10) "Grass catcher" means a part or parts attached to the mower that provide a means for collecting grass clippings or debris discharged by the mower.

(11) "Horizontal plane of blade" means the plane of the blade tip circle.

(12) "Manual starting" means starting the mower engine with power obtained from the physical efforts of the operator.

(13) "Maximum operating speed" means the maximum rpm obtainable by

the engine or motor under the conditions of the particular test where the term is used.

(14) "Motor" means a power producing device that converts electrical energy into mechanical energy.

(15) "Mulching mower" means a power rotary mower without a discharge opening (designed to leave clippings on the ground).

(16) "Normal starting means" means the primary mechanism intended to be actuated by the operator to start a mower's engine or motor (e.g., the cord mechanism of a manual start engine, the switch of an electric motor, or a power start mechanism).

(17) "Operating control zone" means, (1) for a walk-behind mower, the space enclosed by a cylinder with a radius of 380 mm. (14.9 in.) having a horizontal axis that is (1) perpendicular to the fore-aft centerline of the mower and (2) tangent to the rearmost part of the mower handle, extending 100 mm. (3.9 in.) beyond the outermost portion of each side of the handle. See Fig. 1.

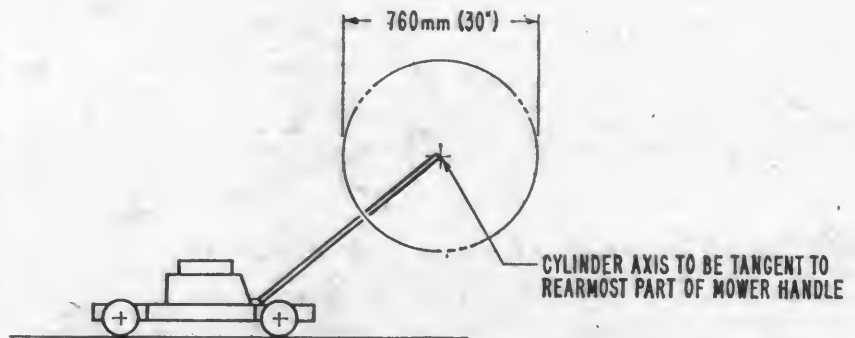
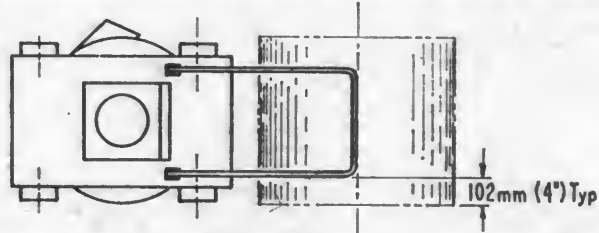


FIG 1-OPERATING CONTROL ZONE(Walk Behind)

(ii) for a riding mower, the space enclosed by a vertical cylinder having a radius of 510 mm. (20 in.) that is located so that the rearmost part of the cylinder

passes through the seat reference point when the seat, if adjustable, is in its most forward position. See Fig. 2.

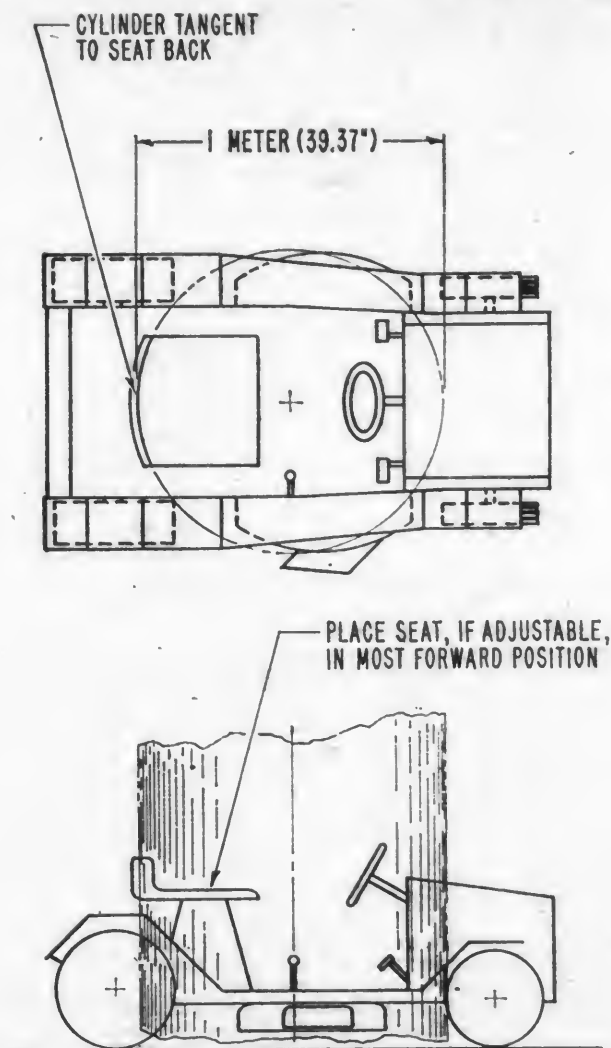


FIG 2-OPERATING CONTROL ZONE (Riding Mower)

(18) "Operating position" means the location and position occupied by a power lawn mower operator while mowing a lawn. For a walk-behind mower, the operator is directly behind the mower with his or her hands on the mower handle(s) and feet on the ground. For a riding mower, the operator is in the seat, with his or her hands on the steering con-

trol(s) and feet either on controls or in the areas of the mower intended for foot placement.

(19) "Power lawn mower" means a grass cutting machine with a minimum cutting width of 304 mm. (11.96 in.) that employs an engine or a motor as a power source and is a consumer product as defined in section 3(a) (1) of the Consumer

Product Safety Act (15 U.S.C. 2052(a) (1)). See § 1205.1(a) (1).

(20) "Power source" means an engine or motor.

(21) "Riding mower" means a self-propelled mower on which an operator rides while mowing. The cutting mechanism may be either an integral part of the mower or an attachment. Garden tractors and lawn and garden tractors with a mowing attachment are considered riding mowers.

(22) "Rotary mower" means a power lawn mower in which one or more cutting blades rotate about at least one vertical axis.

(23) "Seat reference point" means the point defined by the intersection of (i) a horizontal plane passing through the lowest point of the seating surface of a riding mower and (ii) a vertical line passing through the rearmost point of the seat backrest surface, or seating surface if there is no backrest, that is on the fore-and-aft centerline of the seat.

(24) "Shield" means a part or an assembly which restricts access to a hazardous area. For the purposes of this Part 1205, the blade housing is considered a shield.

(25) "Standard test operator" means a person weighing  $95 \pm 5$  kg. ( $209 \pm 10$  lbs.) and with a height of  $188 \pm 5$  cm. ( $74.02 \pm 1.90$  in.).

(26) "Tiller bar steering" means a steering system in which the operator uses a single moment arm to create an uncoupled force that applies steering torque in the manner that a boat's tiller applies torque to the rudder post.

(27) "Traction drive" means the mechanism which transmits power from a power source of a mower to the drive wheels to propel the mower across the ground.

(28) "Walk-behind mower" means a power lawn mower, either pushed or self-propelled, normally controlled by an operator walking behind the mower.

(b) The definitions given in the Consumer Product Safety Act (15 U.S.C. 2052) apply to this Part 1205.

§ 1205.3 Walk-behind mower protective devices.

(a) Shields. (1) General requirements. Shields on walk-behind mowers (including the housing) shall meet the following requirements:

(i) During the foot probe test and terrace test of paragraphs (a) (2) (i) and (a) (2) (ii) of this section, respectively, the shields shall prevent the foot probe of Fig. 3 from entering the path of the blade or causing any part of the mower to enter the path of the blade.

## PROPOSED RULES

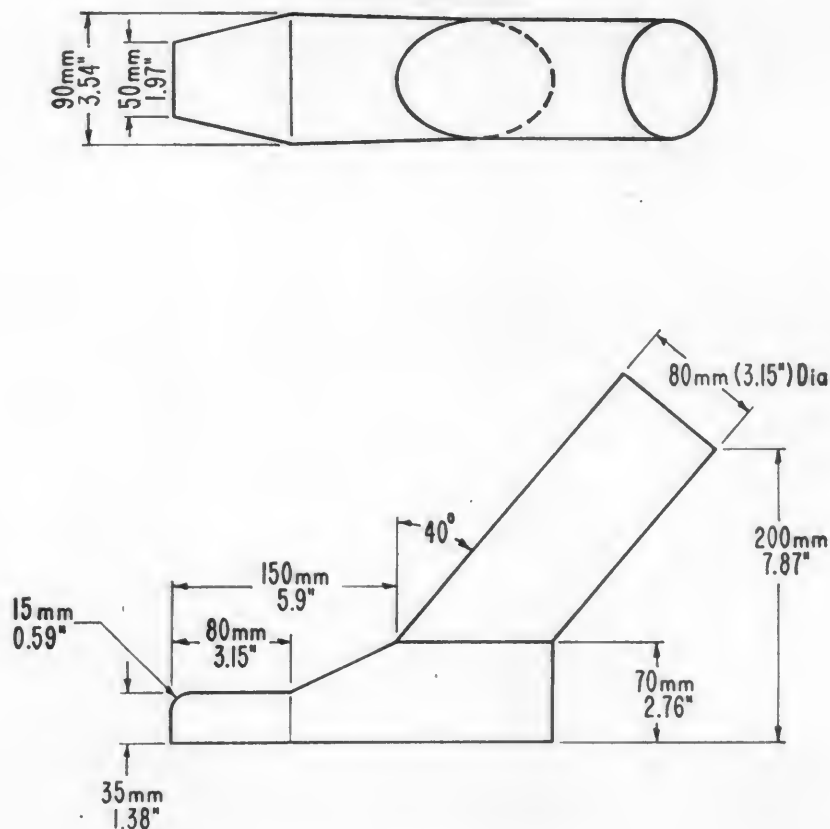


FIG 3-FOOT PROBE

(ii) The shields shall not permanently separate, crack, or deform in a manner that prevents the mower from meeting the requirements of this standard when each of the front, back, and both sides of the mower are, in turn, subjected to a 222 newton (50 lb.) force, uniformly distributed over not less than half the length of the shield on that side of the mower. The force shall be applied in the direction which produces the maximum deformation of the shield.

(iii) During the obstruction test of paragraph (a) (2) (iii) of this section, shields shall not (A) stop the mower as a result of contact with the raised obstacle, (B) enter the path of the blade, or (C) cause more than one wheel at a time to be lifted from the fixture surface.

(2) *Shield tests—general.* (i) *Foot probe test.* (A) The following test conditions shall be observed:

(1) The test shall be performed on a level surface.

(2) Pneumatic tires, when present, shall be inflated to the cold pressures recommended by the mower manufacturer.

(3) The test shall be performed with the mower housing at its highest setting relative to the ground.

(4) The blade shall be adjusted to its lowest position relative to the blade housing.

(5) The mower shall be secured so that the mower may not move horizontally but is free to move vertically.

(6) If a grass catcher is provided or sold by the mower manufacturer for use with the mower, the test shall be performed both with and without the grass catcher in place. A grass catcher is not considered a shield except for the purposes of this foot probe test.

(B) *Procedure.* The foot probe of Fig. 3 shall be inserted under all points of the bottom edge of the blade housing and shields with the "sole" of the probe in contact with the supporting surface until the applied horizontal force reaches 18 newtons (4.1 lbs.) or the blade housing lifts, whichever occurs first. As the foot probe is withdrawn after each insertion, the "toe" shall be pivoted upward around the "heel" as much as possible without lifting the mower.

(ii) *Terrace test.* (A) Conditions (2), (3), and (4) of the foot probe test of paragraph (a) (2) (i) (A) of this section shall also apply to this test.

(B) The test shall be performed on the fixture shown in Fig. 4, which has a horizontal surface connected to a surface inclined 30° from the horizontal by a curved surface having a radius of curvature of 500 mm. (19.68 in.).



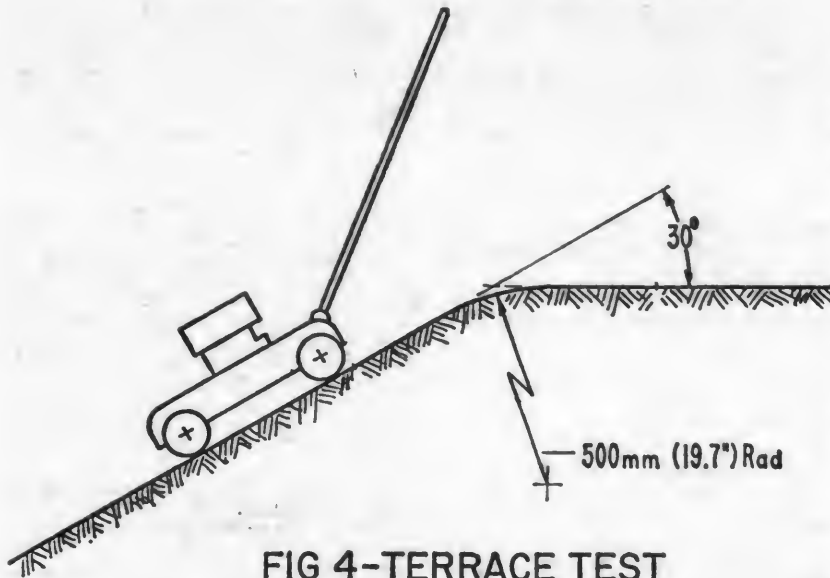


FIG 4-TERRACE TEST

(C) The mower shall be moved over the working length of the test fixture (see Fig. 4), attempting to keep at least three of the mower's wheels, including both rear wheels, in contact with the fixture surface. The working length shall begin at the point where the front wheels first contact the curved surface and end when the rear wheels have left the curved surface.

(D) At each position on the fixture, the mower shields shall not allow the foot probe of Fig. 3 to enter the path of the blade or cause any part of the mower to enter the path of the blade when the probe is inserted and withdrawn in the following manner at all points on the bottom edge of the rear of the blade housing and shields that are located between the rear wheels or the spread of the handles, whichever is wider. During each insertion, a portion of the "sole" of the probe shall be in contact with the test fixture surface and the probe shall be inserted as far as possible until the applied force parallel to the "sole" of

the foot probe reaches 18 newtons (4.1 lbs.) or the blade housing lifts, whichever occurs first. As the foot probe is withdrawn after each insertion, the "toe" shall be pivoted upward around the "sole" as much as possible without lifting the mower. In a mower with a swing-over handle, both the front and rear of the mower shall be probed.

(iii) *Obstruction test.* (A) Conditions (2) and (3) of the foot probe test of paragraph (a) (2) (i) (A) of this section shall also apply to this test.

(B) The test shall be performed on the fixture of Fig. 5, which consists of a level surface having (1) a 25 mm. (.99 in.) deep depression with a 150 mm. (5.90 in.) radius of curvature and (2) a raised obstacle 15 mm. (0.60 in.) square, each extending the full width of the fixture. The depression shall be lined with a material having a surface equivalent to a 16- to 36-grit abrasive. The depression and the obstacle shall be located a sufficient distance apart so that the mower contacts only one at a time.

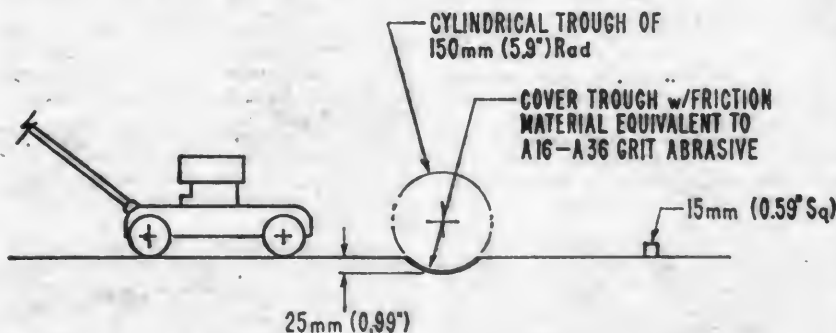


FIG 5-OBSTRUCTION TEST FIXTURE

(C) The test fixture may be relieved to prevent interference with any blade retaining device.

(D) The mower shall be pushed forward and pulled rearward perpendicularly across the depression and the raised obstacle on the fixture. The mower shall be pulled and pushed without lifting with a horizontal force sufficient to transit the obstruction fixture at a speed not to exceed 0.7 meters/sec. (2.2 feet/sec.).

(E) As required by § 1205.3(a) (1) (iii), mower shields must not cause more than one wheel at a time to be lifted from the fixture surface and no shield shall stop the mower as a result of contact with the raised obstacle.

(3) *Movable shields.* In addition to the general shield requirements of paragraph (a) (1) of this section, movable shields must meet the following requirements:

(i) Shields which are movable for the purpose of attaching auxiliary equipment shall return automatically to a position that meets the requirements of Subpart A of this Part 1205 when the attached equipment is removed.

(ii) Shields shall not be removable without the use of tools. For the purposes of this requirement, a coin shall not be considered a tool.

(b) *Handles.* Power mower handles must meet the following requirements.

(1) *Removal.* In order to prevent the unintentional separation of the handle from the mower, the removal of a handle from a power lawn mower shall require the removal or unlatching of at least one other part.

(2) *Upstop.* A restraining means shall be provided to prevent the rearmost part of the handle from moving closer than 430 mm. (16.93 in.) to the vertical line through the nearest point on the blade tip circle. A means to deliberately and temporarily disengage the handle restraining means is permitted.

(3) *Folding or pivoting handles.* A mower that has an electric cord integral to the mower for connection to an external power source (e.g., to supply an integral battery charger) and that has a folding or pivoting handle shall be constructed so that the integral electric cord cannot be entrapped by the folding or pivoting action of the handle.

(4) *Handle strength tests.* During the tests set forth below, the rearmost part of the handle shall not move closer than 430 mm. (16.93 in.) to the vertical line through the nearest point on the blade tip circle and no visible cracks or permanent deformation shall occur in the handle assembly, mounting area, or restraining means.

(i) *Handle structure test.* While the mower is on a horizontal surface, the handle shall be tested in all intended use positions by (A) applying a torque to the handle about its center axis in a clockwise direction until the left wheels are lifted from the supporting surface and (B) by then applying a torque to the handle about its center axis in a counterclockwise direction until the right wheels lift. Repeat 50 times and inspect.



(c) *Pass/fail criteria.* A mower passes the thrown objects test if all of the following occur:

- (1) Not more than 149 of the injected objects hit anywhere on the target.
- (2) Not more than 49 of the injected objects hit the target above the 15 degree line and not more than 14 of those hits are above the 30 degree line.
- (3) Not more than 104 hits are in the right quadrant.
- (4) Not more than 74 hits are in each of the front, left, and rear quadrants, except that for walk-behind mowers, no hits are allowed in the rear quadrant above the 30 degree line and not more than 1 hit is allowed in the rear quadrant below the 30 degree line.
- (5) For riding mowers, not more than 1 hit is in the operator target.

§ 1205.5 Walk-behind mower controls.

(a) *Blade control systems*—(1) *Requirements for blade control.* A walk-behind power mower shall have a blade control system that will perform the following functions:

- (i) Prevent operation of the blade unless the control is actuated by the operator.
- (ii) Require continuous contact with the operator in order for the blade to continue to be driven.
- (iii) Upon release of the control by the operator, cause the blade to stop within a time that meets the requirements of paragraph (b) of this section. For a mower with manual starting controls, this control shall stop the blade without stopping the power source, unless the mower meets the "easy restart" criteria of paragraph (d) of this section.

(2) A separate blade control system is not required for a self-propelled walk-behind power mower that has a traction drive control that also satisfies the requirements of paragraph (a) (1) of this section with respect to blade operation.

(3) All walk-behind power mowers shall have, in addition to any blade control required by paragraph (a) (1) of this section, another control which must be manually actuated before a stopped blade can be restarted.

(b) *Blade stopping times*—(1) *Requirements.* After release of the blade control required by paragraph (a) (1) of this section, the blade of a walk-behind power mower shall come to a complete stop within whichever of the following times is applicable:

- (i) For mowers manufactured after the overall effective date of the standard but before two years after the overall effective date of the standard, the blade shall stop within 5.0 seconds of the release of the blade control.
  - (ii) For mowers manufactured on or after two years after the overall effective date of the standard, the blade shall stop within 3.0 seconds of the release of the blade control.
- (2) *Test.* (i) *General.* Any test method that will measure the time between the release of the blade control and the coming to rest of the blade to the nearest 0.1 second may be utilized. The times may be determined by visual observation,

such as by manual operation of a stopwatch. In this case, blade movement may be observed by placing the mower over a reflective surface or by placing the mower over a transparent surface so that it may be observed from below.

(ii) *Conditions.* (A) The mower shall be operated at maximum operating speed for at least 6 minutes immediately prior to the test.

(B) The blade must be at maximum operating speed when the blade control is released.

(c) *Starting controls location.* Walk-behind mowers with blades that commence operation when the power source starts shall have their starting controls located within the operating control zone.

(d) *Easy restart.* (1) *Requirement.* Walk-behind mowers with manual starting controls and a power source that stops when the blade control of paragraph (a) (1) of this section is released must be capable of being started by no more than three applications of the starting procedure outlined in paragraph (d) (2) (ii) of this section.

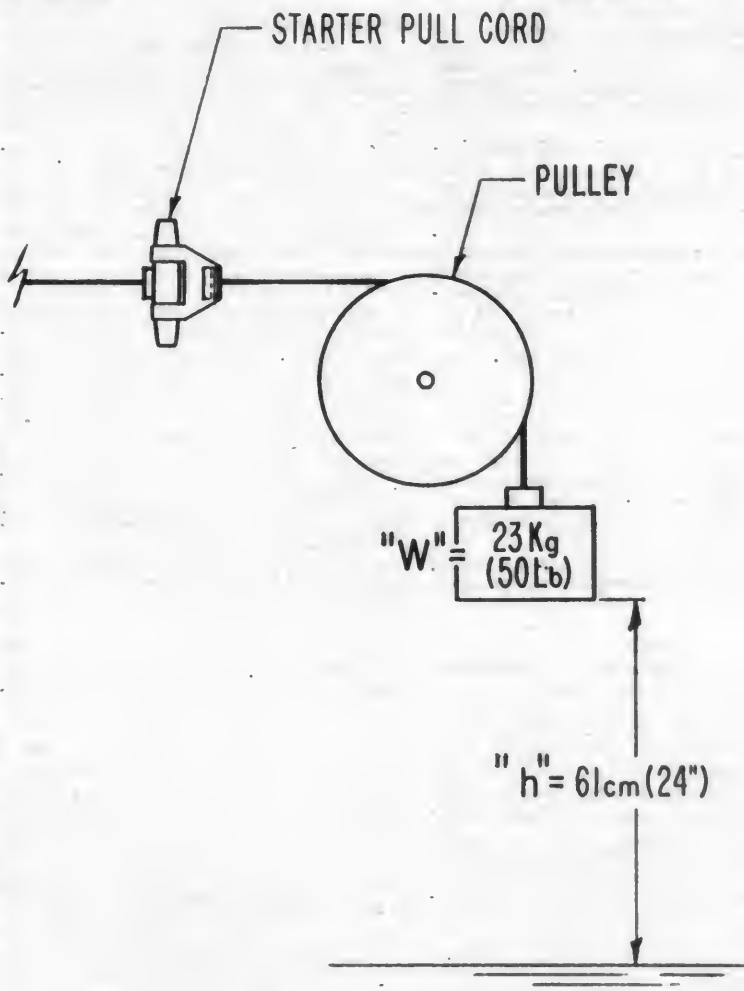


FIG 7—RESTART TEST SETUP

(2) *Test.* (i) *Equipment.* The test apparatus shown in Fig. 7 shall be utilized. The apparatus shall be connected to the starting control so that the control will be pulled in the direction specified in the manufacturer's instructions when the weight W is released, or in the horizontal direction if no other direction is specified. The weight W shall not exceed 23 kg. (50 lb.). The distance h through which the weight W may fall shall not

exceed 610 mm. (24.0 in.). All slack shall be removed from the cable that is attached to the starting control. The mower shall be secured so that the mower will not move when the starting force is applied.

(ii) *Procedure.* The mower shall be warmed up by being run at maximum operating speed for at least 6 minutes. It shall then be turned off and prepared for restart according to the manufac-



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turer's instructions. The weight  $W$  is then released so that it may fall through the distance  $h$ . The restart attempts shall be timed so that three attempts can be made between 30 seconds after shut-off and 4 minutes after shutoff. If the mower restarts on the first or second attempt, the subsequent attempt(s) need not be made.

(e) **Shut-off control.** All mowers shall be provided with a shut-off control, the actuation of which will stop the operation of the power source. This control shall require a manual operation before the power source can be restarted.

#### § 1205.6 Fuel ignition hazards.

(a) **Spark suppression.** Power lawn mowers that ignite a fuel by an electric spark are subject to the following requirements.

(1) **High tension cables**—(i) **Requirements.** (A) High tension (e.g., spark plug) cables, including the portion of the connector to the spark plug that is not covered by a boot shall be fully insulated.

(B) The connector shall be recessed in a non-conductive boot to a depth such that a spark will not jump from the connector to grounded metal during the test of paragraph (a) (1) (ii) of this section.

(ii) **Spark plug connector test.** Each spark plug cable shall be disconnected from its spark plug. The engine controls shall then be adjusted to the starting position and the engine cranked in the normal starting manner while holding each spark plug connector boot, in turn, first with the open end, then with the side, lightly against a grounded metal part of the mower.

(2) **Grounding switches.** No grounding switch shall be permitted in the high tension (secondary) part of the ignition system.

(b) **Control of overflowing fuel.** Power lawn mowers that use liquid fuels are subject to the following requirements.

(1) **Requirements.** When the mower is subjected to the spilled fuel control test of paragraph (b) (2) of this section,

(i) no Stoddard Solvent shall come in contact with the exhaust system, high tension cables, or non-insulated electrical components, and

(ii) no more than 1.0 ml. (0.033 fl. oz.) of Stoddard Solvent shall collect in any single pool in any of the following locations:

(A) On the engine.  
(B) Where it can be directly impinged on by the exhaust.

(C) Within 250 mm. (9.9 in.) of any part of the ignition system.

(2) **Spilled fuel control test.** (i) Clean and dry the exterior of the mower.

(ii) Place the mower on a level surface and completely fill the fuel tank and filler opening with Type I solvent as defined in ANSI/ASTM D 484-71 (R 1976), "Standard Specification for Hydrocarbon Dry Cleaning Solvents," Table 1 (Stoddard Solvent) of known specific gravity.

(iii) Weigh and record the dry weight of at least three circles of filter paper that are at least 11 cm. (4.33 in.) in diameter.

(iv) Overfill the fuel tank with 100 ml.  $\pm$  10 ml. (3.38 fl. oz.  $\pm$  0.33 fl. oz.) Stoddard Solvent within six seconds.

(v) Fold the previously weighed filter paper and insert enough of the paper into each accumulation of Stoddard Solvent that has collected on the mower to completely absorb the accumulation. The paper(s) used for each accumulation shall be kept separate from the paper(s) used for any other accumulations.

(vi) Weigh the filter paper and the absorbed solvent from each accumulation within 2 minutes. Deduct the weight of the dry filter paper in order to determine the weight of each accumulation of spilled solvent. From the specific gravity, calculate the volume of the spilled solvent in milliliters.

(c) **Fuel leaks.** There shall be no leakage from the fuel system of a mower during any reasonably foreseeable condition of use. For the purposes of this section only, tipping of the mower at angles greater than 30 degrees shall not be considered reasonably foreseeable.

(d) **Exhaust.** The engine's exhaust shall not be so directed or located as to directly heat any part of the fuel system during normal operation.

#### § 1205.7 Electrically-powered mowers.

(a) **Insulation of control surfaces and handles.** (1) Those parts of a electrically-powered lawn mower which are normally contacted by the operator during starting, mowing, and stopping shall be of, or covered with, an electrical insulating material. The insulating material shall have sufficient insulating qualities that the ohmmeter reading at all times during the insulation resistance test of paragraph (a) (2) of this section shall exceed 250,000 ohms.

(2) **Insulation Resistance Test.** (i) The handle shall be conditioned in a circulating-air oven for 7 hours at a temperature of  $73 \pm 3^\circ \text{C}$ . ( $158 \pm 5^\circ \text{F}$ ).

(ii) After conditioning, the handle shall be permitted to cool and shall then be reassembled on the mower and subjected to two impacts applied by drop-

ping a steel sphere 51 mm. (2.0 in.) in diameter and weighing 0.54 kg. (1.18 lb.) through a vertical distance of 130 cm. (51.2 in.). Impact points shall be on insulated areas of the handle where impact may occur in use.

(iii) A conductive solution consisting of approximately 1 percent (by weight) of table salt dissolved in tap water shall be placed in a container shaped so that as much as possible of the insulated portion of each control surface and handle can be submerged in the solution without submersion of any electrically-conductive part of the mower.

(iv) An ohmmeter which will read the resistance of the salt solution is then connected between the salt solution and the electrically-conductive part of the lawn mower to which the insulation under test is attached. As much as possible of the insulated part shall be dipped into the salt solution, taking care not to wet the conductive part of the mower. The ohmmeter reading shall be monitored until the insulation has soaked in the salt solution for at least 5 minutes and the reading has stabilized.

(b) **Movable handles.** Electrically-powered lawn mowers that have folding or pivoting handles shall be constructed so that any wire or cable that connects electrical components of the mower cannot be entrapped by the folding or pivoting action of the handle.

(c) **Plug blade shielding.** (1) **Requirement.** Except for the grounding blade of a three blade plug, the plug blades of an electrically-powered lawn mower shall be shielded so that, when subjected to the plug shielding test of paragraph (c) (2) of this section, the test probe will be prevented by the shielding from contacting the blades until the plug has been withdrawn from the extension cord gage of Fig. 8 a distance that is sufficient to separate both blades from the gage contacts.

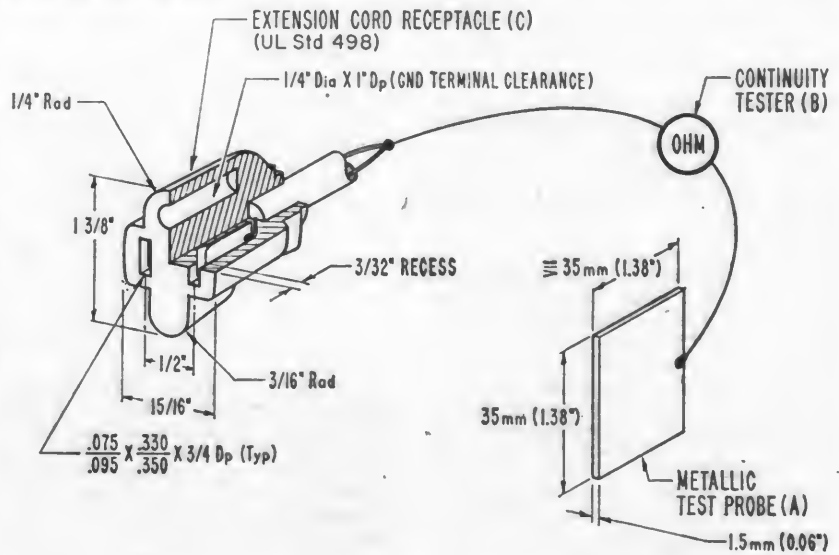


FIG 8—PLUG BLADE SHIELDING GAGE  
(Excluding Mower's Integral Plug Connector)

(2) *Plug shielding test.* (i) The following equipment is required for this test:

(A) An electrically-conductive (metallic) test probe that has a rectangular cross section of 1.5 mm. (0.059 in.) by 35 mm. (1.38 in.) and is at least 35 mm. (1.38 in.) long.

(B) A continuity tester (e.g., ohmmeter).

(C) An extension cord gage as shown in Fig. 8. The wire from the contacts is connected to one lead or terminal of the continuity tester and the test probe is connected to the other lead or terminal.

(ii) The blades of the mower's supply cord or integral connector shall be inserted into the gage to the fullest extent possible. The plug shall then be withdrawn from the gage the minimum distance required for the test probe to contact a plug blade when the probe is inserted between the gage and the plug body with an insertion force of not more than 18 newtons (4.1 lbs.). This procedure is repeated so that the probe contacts the other plug blade. If the plug blades are withdrawn sufficiently from the gage contacts when they are contacted by the probe, the continuity tester will not indicate continuity between the gage contacts and either plug blade.

(d) *Disconnect switch.* (1) An electrically-powered lawn mower shall have a switch that disconnects both sides of the power supply to the motor when in the "off" position.

(2) *Test.* One lead of a continuity tester shall be connected to a terminal on the mower side of the switch or to a terminal on the mower motor. The other lead shall be connected to one blade of the power cord. With the switch in the "on" position the meter shall indicate continuity, and with the switch in the "off" position, the meter shall indicate an open circuit. The test shall be repeated with the lead connected to the other plug blade.

§ 1205.8 Riding mower stability and shield requirements.

(a) *Static stability.* (1) *Requirement.* The upper wheels of a stationary riding mower shall not lift under the following conditions during the static stability test of paragraph (a) (2) of this section:

(i) On a slope inclined 30 degrees from the horizontal, the upper wheels shall not lift when the mower is facing uphill or when it is facing downhill.

(ii) On a slope inclined 20 degrees from the horizontal, the upper wheels shall not lift when the mower is facing left across the slope or when it is facing right across the slope.

(2) *Static Stability Test.* (i) *Conditions.* The following conditions shall apply to this test.

(A) The mower shall be able to pass the static stability test in every combination of track-width settings, tire sizes, blade heights, or seat heights provided for the mower by the manufacturer.

(B) Pneumatic tires shall be inflated to the cold pressures recommended by the mower manufacturer.

(C) Steerable wheels shall be held in the straight ahead position. The wheels shall be locked to prevent rotation about the axle.

(D) An equivalent test weight shall be secured on the seat. If the seat is adjustable, it shall be positioned in the most forward position when checking stability facing downhill and in the most rearward position when checking stability facing uphill.

(E) If a grass catcher is provided or sold by the mower manufacturer for use with the mower, the test shall be conducted both with and without the grass catcher mounted on the mower. When the mower is tested with the grass catcher in place, the grass catcher shall be uniformly filled with a material having a density of  $105 \pm 5$  kg. per cubic meter (6.55  $\pm$  0.30 lb. per cubic foot). The total fill weight shall equal the capacity of the catcher multiplied by the fill material density.

(F) If the mower manufacturer states that ballast should be used with a grass catcher that is provided or sold by the manufacturer for the mower, the static stability test with the grass catcher in place shall be performed with this ballast attached to the mower according to the manufacturer's instructions, both with the grass catcher and empty. No additional ballast shall be used.

(i) *Procedure.* The surface on which the static stability test is conducted shall have a static coefficient of friction with respect to the mower tires sufficient to prevent sliding of the mower at the test angles specified in paragraph (a) (1) of this section. The test angles may be produced by placing the mower on a surface that is inclined at the appropriate angle or that has a variable slope (e.g., a tilt table). Lifting of a wheel shall be deemed to have occurred when a strip of 20 gauge steel 50 mm. (2.0 in.) wide can be pulled from under the tire with a force of 9 newtons (2.0 lbs.) or less. This force shall be applied normal to the plane of the wheel.

(b) *Ballast.* If the mower manufacturer states that ballast should be used with a grass catcher that is provided or sold by the manufacturer for the mower, the manufacturer shall provide suitable ballast and instructions for its safe use with the grass catcher attachment.

(c) *Shields.* If located within 125 cm. (49.2 in.) of the seat reference point of a riding mower, any portion of the blade path and any moving mower part driven by the power source shall be shielded so that the foot probe of Fig. 3 may not enter the blade path or contact the part.

§ 1205.9 Riding mower steering requirements.

(a) *Steering control.* (1) Except as provided in paragraph (a) (2) of this section, the steering control shall move in a clockwise direction, or to the right, to turn a forward-traveling mower to the right, and in a counterclockwise direction, or to the left, to turn a forward-traveling mower to the left.

(2) If a mower is steered by dual hand-lever controls, the left control shall move forward relative to the right

control, or the right control shall move rearward relative to the left control, to turn a forward-traveling vehicle to the right, and the left control shall move in a rearward direction relative to the right control, or the right control shall move forward relative to the left control, to turn a forward-traveling vehicle to the left.

(3) Tiller bar steering is not permitted.

(b) *Structural integrity.* (1) *Requirement.* When subjected to the following steering structural integrity test, no component of the steering mechanism shall separate or crack nor shall it deform so as to change the manner in which the steering mechanism operated prior to the test.

(2) *Steering structural integrity test.*

(i) The mower shall be on a substantially level surface.

(ii) The mower's seat shall be occupied by a standard test operator or an equivalent test weight.

(iii) The test shall be performed with the steerable wheels restrained by blocks, clamps, or other suitable means, in each of three positions:

(A) In the full right-turn position and restrained to prevent movement in the left-turn direction.

(B) In the full left-turn position and restrained to prevent movement in the right-turn direction.

(C) In the straight ahead position and restrained to prevent movement to the right and to the left.

(iv) A force of 222 newtons (50 lb.) shall be applied to the steering mechanism in both steering directions in each of the three test positions in the following manner:

(A) If a steering wheel is provided, the force shall be applied tangent to the rim. If the wheel is a shape other than round, the force shall be applied at the point that produces the maximum torque around the steering wheel axis.

(B) If the steering control is other than a wheel, the force shall be applied at the point on the control and in the direction that will produce the maximum force on the steerable wheels.

§ 1205.10 Riding mower brakes.

(a) *Stopping distance.* (1) *Requirements.* A riding mower shall be equipped with a service braking system capable of performing the following functions:

(i) Under the test conditions of paragraph (a) (2) of this section, the service braking system shall be capable of stopping the mower from the maximum attainable speed in both the forward and backward directions of mower travel within the greater of the following distances:

(A) 500 mm. (20.0 in.) or

(B) The distance obtained from the formula  $S = 0.0147 V^2$

where S is the stopping distance in meters and V is the maximum attainable speed in the direction of travel being tested in kilometers per hour. (or,  $S = 0.125 V^2$ , where S is the stopping distance in feet and V is the speed in miles per hour.)

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(ii) The service braking system shall function independently of the position of transmission or clutch controls or engine operation. This requirement does not prohibit the braking control from simultaneously disengaging the clutch or shifting the transmission.

(iii) The service brake of a riding mower shall be capable of holding the mower stationary in both the forward and rearward directions for as long as a force of 222 newtons (49.9 lb.) is applied to the brake control when the mower is supported by a surface that is inclined at an angle of 17 degrees.

(2) *Stopping distance test.* (1) *Conditions.* The following conditions shall apply to this test:

(A) The test shall be conducted on a level surface  $\pm 1$  percent slope) that has a sliding coefficient of friction relative to the mower's tires of 0.8 or less.

(B) A standard test operator shall be seated on the mower, or an equivalent test weight shall be placed on the seat of the vehicle during the test.

(C) Pneumatic tires shall be inflated to the cold pressures recommended by the mower manufacturer.

(D) If a grass catcher is provided or sold by the mower manufacturer for use with the mower, the test shall be conducted solely with the filled grass catcher attachment mounted on the mower. The grass catcher shall be filled with a material having a density of  $105 \pm 5$  kg. per cubic meter ( $6.55 \pm 0.30$  lb. per cubic foot). The total fill weight shall equal the capacity of the catcher multiplied by the specified material density.

(E) If the manufacturer states that ballast is required when the grass catcher is used, ballast shall be attached to the mower according to the manufacturer's instructions. No other ballast shall be added.

(F) If separate pedals are provided for different braked wheels, the pedals shall be locked together for this test.

(G) The maximum force to be applied to a foot-operated service brake pedal during this test shall be 222 newtons (49.9 lb.).

(H) The braking shall be conducted with the motor operating. No shifting of the transmission is permitted during braking unless the shifting occurs automatically as a result of the braking process. When testing a riding mower with separate brake and traction-drive clutch or neutral return controls, the clutch shall be disengaged or the neutral return control actuated simultaneously with brake engagement.

(ii) *Procedure.* In both the forward and backward directions, the brakes shall be applied while the mower is being operated at the maximum attainable speed. For each direction, the velocity at brake application and the distance travelled between the initial brake application and stopping of the mower shall be measured.

(b) *Structural integrity.* Braking controls shall be able to withstand whichever of the following forces is applicable without separation or permanent deformation of any component.

(1) *Foot brakes.* A foot-operated braking control shall be able to withstand a

sustained force of 1670 newtons (375.5 lbs.) applied at the center of the foot pedal in the direction intended to operate the brakes.

(2) *Hand brakes.* A hand-operated braking control shall be able to withstand a sustained force of 710 newtons (159.7 lbs.). The force shall be applied at the center of the hand contact area in the direction intended to operate the brakes.

(3) If separate brake controls are provided for different wheels, each control shall be tested separately.

(c) *Parking brakes.* (1) *Requirement.* A riding mower shall have a parking brake which, without continued operator effort, can prevent any wheel from rolling more than 250 mm. (9.8 in.) in 15 minutes when subjected to the test of paragraph (c) (2) of this section.

(2) *Parking brake test.* (1) *Conditions.* (A) The conditions set forth in § 1205.8 (a) (2) (1) (A, B, E, and F) for the riding mower static stability test shall apply to this test.

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

(C) The test will be conducted both with the power source running and with the power source shut off. An equivalent test weight shall be placed in the seat. However, when the mower is tested with the power source shut off, if a mounting step is provided, the equivalent test weight shall instead be placed on the mounting step.

(D) The test shall be conducted on a surface inclined 17 degrees from the

horizontal that has a sufficient static coefficient of friction with respect to the tires so that the mower will not slide while supported on its wheels.

(E) If separate parking brake controls are provided for different wheels, the test shall be performed with the controls locked together.

(i) *Procedure.* (A) If the parking brake control is hand operated, it shall be set with a force of not more than 200 newtons (44.9 lb.).

(B) If the parking brake control is foot operated, it shall be set with a force of not more than 432 newtons (97 lb.).

(C) With the power source running, the mower will be placed on the surface inclined 17 degrees from the horizontal, so that it faces directly uphill for 15 minutes and faces directly downhill for 15 minutes. The test shall also be performed with the power source shut off.

(d) *Foot brake pedals.* (1) *Location.* The brake pedal shall be located so that the center of the pedal can be contacted by the leg probe of Fig. 9 under the following conditions:

(i) The brake pedal shall be held in the position to which it would be depressed by a force of 222 newtons (50.0 lbs.).

(ii) The seat, if adjustable, shall be in the most forward position.

(iii) Part A of the leg probe of Fig. 9 shall be placed on the seat with the rounded edge of part A down and towards the rear and with the rearmost face of part A against the seatback, where provided, or even with the rear of the seat, if a seatback is not provided.

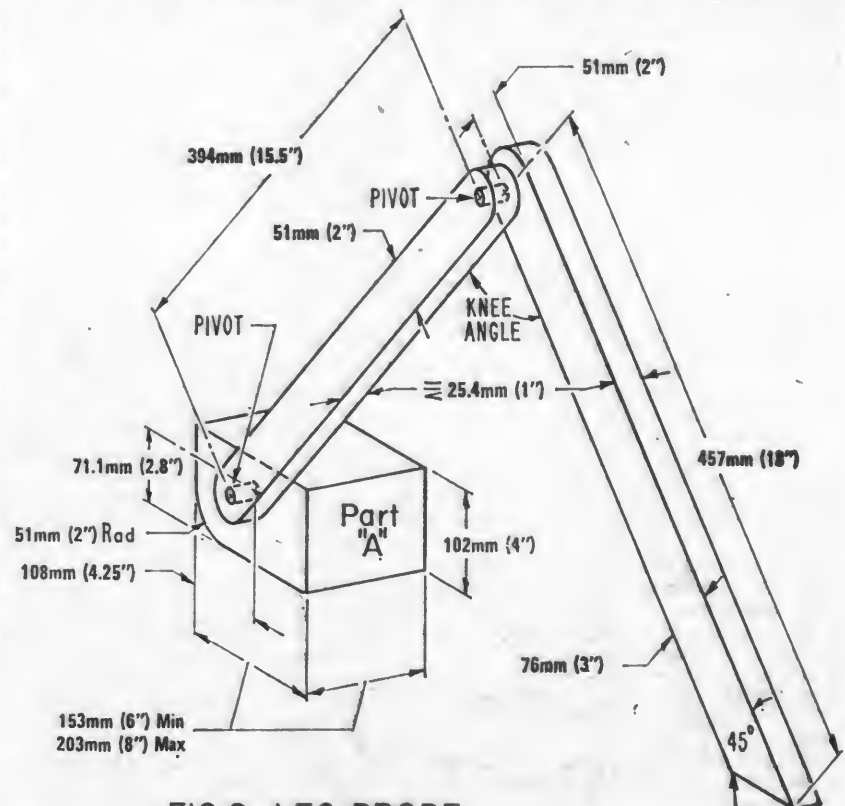


FIG 9-LEG PROBE



(2) Brake pedals shall have a slip resistant contact surface.

(3) A barrier shall be provided adjacent to the contact surface of a brake pedal to prevent the foot from sliding off a right-side control surface towards the right and from sliding off a left-side control surface toward the left.

§ 1205.11 Riding mower controls.

(a) *Blade control systems.* (1) *Blade control.* A riding mower shall have a blade control system that will perform the following functions:

(i) Prevent operation of the blade unless the control is actuated by the operator.

(ii) Require continuous contact with the operator in order for the blade to continue to be driven.

(iii) Upon release of the control by the operator, cause the blade to stop within a time that meets the requirements of paragraph (b) of this section.

(2) All riding mowers shall have, in addition to any blade control required by paragraph (a) (1) of this section, another control which must be manually actuated before a stopped blade can be restarted. A force of at least 110 newtons (24.8 lbs.) shall be required in order to actuate this second control.

(3) The blade of a riding mower shall be inoperative while the transmission or traction drive is positioned for reverse travel.

(4) Riding mowers shall have a control so that the blade may be inoperative while the transmission or traction drive is positioned for forward travel.

(b) *Blade stopping times.* After release of the blade control required by paragraph (a) (1) of this section or after the transmission or traction drive is positioned for reverse travel, the blade of a riding mower shall come to a complete stop within whichever of the following times is applicable, measured in accordance with § 1205.5(b) (2):

(1) For mowers manufactured after the overall effective date of the standard but before two years after the overall effective date of the standard, the blade shall stop within 6.0 seconds.

(2) For mowers manufactured on or after two years after the overall effective date of the standard, the blade shall stop within 3.0 seconds.

(c) *Engine controls.* (1) A riding mower shall have a means to prevent the engine from being started by its normal starting means unless all of the following conditions are met:

(i) The blade drive is disengaged.

(ii) The traction drive is disengaged or in neutral.

(2) All riding mowers shall be provided with a shutoff control, the actuation of which will stop the operation of the power source. This control shall require a manual operation before the power source can be restarted.

(d) *Traction controls.* (1) Riding mowers shall be provided with a traction drive control that will stop the power source or disconnect the traction drive if the operator leaves the operating position or otherwise releases the con-

trol without first disengaging the traction drive.

(2) The transmission or traction drive control shall have a neutral position between any control position for forward travel and any control position for reverse travel.

(3) The transmission or traction drive control shall have a lockout or other means which will prevent motion of the control from a forward to a reverse position or from a reverse to a forward position when a force of 222 newtons (50 lbs.), is applied to the center of the operator contact area of the control at

any angle within 30 degrees of either side of the direction of motion that will cause the control to enter the neutral position.

§ 1205.12 Warning labels.

(a) Power lawn mowers shall be labeled on the blade housing(s) or, in the absence of a blade housing, on other blade shielding or on an adjacent supporting structure or assembly, with the warning label shown in Fig. 10. The label shall be at least 82.5 mm. (3.25 in.) high and 100 mm. (4 in.) wide, and the lettering and symbol shall retain the same size relation to each other and to the label as shown in Fig. 10.



FIGURE 10

(b) Rotary mowers shall have one label located as close as possible to any discharge opening. Rotary mowers shall be labeled on both sides of the blade housing with at least one label visible to a standard test operator standing in the operating position.

(c) Walk-behind non-rotary mowers and riding mowers with front-mounted non-rotary mowing units shall be labeled as close to the center of the cutting width of the blade as possible, with the label legible from in front of the mowing unit. Riding mowers with rear-mounted non-rotary mowing units shall be labeled as close to the center of the cutting width of the blade as possible, with the label visible from behind the mowing unit. Riding mowers with non-rotary mowing units mounted under the vehicle shall be labeled on both sides of the mowing unit with the label visible from each side.

§ 1205.13 Prohibited stockpiling.

(a) *Stockpiling.* "Stockpiling" means manufacturing or importing a product which is the subject of a consumer product safety rule between the date of issuance of the rule and its effective date at a rate that is significantly greater than the rate at which such product was

produced or imported during a base period prescribed by the Consumer Product Safety Commission.

(b) *Prohibited acts.* (1) Stockpiling of power lawn mowers that do not comply with this Subpart A of Part 1205 at a rate that exceeds 20 percent of the rate at which the product was produced or imported during the base period described in paragraph (c) of this section is prohibited.

(2) In §§ 1205.5(b) (1) (ii) and 1205.11(b) (2), a more stringent requirement becomes effective two years after the effective date of the remainder of Subpart A of Part 1205. Stockpiling mowers that do not comply with these more stringent requirements between the date of promulgation of Part 1205 and the effective date of §§ 1205.5(b) (1) (ii) and 1205.11(b) (2) at a rate that exceeds 20 percent of the rate at which the product was produced or imported during the base period prescribed in paragraph (c) of this section is prohibited.

(c) *Base period.* The base period for power lawn mowers is, at the option of each manufacturer or importer, any period of 365 consecutive days beginning on or after September 1, 1971, and ending on or before August 31, 1976.

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## § 1205.14 Findings.

(a) (The Commission's findings concerning the topics outlined in the OTHER CONSIDERATIONS section of the preamble to this proposal will be located here when the final rule is promulgated.)

Interested persons are invited to submit written data, views, or arguments regarding any aspect of the proposed standard on or before June 6, 1977. Comments submitted after this date will be considered to the extent practicable. Commenters are requested to cite the specific sections of Part 1205 being commented upon and to identify the specific portions of other documents to which they refer.

The Commission is interested in receiving comment on the technical aspects of the standard as well as comments on the need of the public for the consumer products subject to the standard and the probable effects of the standard upon the utility, cost, or availability of the products to meet the need. In this connection, the Commission's draft economic analysis is available for review in the Office of the Secretary. Comments should be ac-

companied, to the extent possible, by supporting data or documentation. Requests for confidentiality of documentation will be handled in accordance with the Freedom of Information Act as amended (5 U.S.C. 552), the Commission's proposed interim regulations under that Act (39 FR 30298), and the provisions of section 6(a)(2) of the CPSA (15 U.S.C. 2055(a)(2)).

Written submissions and any accompanying data or material should be submitted, preferably in five copies, addressed to the Secretary, Consumer Product Safety Commission, Washington, D.C. 20207. Comments may be supported by a memorandum or brief.

Interested persons will be afforded an opportunity to make an oral presentation of data, views, or arguments on any aspect of the proposed standard on June 13, 1977, at 10 a.m. in the 3rd floor hearing room, 1111 18th Street NW., Washington, D.C. 20207. The *Procedural Regulations for Oral Presentations Concerning Proposed Consumer Product Safety Rules* (16 CFR Part 1109) shall govern this proceeding.

All persons wishing to make an oral presentation should notify Richard Danca of the Office of the Secretary, 202-634-7700, no later than the close of business May 31, 1977, for scheduling purposes. A summary or outline of each oral presentation should be filed with the Office of the Secretary at least 48 hours before the oral presentation.

Any comments that are received and all other material which the Commission has that is relevant to this proceeding may be seen in, or copies obtained from, the Office of the Secretary, 3rd floor, 1111 18th Street, NW., Washington, D.C. 20207.

Dated: April 28, 1977.

SADYE E. DUNN,  
Secretary, Consumer Product  
Safety Commission.

NOTE.—Incorporation by reference provisions approved by the Director of the Federal Register, May 2, 1977, and copies of the incorporated material are on file in the Federal Register Library.

[FR Doc.77-12721 Filed 5-4-77;8:45 am]