PART 1204—SAFETY STANDARD FOR OMNIDIRECTIONAL CITIZENS BAND BASE STATION ANTENNAS

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SOURCE: 47 FR 36201, Aug. 19, 1982, unless otherwise noted.

Subpart A—The Standard

§ 1204.1 Scope of the standard.

(a) *General.* This subpart A of part 1204 is a consumer product safety standard which prescribes safety requirements for Citizens Band omnidirectional base station antennas. The standard is intended to reduce the risk of electrocution or serious injuries occurring if the antenna contacts an electric power line while the antenna is being put up or taken down. One way that this can be accomplished is to insulate the antenna so that if it contacts the power line, there is less of a likelihood that a harmful electric current will be transmitted from the power line through the antenna and mast and ultimately through a person holding the antenna mast. Another possible way to provide this protection is to incorporate an insulating barrier between the antenna and the mast or other supporting structure, so that a harmful electric current will not pass from the antenna to a person in contact with the mast. (If this alternative were chosen, the feed cable from the antenna would have to be insulated or otherwise protected so that it would not provide an electrical path to the mast or a person touching the cable.)

(b) *Description of the standard*—(1) *Performance tests.* The standard describes two performance tests to determine if the means chosen by the manufacturer to protect against the shock hazard will provide adequate protection.

(i) First, there is an Insulating Material Effectiveness Test (§ 1204.4(d) of this subpart) in which a high voltage electrode or test rod is brought into contact with the antenna at any point within the protection zone established by § 1204.2(k) of this subpart to ensure that the insulation can withstand the voltage for 5 minutes without transmitting more than 5 milliamperes (mA) root-mean-square (rms) of electric current.

(ii) The other test is an Antenna-Mast System Test (§ 1204.4(e) of this subpart) which is intended to determine whether the means provided to protect against electrocution will withstand the stress imposed when an antenna-mast system falls onto a power line. This test consists of mounting the antenna to be tested on a specified mast and allowing the assembled antenna and mast to fall onto a power line of 14,500 volts rms phase to ground.

(2) *Recommended materials.* (i) Since a substantial portion of the accidents addressed by this standard occur when the antenna is being taken down after it has been installed in an outdoor environment for a number of years, the materials selected to provide protection from shock should be weather resistant.

(ii) Although other materials may also be suitable, materials meeting the following criteria should be reasonably weather resistant:

(A) Material composition includes an ultraviolet stabilizer or screen.

(B) Heat resistance of 212 °F (100 °C) without loss of elasticity (ANSI/ASTM D 746–79).

(C) Moisture absorption of not more than 0.2 percent (ANSI/ASTM D 570–77).

(D) For heat shrinkable sleeving, temperature flexibility to −40 °F (−40 °C) with no cracks (Mil Spec. MIL-I-23053C, 20 May 1976).

(3) *Warning:* Section 1204.5 of this subpart requires a statement in the instructions that the standard will not protect in every instance against electrocution caused by contact with power lines. This is because the standard is intended to provide protection for power line voltages of up to 14,500 volts. Some power lines carry more voltage than this. In addition, not all portions of the antenna are required to be insulated, and the antenna's mast is not required to be insulated. If the power line were to contact one of these uninsulated areas, an electrocution could occur. Furthermore, when the antenna was manufactured it may not in fact have complied with the standard, or the insulation may have deteriorated or been damaged since the antenna was manufactured. In addition, the insulation cannot withstand high voltages indefinitely, and, after a period of time, the current may penetrate the insulation. Therefore, even if a harmful amount of current is not transmitted immediately, the user should not attempt to remove an antenna that falls into electric power lines, since the insulation could break down while the antenna is being removed. For these reasons, persons handling these antennas should ensure that the antennas are kept away from power lines so that the antenna cannot contact the line while being transported, installed, or removed, even if the antenna is dropped. The Commission recommends that antennas be located at least twice the combined length of the antenna and mast from the nearest power line.

(c) *Scope.* (1) Except as noted below, the standard applies to all omnidirectional CB base station antennas that are consumer products and are manufactured or imported on or after May 24, 1983.

(2) The Commission may extend the effective date of the standard for as long as an additional 90 days for any firm which has 750 employees or fewer and, is not a subsidiary or division of a firm having more than 750 employees, and which manufactures or imports products subject to the standard, upon written application, addressed to the Associate Executive Director for Compliance and Administrative litigation, Consumer Product Safety Commission, Washington, D.C. 20207, received not later than January 17, 1983. An application for extension of the effective date shall:

(i) Identify the requesting firm as a manufacturer or importer of products subject to the standard.

(ii) State the total number of employees of the firm, including all employees of any subsidiary or division, and all employees of any firm of which the requesting firm is a subsidiary or division.

(iii) Request extension of the effective date to a specific date not later than May 27, 1983.

(iv) Explain why the requested extension of the effective date is needed.

(v) Describe all activities undertaken by the requesting firm to achieve compliance with the requirements of the standard.

(vi) State that the requesting firm will market complying products after the extended effective date.

(3) The Associate Executive Director for Compliance and Administrative Litigation will evaluate each request for extension of the effective date. The following criteria will be used in determining whether to grant an application for extension of the effective date:

(i) Does the application demonstrate that the requesting firm cannot meet the general effective date,

(ii) Does the application demonstrate that the requesting firm has made a good faith effort to achieve compliance with the requirements of the standard by the general effective date.

(iii) Does the application demonstrate that the firm is likely to produce or market complying products if the requested extension is granted.

(4) The Associate Executive Director will advise each requesting firm in writing if the requested extension is granted or denied. If the Associate Executive Director for Compliance and Administrative Litigation denies a request for extension of the effective

date, the firm may request the Commission to reconsider the denial.

(5) Section 3(a)(1) of the Consumer Product Safety Act (CPSA, 15 U.S.C. 2052(a)(1) defines the term *consumer product* as an ''article, or component part thereof, produced or distributed (i) for sale to a consumer for use in or around a permanent or temporary household or residence, a school, in recreation, or otherwise, or (ii) for the personal use, consumption or enjoyment of a consumer in or around a permanent or temporary household or residence, a school, in recreation, or otherwise.'' The term does not include products that are not customarily produced or distributed for sale to, or for the use or consumption by, or enjoyment of, a consumer. A limited exception from coverage of the standard is provided by section 18(a) of the CPSA, 15 U.S.C. 2067, for certain products intended for export and meeting the requirements of section 18(b) of the CPSA.

(d) *Prohibited acts.* It is unlawful to manufacture for sale, offer for sale, distribute in commerce, or import into the United States any product subject to this standard that does not conform with the standard.

(Sec. 9(h), Pub. L. 92–573, 86 Stat. 1207, as amended, Pub. L. 95–319, 92 Stat. 386, Pub. L. 95–631, 92 Stat. 3742, Pub. L. 96–373, 94 Stat. 1366, Pub. L. 97–35, 95 Stat. 703, 15 U.S.C. 2058(h))

[47 FR 36201, Aug. 19, 1982, as amended at 48 FR 29683, June 28, 1983]

§ 1204.2 Definitions.

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

(a) *Antenna system* means a device for radiating and/or receiving radio waves. Where they are present, the antenna system includes active elements, ground plane elements, matching networks, element-connecting hardware, mounting hardware, feed cable, and other functional or non-functional elements.

(b) *Antenna-mast system* means the completed assembly of the antenna system and the mast.

(c) *Base station* means a transmitter and/or receiver in a fixed location.

(d) *Citizens Band (CB)* means the frequency band allocated for citizen's band radio service.

(e) *Current* means the total rate at which electrical charge is transported through the antenna-mast system in response to the applied test voltage, including both capacitive and resistive components.

(f) *Electrical breakdown* means a failure of the insulating material used with the antenna, such that in the Antenna-Mast System Test of § 1204.4(e) of this subpart, the current flowing through the antenna-mast system is sufficient to actuate the automatic internal cut-off of the high voltage source or exceeds the current that can be measured by the current monitoring device.

(g) *Feed cable* means the electrical cable that connects the antenna system to the transmitter and/or receiver.

(h) *Field joint* means any joint between antenna system sections or parts, or between the antenna system and the mast, that is not assembled by the antenna manufacturer.

(i) *Insulating material and insulation* mean a material that has a very small electric conductivity.

(j) *Omnidirectional antenna* means an antenna system designed or intended primarily to exhibit approximately equal signal transmission or reception capabilities in all horizontal directions simultaneously.

(k) *Protection zone* means that portion of an antenna system which can contact the test rod during the Insulating Material Effectiveness Test or can contact the power line during the Antenna-Mast System Test. This zone consists of those elements of the antenna system extending from the uppermost tip of an upright antenna downward to a point that is 12.0 inches (30.5 cm) above the top of the mast when the antenna system is mounted according to the manufacturer's instructions.

(l) *Voltage, phase to ground,* means that voltage which exists between a single phase of a three phase power system and ground.

§ 1204.3 Requirements.

All omnidirectional CB base station antennas are required to comply with the following requirements.

(a) *Field joints.* Parts or accessories intended to protect a field joint so that it will meet any other requirement of this standard, and that must be put into place by the person assembling the antenna system, shall be integral with, or not readily removable from, at least one of the antenna sections or parts involved in the joint or shall be necessary in order to complete the joint.

(b) *Feed cable.* When compliance with the requirements of this standard depends on the insulating or other properties of the feed cable, at least 50 feet of the cable shall be supplied by the manufacturer with the antenna system.

(c) *Electrical protection.* Antenna systems shall be manufactured so that if all points within the protection zone of an antenna system were tested by the Insulating Material Effectiveness Test of §1204.4(d) of this subpart, and the Antenna-Mast System Test of §1204.4(e) of this subpart, the current measured by the current monitoring device connected to the mast would be no greater than 5.0 milliamperes rms and no electrical breakdown of the antenna system's insulating material would occur.

§ 1204.4 Electric shock protection tests.

(a) *Safety precautions.* For tests involving high voltage, the following recommended minimum safety precautions should be followed:

(1) At least one test operator and one test observer (preferably one with cardiopulmonary resusitation (CPR) training) should be present at every test.

(2) The test area (outdoors or indoors) should secure against accidental intrusion by other persons during tests.

(3) Test areas located indoors should be ventilated to avoid buildup of potentially hazardous concentrations of gaseous byproducts which may result from the tests.

(4) Fire extinguishers should be easily accessible in case materials on the test specimen ignite.

(5) ''High Voltage Test'' warning devices should be activated before start of a test.

(6) Emergency phone numbers should be posted.

(b) *Test conditions*—(1) *Specimens.* All specimens shall be tested as supplied by the manufacturer, following assembly in accordance with the manufacturer's instructions except as provided in paragraph (e)(2) of this section.

(2) *Temperature.* Ambient temperature shall be in the range from 32 °F (0 °C) to 104 °F (40 °C)

(3) *Relative humidity.* Ambient relative humidity shall be in the range of from 10 to 90 percent.

(4) *Voltage.* Voltage, phase to ground, of the power line or test probe shall be 14.5 kilovolts rms, 60 hertz.

(5) *Conditioning.* Prior to testing, all specimens shall be exposed for at least 4 hours to the ambient test area environment.

(c) *Test equipment.* (1) High voltage source capable of delivering at least 15 mA rms at 14.5 kV rms, 60 Hz. The source should have an automatic internal cut-off actuated by a preset current level.

(2) Instrumentation to measure the rms voltage applied to the antenna system.

(3) Current monitoring device to indicate hazardous components of the total rms current flowing to ground through the mast. One configuration of the circuitry for the current monitoring device (shown in Figure 1) consists of three parallel branches as follows. One branch consists of a resistor in series with a true-rms milliammeter with a maximum error of 5% of the reading in the frequency range of 50Hz to 10MHz (the total of the resistor and the internal resistance of the milliammeter is to be 1000 ohms). A parallel branch consists of a 1000 ohm resistor in series with a 0.08 microfarad capacitor. Another parallel branch should consist of a spark gap rated at 50 to 100 volts as a meter protection device. A different current monitoring device may be used if the measured value of the rms current corresponds to that indicated by the configuration described above.

(4) For the Insulating Material Effectiveness Test:

(i) High voltage electrode or test rod consisting of ¼ in. (6.4 mm) diameter aluminum rod.

(ii) Support jig, structure, or hanger made of insulating material which is capable of holding antenna system test specimens electrically isolated from all surrounding structures or ground.

(5) For the Antenna-Mast System Test, a high voltage test facility, as shown in Figures 2 and 3, which includes a single power line spanning between two poles 95 to 105 feet (29 to 32 meters) apart, a tensioning device to adjust the cable sag to from 9 to 12 inches (23 to 30 cm), and a pivot fixture (Figure 2), for holding the base of an antenna-mast system, which can be moved horizontally to adjust the distance to the cable. The cable consists of ¼ in. diameter 7 by 19 galvanized steel aircraft cable. The low point of the cable shall be between 28 and 29 feet (8.5 to 8.8 meters) above a horizontal plane through the pivot axis of the pivot fixture.

(d) *Insulating Material Effectiveness Test procedure.* (1) A short piece of typical tubular mast shall be attached to the antenna system to be tested, in accordance with mounting instructions provided with the antenna system by the manufacturer.

(2) If a feed cable is provided with the antenna system, it shall be used in the test. If no cable is provided with the antenna system, a RG–213 cable shall be used in the test (Mil Spec. MIL-C-17/75C, 15 March 1977). In either case, the cable shall be connected to the antenna system, installed parallel to the mast, and secured by taping or similar means at one point on the mast. The side of the bottom end of the cable also shall be secured to the mast.

(3) With the antenna system properly supported and isolated from ground and with the current monitoring device connected to the mast, the test rod shall be connected to the high voltage source and brought into contact with the antenna system at any point within the protection zone (see §1204.2(k) of this subpart). For each contact point, the voltage shall be increased from 0 to 14.5 kV at a rate of at least 2 kV per second and held at 14.5 kV for 5.0 minutes. Current shall be monitored and the maximum recorded.

(e) *Antenna-Mast System Test procedure.* (1) The antenna system to be tested shall be attached to a mast in accordance with mounting instructions provided by the manufacturer. The mast shall be assembled of commercially available 1¼ inch outside diameter 16 gauge tubular steel sections, commonly sold for antenna-mast installations in 5 and 10 feet lengths. The slip joints between the mast sections shall be secured (as with screws) to prohibit rotational or longitudinal movement at the joint. The length of the mast shall be such that when it is mounted in the pivot fixture of the high voltage test facility, the distance from the pivot to the uppermost point on the antenna system is 41.75 to 42.25 feet (12.7 to 12.9 meters).

(2) If a feed cable is provided with the antenna system, it shall be used in the test. If no cable is provided with the antenna system, a RG–213 feed cable shall be used in the test for specification of an RG–213 cable see (Mil. Spec. MIL-C-17/75C, 15 March 1977). In either case, the cable shall be connected to the antenna system, installed parallel to the mast, and secured by taping or similar means every two feet along the length of the mast. The side of the bottom end of the cable also shall be secured to the mast.

(3) The antenna-mast system shall be mounted in the pivot fixture. The pivot fixture shall be adjusted so that the point of impact between the antenna and the power line takes place at any desired point within the antenna's protection zone. The antenna-mast system shall then be erected to a position of up to 5° from the vertical, leaning toward the simulated power line (see Figure 4). The antenna-mast system shall then be released and allowed to fall against the power line. The test may be performed with different test positions such that the antenna system flexes after impact and slides off the power line and or so that it remains in contact with the power line for 5.0 minutes. Current flow from the antenna-mast system to ground shall be monitored and recorded for each test.

(f) *Interpretation of Results.* An antenna shall pass the Insulating Material Effectiveness Test or the Antenna-Mast System Test if no electrical

breakdown occurs and if no current reading exceeds 5 mA rms.

§ 1204.5 Manufacturer's instructions.

(a) For all antennas covered under this part 1204, the following statement shall be included in the manufacturer's instructions, in addition to the material required by 16 CFR 1402.4(a)(1)(ii):

Under some conditions, this antenna may not prevent electrocution. Users should keep antenna away from any overhead wires. If antenna contacts a power line, any initial protection could fail at any time. IF ANTENNA NEARS ANY OVERHEAD WIRES, IMMEDIATELY LET GO, STAY AWAY, AND CALL UTILITY COMPANY.

(b) This warning statement shall be in a separate paragraph immediately following the warning statement required by 16 CFR 1402.4(a)(1)(ii)(A).

(c) This warning statement shall be legible and conspicuous and shall be in type that is at least as large as the largest type used on the remainder of the page, with the exception of the logo and any identification of the manufacturer, brand, model, or similar designations, and that is preferably no smaller than 10 point type.

§ 1204.6 Findings.

As required by section 9 (b) and (c) of the Consumer Product Safety Act, 15 U.S.C. 2058 (b) and (c), the Commission makes the following findings:

(a) *The degree and nature of the risk of injury the rule is designed to reduce.* (1) The rule addresses the risk of injury or death caused by electric shock occuring when the antenna comes into contact with electrical power lines while the antenna is being put up or taken down.

(2) About 175 fatalities were estimated to be associated with omnidirectional CB antennas in 1976. The estimated number of fatalities declined to about 125 in 1977 and to about 55 in 1978. Since then, the number of fatalities appears to have leveled off at about 45–50 each year. In addition to the 45–50 deaths, it is estimated that a somewhat greater number of injuries occur annually and that about half of them are serious enough to require surgery, amputation, skin grafts, etc. It is common for multiple deaths or injuries to occur in a single accident.

(3) The Commission's staff has estimated that since 1979 about 20 percent of the accidents involved antennas less than a year old, resulting in about 8 deaths in 1980.

(4) Since a substantial portion of the accidents associated with these antennas occur when the antenna is being taken down after it has been installed in an outdoor environment for a number of years, the standard recommends that materials selected to provide protection from shock be weather resistant.

(5) The standard specifies that protection shall be provided against voltages of 14,500 volts phase-to-ground. Voltages of this level or less are involved in 98 percent of the accidents and 95 percent of the total circuit mileage of distribution circuits.

(b) *The approximate number of consumer products, or types or classes thereof, subject to the rule.* (1) The standard applies to omnidirectional CB base station antennas. The Commission estimates that there were approximately 5 million omnidirectional base station antennas in use in 1981, and at that time as many as 75,000 of these antennas were expected to be sold each year for the next several years.

(2) [Reserved]

(c)(1) *The need of the public for the consumer products subject to the rule.* Omnidirectional CB base station antennas are used in non-mobile applications to obtain essentially uniform receiving and transmitting capabilities in all directions simultaneously. Although directional antennas can obtain greater reception and transmitting capabilities in one or more directions than can omnidirectionals, directionals are generally more expensive and must be oriented so that they point in the desired direction. Therefore, omnidirectional antennas are preferred by many base station operators, and they can also be used in conjunction with a directional antenna to locate another station to which the directional antenna can then be oriented.

(2) CB stations are used by individuals as a communications device for both practical and personal enjoyment purposes. Some operators volunteer to monitor the commonly used and/or emergency channels for distress calls

and summon aid where appropriate, relay messages, and aid local authorities and motorists in monitoring traffic conditions and accidents.

(3) Although operators can fabricate their own antennas, and antennas made for other purposes can be adapted for CB use, for most operators there is no adequate substitute for the commercial CB base station antennas subject to this rule.

(d) *The probable effect of the rule upon the utility, cost, and availability of the product*—(1) *Utility*. Tests performed for the Commission have shown that an external layer of insulation that will enable the antenna to comply with this standard can be provided that will have no significant effect on the performance of the antenna that cannot be compensated for by minor changes in the antenna. It is also likely that an insulated antenna's useful life would be somewhat longer than that of an uninsulated antenna. To the extent that manufacturers minimize the number of antenna elements in the protection zone, antennas should become less complex and bulky, and installation may also be eased. This may tend to make installation and removal of the antenna somewhat safer as well. If the isolation technique were used to comply with the standard, there should be no effect on the performance of the antenna.

(2) *Cost*. For the simpler designs of omnidirectional CB base station antennas, the manufacturers' production costs will be increased by approximately 20 percent, or $4 per antenna. For a few models, the production cost increase could be as much as 50 percent. Some models of antennas for which cost increases could be expected to be substantially greater will likely be discontinued. Some manufacturers already make antennas that either comply with the standard or can be made to do so with changes that involve no significant cost increases. The average rise in retail prices due to the standard is expected to be from 20 percent, or about $10 per antenna.

(3) *Availability*. The 30 or more different models of omnidirectional CB base station antennas available to consumers in 1981 are expected to be reduced in number substantially, perhaps by as much as half, after product line changes are made to meet the standard. The difference among some of the models likely to be discontinued are small (often relating only to primarily cosmetic features that provide a certain degree of product differentiation but do not significantly affect performance). Changes in product lines may be discernible to some consumers, however, since different brands and models of antennas will tend to look more alike (i.e., without upper radials, ''hats'' or other physical appendages previously incorporated). The availability of replacement components for older antennas may also be restricted somewhat if new, complying components are not compatible with some older models. Production of complying antennas is expected to be sufficient to satisfy demand; no overall ''shortage'' of antennas is anticipated as a result of the standard. Sales will, instead, shift from relatively low levels for each of many models to relatively higher levels for fewer models.

(e) *Means of achieving the objective of the order while minimizing adverse effects on competition or disruption or dislocation of manufacturing and other commercial practices consistent with the public health and safety*. (1) The standard may have significant adverse effects on competition among antenna producers. The additional costs associated with the standard, coupled with the recent history of decreasing sales, may cause a number of manufacturers, including one or two of the major producers, to abandon production of omnidirectional CB base station antennas. The standard is likely to impact most heavily on smaller manufacturers, which may have smaller and fewer capital sources from which to draw funds for product design and production changes and for product testing.

(2) Concentration of sales among the two largest manufacturers will probably increase as a result of the standard. However, the shrinking size of the market itself may prompt some major firms to drop this product line. Companies currently making antennas that substantially comply with the standard will probably gain a significant short-run competitive advantage over other

producers whose products do not already comply with the standard's basic provisions.

(3) Compliance with the standard may be relatively more burdensome for the smaller firms in the producing industry. Several small firms which entered the market in the early- and mid-1970's have already left the market due to the overall decrease in demand for the product. Those that remain account for less than 10 percent of annual unit shipments. None of these small firms is expected to go out of business as a result of issuance of the standard because most also produce directional CB and other base and mobile communications antennas and equipment. However, the Commission anticipates that most of these small firms will probably discontinue omnidirectional CB base station antenna production, at least temporarily, until a supplier of complying components is found, or until a decision can be made about long-term prospects.

(4) In order to minimize the adverse effects on competition and manufacturing and other commercial practices, the standard is a performance standard defined in terms of the factors the Commission determined to be significant for the protection of consumers. Thus, manufacturers have a maximum degree of flexibility in how to meet the standard, since the standard does not specify how the protection performance is to be obtained.

(5) The Commission also considered alternative technical approaches to reducing or eliminating unreasonable risks of injury associated with omnidirectional CB base station antennas, including incorporation of provisions in the standard which would allow the antenna to meet its requirements by grounding. The Commission rejected this approach because of the absence of any practical means for a consumer to ensure that the ground system will be adequate to dissipate the large amounts of power involved in a powerline contact accident. Additionally, the Commission considered the possibility that the standard might require CB base station antennas to incorporate a device to sense the electromagnetic field of a powerline. The Commission rejected this alternative because of the cost involved in such an approach, and because consumers could install an antenna even though the presence of a powerline is indicated.

(6) The Commission considered making the provisions of the standard less stringent and eliminating requirements applicable to the antenna's feed cable, in order to lessen the adverse impact of the standard on competition and manufacturing practices. However, it was determined that such changes to the standard would reduce the effectiveness of the standard and thus were not consistent with the public health and safety. Furthermore, these changes would not significantly reduce the adverse effects on competition and manufacturing practices. The elimination of requirements applicable to the feed cable would, with known technology, result in almost completely negating the benefits of the standard and is thus not consistent with the public health and safety.

(7) The Commission also considered the possibility of issuing the requirements of the standard as a voluntary test method rather than as a mandatory standard. The Commission estimated that if the provisions of the standard were issued as a voluntary test method, the total cost of such a voluntary test method to consumers during the first year after issuance would be about 30 percent of the total cost to consumers expected to result from promulgation of a mandatory standard. However, the Commission estimated that a voluntary test method would prevent only about 25 percent of the deaths and injuries which may be avoided by issuance of a mandatory standard. The Commission declined to issue the provisions of the standard as a voluntary test method because it concluded that such an approach would not only prevent fewer deaths and injuries each year than a mandatory standard, but would also have a less favorable ratio of benefits to costs than a mandatory standard.

(8) The Commission also considered the possibility of undertaking a joint effort with a trade association to inform all users of CB antennas of the dangers which can result from contact with overhead powerlines as an alternative to issuance of a mandatory

standard. The Commission observed that this alternative would have a relatively small economic impact on the industry. The Commission also observed that extensive efforts to promote public awareness of the dangers of contacting overhead powerlines have been conducted in the past by the Commission, antenna manufacturers, and utility companies, and that electrocutions and serious injuries continue to occur during installation and removal of CB base station antennas. For this reason, the Commission concluded that a public information campaign would prevent fewer deaths and injuries than issuance of a mandatory standard, and rejected such a campaign as an alternative to issuance of the standard.

(f) *The rule, including its effective date, is reasonably necessary to eliminate or reduce an unreasonable risk of injury associated with the product.* (1) The provisions of the standard constitute a related system of performance parameters which are needed as a group to ensure that the performance of new antennas will provide the degree of safety which the Commission has determined is reasonably necessary. Minor changes in the value of each parameter would not significantly reduce the costs of the standard, although in some cases they could substantially reduce the standard's effectiveness.

(2) The Commission estimates that increased retail prices due to the standard will cost consumers up to about $750,000 per year. The Commission also estimates that the standard will prevent approximately 8 deaths and 8 or more injuries during the first year the standard is in effect. Thus, if the standard saves 8 lives per year, the cost of the standard will be about $94,000 for each life saved.[1]

(3) As to the benefits from reduced injuries, the Commission estimates that, if 8 injuries are prevented during the first year the standard is in effect, the actual costs saved by the accidents prevented by the standard will amount to up to $21,000 to $37,000, exclusive of pain, suffering, or disability. If a monetary factor for these less quantifiable components is included, annual injury reduction benefits could be about $288,000 to $1,680,000.

(4) The effective date of the standard was selected after balancing the increased costs to manufacturers and consumers that are associated with shorter effective dates against the benefits to the public that would be caused by having the effective date as soon as possible.

(5) The requirement for the cautionary statement in the instructions for the antenna is intended to ensure the effectiveness of the standard by discouraging any relaxation of present safety practices involving staying away from powerlines. Since instructions for this product are already required by 16 CFR part 1402, the additional statement should have little or no adverse economic impact.

(6) After considering the costs and benefits associated with the standard, the Commission concludes that the standard, including its effective date, is reasonably necessary to eliminate or reduce an unreasonable risk of electric shock injury associated with omnidirectional CB base station antennas and that promulgation of the rule is in the public interest.

Subpart B—Certification

§ 1204.11 General.

Section 14(a) of the Consumer Product Safety Act (''the act''), 15 U.S.C. 2063(a), requires each manufacturer, private labeler, or importer of a product which is subject to a Consumer Product Safety Standard and which is distributed in commerce to issue a certificate of compliance with the applicable standard and to base that certificate upon a test of each item or upon

[1] The Commission believes that, in the area of consumer product safety, it is not generally necessary or appropriate to assign a specific monetary value to human life. However, several studies on the costs of injuries and deaths have been conducted in recent years. Value-of-life estimates based on discounted future earnings and the willingness-to-pay approach range from about $200,000 to about $3 million. The estimated costs of the CB antenna standard per life saved fall below or within the range suggested by these value-of-life estimating methodologies.

a reasonable testing program. The purpose of this subpart B of part 1204 is to establish requirements that manufacturers and importers must follow to certify that their products comply with the Safety Standard for Omnidirectional CB base Station Antennas (16 CFR part 1204, subpart A). Private labelers of CB antennas subject to the standard need not issue a certificate of compliance if they have been furnished a certificate issued by the manufacturer or importer of the antennas. This subpart B describes the minimum features of a reasonable testing program and includes requirements for recordkeeping.

§ 1204.12 Definitions.

In addition to the definitions set forth in section 3 of the act, and in § 1204.2 of the standard, the following definitions shall apply to this subpart B of part 1204:

(a) *Private labeler* means an owner of a brand or trademark which is used on the label of a CB antenna subject to the standard, which bears a private label as defined in section 3(a)(7) of the act, 15 U.S.C. 2052(a)(7).

(b) *Production interval* means a period of time determined by the manufacturer or importer that is appropriate for conducting a test on one or more samples of the CB antennas produced during that period in order to provide a high degree of assurance that all of the products manufactured during that period meet the requirements of the standard. An appropriate production interval may vary depending on the construction of the antenna, the likelihood of variations in the production process, and the severity of the test that is used. The time period for a production interval shall be short enough to provide a high degree of assurance that if the samples selected for testing pass the test, all other CB antennas produced during the period will meet the standard.

§ 1204.13 Certificate of compliance.

(a) The manufacturer or importer of any product subject to the standard must issue the certificate of compliance required by section 14(a) of the act. If the testing required by this subpart B of part 1204 has been performed by or for the foreign manufacturer of a product, the importer may rely on such tests to support the certificate of compliance if the importer is a resident of the United States or has a resident agent in the U.S., and the records are maintained in the U.S. The importer is responsible for ensuring that the foreign manufacturer's records show that all testing used to support the certificate of compliance has been performed properly with passing or acceptable results and that the records provide a reasonable assurance that all antennas imported comply with the standard.

(b) A certificate of compliance must accompany each product or otherwise be furnished to any distributor or retailer to whom the product is delivered by the manufacturer or importer.

(c) The certificate shall state:

(1) That the product ''complies with all applicable consumer product safety standards (16 CFR part 1204)'',

(2) The name and address of the manufacturer or importer issuing the certificate, and

(3) The date of manufacture and, if different from the address in paragraph (c)(2) of this section, the place of manufacture.

§ 1204.14 Certification tests.

(a) *General.* As explained in § 1204.11 of this subpart, certificates of compliance required by section 14(a) of the act must be based on either a test of each item or on a reasonable testing program.

(b) *Tests of each item.* If the certificate is based on tests of each item, the tests may be either those prescribed by the standard or any other test procedure that will determine that the item tested will comply with the standard.

(c) *Reasonable testing programs*—(1) *Requirements.* (i) A reasonable testing program for a particular model of CB antennas is one which demonstrates with a high degree of assurance that all the antennas of that model will meet all requirements of the standard. Manufacturers and importers shall determine the types and frequency of testing for their own reasonable testing programs. A reasonable testing program which does not test each item produced should be sufficiently stringent that any variations in production,

etc., over the production interval would not cause any antenna to fail if tested according to the requirements of the standard.

(ii) All reasonable testing programs shall include qualification tests, which must be performed on one or more samples of the CB antennas representative of each model produced, or to be produced, to demonstrate that the product is capable of passing the tests prescribed by the standard and shall also include production tests, which must be performed during appropriate production intervals as long as the product is being manufactured.

(iii) Corrective action and/or additional testing must be performed whenever certification tests of samples of the product give results that do not provide a high degree of assurance that all antennas manufactured during the applicable production interval will pass the tests of the standard.

(2) *Testing by third parties.* At the option of the manufacturer or importer, some or all of the testing of each item or of the reasonable testing program may be performed by a commercial testing laboratory or other third party. However, the manufacturer or importer is responsible for ensuring that all certification testing has been properly performed with passing or acceptable results and for maintaining all records of such tests in accordance with § 1204.17 of this subpart.

§ 1204.15 Qualification testing.

(a) *Testing.* Before any manufacturer or importer of CB antennas which are subject to the standard distributes them in commerce, one or more samples of each model shall be tested to determine that all such antennas manufactured after the effective date of the standard will comply with the standard. The type of tests and the manner of selecting samples shall be determined by the manufacturer or importer to provide a reasonable assurance that all antennas subject to the standard will comply with the standard. Any or all of the qualification testing required by this paragraph may be performed before the effective date of the standard.

(b) *Product modifications.* If any changes are made to a product, after initial qualification testing, that could affect the ability of the product to meet the requirements of the standard, additional qualification tests must be made before the changed antennas are manufactured for sale or distributed in commerce.

§ 1204.16 Production testing.

(a) *General.* Manufacturers and importers shall test antennas subject to the standard periodically as they are manufactured, to demonstrate that the antennas meet the requirements of the standard.

(b) *Types and frequency of testing.* Manufacturers and importers shall determine the types of tests for production testing. Each production test shall be conducted at a production interval short enough to provide a high degree of assurance that, if the samples selected for testing pass the production tests, all other antennas produced during the interval will meet the standard.

(c) *Test failure*—(1) *Sale of antennas.* If any test yields results which do not indicate that all antennas manufactured during the production interval will meet the standard, production must cease and the faulty manufacturing process or design must be corrected. In addition, products manufactured before the appropriate corrective action is taken may not be distributed in commerce unless they meet the standard. It may be necessary to modify the antennas or perform additional tests to ensure that only complying antennas are distributed in commerce. Antennas which are subject to the standard but do not comply with the requirements of the standard cannot be offered for sale, distributed in commerce, or imported in the United States.

(2) *Corrective actions.* When any production test fails to provide a high degree of assurance that all antennas comply with the standard, corrective action must be taken. Corrective action may include changes in the manufacturing and/or assembly process, equipment adjustment, repair or replacement, or other action deemed appropriate by the manufacturer or importer to achieve passing production test results.

§ 1204.17 Records.

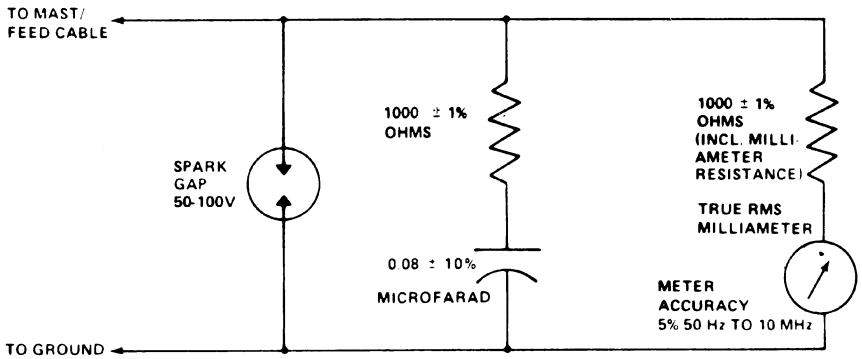
Each manufacturer or importer of CB antennas subject to the standard shall maintain the following records, which shall be maintained for 3 years after the creation of the records and shall be available to any designated officer or employee of the Commission in accordance with section 16(b) of the Consumer Product Safety Act (15 U.S.C. 2065(b)):

(a) Records of the qualification and production testing required by this subpart B, including a description of the types of tests conducted, the dates and results of the tests, and the production interval selected for the performance of the production testing.

(b) Records of all corrective actions taken, including the specific actions taken to improve the design or manufacture and to correct any noncomplying antenna produced during the period, the date the action was taken, and the test failure which necessitated the action.

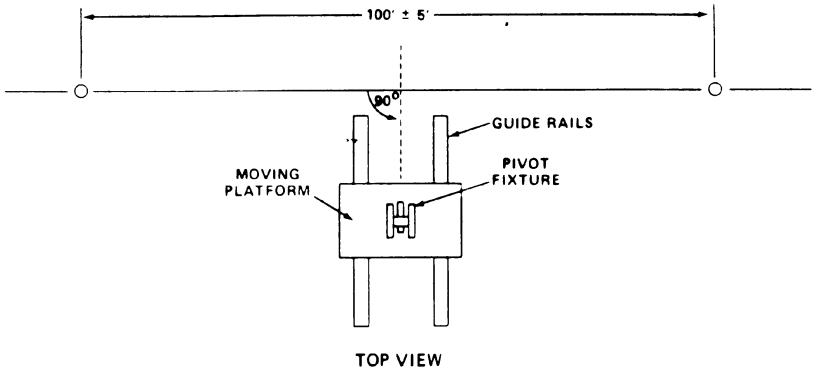
(Information collection requirements contained in paragraph (a) were approved by the Office of Management and Budget under control number 3041–0006)

FIGURES 1 AND 2 TO PART 1204—SUGGESTED INSTRUMENTATION FOR CURRENT MONITORING DEVICE AND HIGH VOLTAGE FACILITY



SUGGESTED INSTRUMENTATION FOR CURRENT MONITORING DEVICE

FIGURE 1



HIGH VOLTAGE TEST FACILITY

FIGURE 2

FIGURES 3 AND 4 TO PART 1204—HIGH VOLTAGE TEST FACILITY AND ANTENNA SYSTEM TEST SETUP

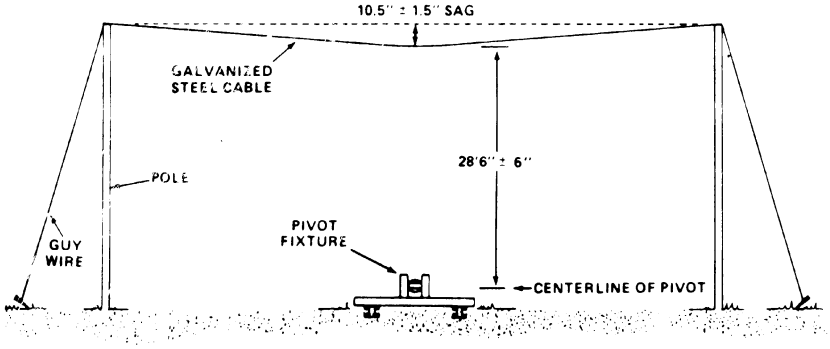


FIGURE 3

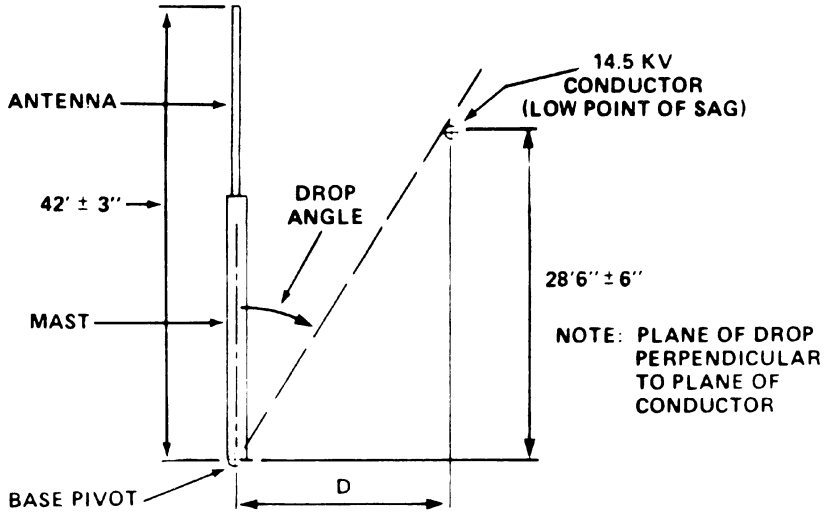


FIGURE 4

[47 FR 36201, Aug. 19, 1982; 48 FR 57125, Dec. 28, 1983]