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I. INTRODUCTION

1. Telephones are essential to all Americans because they give access to the telecommunications network. The Hearing Aid Compatibility Act of 1988 (HAC Act) recognized this need when it required the Commission to establish regulations that would ensure reasonable access to telephone service by persons with hearing disabilities.¹ In establishing those regulations, the Commission must weigh the costs and benefits to persons with and without hearing disabilities,² and seek to "eliminate the disparity between hearing aid users and non-users in obtaining access to the telephone network."³

2. In implementing the HAC Act, the Commission undertook to resolve certain hearing aid-compatibility⁴ issues through a negotiated rulemaking proceeding.⁵ Under a negotiated rulemaking process, representatives of interested parties meet to discuss the issues involved, try, in good faith, to reach a consensus on these issues, and make formal recommendations to the Commission. Accordingly, the Commission established a nineteen-member Hearing Aid Compatibility Negotiated Rulemaking Committee (Committee).⁶ Committee members represented all interested parties, including the Commission, telephone equipment manufacturers, employers, hospitals, nursing homes, hotels and motels, and persons with disabilities. The Committee completed its work and filed a Final Report (Report) of its recommendations with the Commission in August, 1995.⁷ Under the Negotiated Rulemaking Act of 1990, the Commission, to the maximum extent possible, will use the consensus of the Committee with respect to its recommended rules as the basis for a Notice of Proposed Rulemaking (NPRM) for public comment.⁸

¹ 47 U.S.C. § 610(a) (HAC Act).

² *Id.* at § 610 (e).

³ S. REP. NO. 391, 100th Cong., 2nd Sess. 7 (1988) (Senate Report).

⁴ "Hearing aid-compatibility" describes a telephone feature (distinct from external portable devices that plug into, or couple onto, a telephone) that enables a person with a hearing aid designed to be used with a telephone to use that telephone. See 47 U.S.C. § 610(b)(1)(B).

⁵ See Negotiated Rulemaking Act of 1990, 5 U.S.C. § 561 (Negotiated Rulemaking Act).

⁶ *Id.* The Committee also was chartered pursuant to the Federal Advisory Committee Act, 5 U.S.C. § 9(c) App. 2.

⁷ Final Report of the Federal Communications Commission Hearing Aid-Compatibility Negotiated Rulemaking Committee, CC Docket No. 87-124, August, 1995 (Report).

⁸ 5 U. S. C. § 561 at § 563(a)(7).

3. The Committee's recommendations form the basis for most of the proposed rules in this NPRM. First, we seek comment on the Committee's proposal to require hearing aid-compatible telephones⁹ in: (1) the non-common areas of the workplace, *e.g.*, individual offices, even if not dedicated to the use of an employee with hearing disabilities; (2) the patient and residential rooms of confined settings, such as hospitals and nursing homes; and (3) the guest rooms of hotels and motels. Second, we seek comment on a proposal that all new and replacement telephones should be equipped with volume control.¹⁰ Third, we propose to modify our rules governing telephone equipment labelling requirements. Finally, we propose to implement additional recommendations of the Committee regarding consumer education.

II. BACKGROUND

A. Procedural Background

4. In 1992, the Commission adopted rules implementing the HAC Act. *See* 47 C.F.R. §§ 68.112(b)(1), (3), (5). Most of these rules, currently in effect, are not the primary focus of this proceeding.¹¹ At issue here are rules that, with minor exceptions, required that all telephones in hospitals and other health care facilities, in hotels and motels, in prisons, and in all workplaces be made hearing-aid compatible by May 1, 1993, for establishments with twenty or more employees, and by May 1, 1994, for establishments with fewer than twenty employees.¹² *See* 47 C.F.R. §§ 68.112(b)(1), (3), (5).

⁹ The Committee, and this NPRM, address wireline hearing aid-compatibility issues only. Application of the HAC Act in the wireless telephone context is being considered in a separate proceeding.

¹⁰ "Volume control," as defined by the Committee, refers to "the ability of a telephone user to adjust the volume of acoustic sound as that sound emanates from the handset receiver." Report at 21.

¹¹ *See* note 13 *infra*.

¹² Access to Telecommunications Equipment and Services by the Hearing Impaired and Other Persons with Disabilities, CC Docket No. 87-124, *Report and Order*, 7 FCC Rcd 3472 (1992) (R&O) at Paragraph 1. *See also*, *First Report and Order*, 4 FCC Rcd 4596 (1989) (First R&O); *Memorandum Opinion and Order and Further Notice of Proposed Rule Making*, 5 FCC Rcd 3434 (1990) (MO&O), *recon. denied*, 6 FCC Rcd 4799 (1991); *Order*, 8 FCC Rcd 4958 (1993) (Order).

5. As the May 1, 1993 deadline for implementation approached, the Commission began receiving a large number of complaints from organizations asserting that they were encountering serious difficulties in their attempts to comply. In particular, on February 22, 1993, the Commission placed on public notice a petition of Goodwill Industries of Seattle for waiver of the new rules. Written comments on the Goodwill petition, and additional petitions for waiver, were filed by forty-nine individuals and organizations representing a large number of businesses, government agencies, universities, hospitals and non-profit institutions. The comments and petitions stated that the prolonged recession had so slowed normal rates of equipment replacement that the number of telephones still required to be retrofitted, and the costs of retrofiting, were far greater than the estimates relied on by the Commission in determining the implementation date of the new rules. Retrofitters reportedly had large backlogs that made many firms' compliance by the May 1 deadline impossible. Some workplace establishment owners asserted that they were being forced to remove some telephones from use altogether to avoid the requirements, thus raising safety concerns. On April 2, 1993, the Tele-Communications Association filed an Emergency Request for Stay (TCA Request) of the new requirements.

6. To allow additional time to study the comments and the TCA Request, on April 13, 1993, the Commission suspended, until further notice, enforcement of the new rules scheduled to go into effect on May 1 of 1993 and 1994. In particular, the Commission suspended enforcement of the requirement that all telephones in all workplaces employing 20 or more persons be hearing aid-compatible by May 1, 1993. The Commission also suspended enforcement of the requirement that all telephones in workplaces employing fewer than 20 employees be hearing aid-compatible by May 1, 1994. In addition, the Commission suspended enforcement of other requirements that telephones in all hospitals, certain other health care facilities, prisons, and hotels and motels be hearing aid-compatible by May 1, 1993 for establishments with 20 or more employees, and by May 1, 1994, for establishments with fewer than 20 employees. The Commission suspended enforcement of the rules for these telephones only if an alternative means of signalling life-threatening situations would be available in such confined settings.¹³ On May 12, 1993, the Alexander Graham Bell

¹³ See 8 FCC Rcd at 4959. The Commission's Order did not suspend hearing aid-compatibility requirements regarding telephones in workplace common areas [§ 68.112(b)(1)]; telephones made available to an employee with a hearing disability for use by that employee in his or her employment duty [§ 68.112(b)(1)]; telephones for emergency use, such as in elevators, tunnels and highways [§ 68.112(b)(1)]; telephones in ten percent of the guest rooms in hotels and motels [§ 68.112(b)(5)]; and telephones frequently needed by the hearing impaired, such as closed circuit telephones, which must be made hearing aid-compatible upon replacement [§ 68.112(c)]. In addition, the Commission made no changes in § 68.4, which incorporates Section 610(b)(1)(B) of the HAC Act, and requires that wireline telephones manufactured or imported for use in the United States (with certain exceptions, such as secure telephones) after August 16, 1989 (August 16, 1991 for cordless telephones) be hearing aid-compatible.

Association for the Deaf, on behalf of persons with hearing disabilities, filed an Emergency Request to Reinstate Enforcement of the suspended rules (AG Bell Request).

7. In light of these events, the Commission asked for comments regarding the establishment of an advisory committee that would consider whether the rule suspension should be lifted and whether to propose new rules, and nominations for membership on such a committee.¹⁴ Commenters overwhelmingly favored the use of the negotiated rulemaking process to resolve the controversy, and thirty-nine nominations were filed. On March 27, 1995,¹⁵ the Commission announced the planned formation of the nineteen-member Committee.¹⁶ The Commission made the membership selection so as to assure broad representation from all interested parties, as required by the Negotiated Rulemaking Act.

8. On April 11, 1995 the Committee's Charter was approved by the Office of Management and Budget and the General Services Administration.¹⁷ The Charter stated that the purpose of the Committee was to provide recommendations to the Commission on whether to lift the suspension of the rules, and to provide other recommendations concerning requirements for hearing aid-compatible telephones. The Committee met at eight formal meetings over 64 calendar days, and formed working groups and caucus groups which met informally during that same period.

9. In August, 1995, the Committee filed its Report with the Commission. The Committee proposed that, in place of the suspended rules, the Commission adopt new rules for the workplace, for confined settings, and for hotels and motels. The Committee also made several additional recommendations, which are discussed below.

¹⁴ Public Notice, FCC Asks for Comments and Nominations for Membership Regarding the Establishment of an Advisory Committee to Negotiate Regulations, CC Docket No. 87-124 (Nov. 7, 1994).

¹⁵ Notice of Advisory Committee Establishment, 60 FR 15739, March 27, 1995.

¹⁶ Later, one Committee member (Hearing Industries Association) withdrew from the deliberations when it became clear that this Committee would not be addressing the hearing aid compatibility issues of wireless telephones.

¹⁷ See Committee Charter at Appendix A.

B. Technical Background

10. Approximately 30 percent¹⁸ of all hearing aids have a small electro-magnetic induction¹⁹ coil that generates a magnetic field. This coil is called a tele-coil, or T-Coil. Telephones with a similar coil in the telephone receiver are described as "hearing aid-compatible"²⁰ because the coil in the receiver is technology that is compatible with the tele-coil in a hearing aid, enabling the hearing aid wearer to hear a transmission over the telephone. Without such a coil in the telephone receiver, those wearing hearing aids with T-Coils cannot use the tele-coil feature in their hearing aid.²¹ To make telephones accessible to persons with hearing disabilities, the HAC Act required that, after August 16, 1989, virtually all wireline telephones manufactured or imported for use in the United States be hearing aid-compatible, as defined by the Commission.²²

¹⁸ Committee Document HACNRC-44.

¹⁹ "Induction" refers to the conversion of one form of energy into another. In the case of "electro-magnetic induction," electrical energy is converted into magnetic energy.

²⁰ 47 C.F.R. §§ 68.4 and 68.316. The technical standards for hearing aid-compatible telephones are specified in two documents, ANSI/EIA-504-1989, "Magnetic Field Intensity Criteria For Telephone Compatibility With Hearing Aids," and ANSI/TIA/EIA-504-1-1944, an addendum to EIA-504 which adds the HAC requirements for Integrated Services Digital Network (ISDN) telephones. The technical standards also are stated at 47 C.F.R. § 68.316. See also 47 C.F.R. §§ 64.607, 68.3 ("Essential Telephones"); 68.5, 68.112, 68.218(5), 68.224, 68.414.

²¹ The Senate Committee Report explained the operation of the tele-coil as follows: "Most hearing aids contain a small microphone that amplifies all sounds that reach the ear. Placing a telephone next to this microphone, however, causes a loud squeal or 'feedback' that prevents the user from hearing the voice at the other end. To address these problems, many hearing aids also contain a 'telecoil'. The telecoil is a small, tightly-wrapped piece of wire that, when activated, can pick up the voice signal from the electromagnetic field that leaks from 'compatible' telephones. As long as the telephone is compatible (i.e., it permits enough leakage of this magnetic field), users of the telecoil-equipped hearing aids can communicate effectively over the telephone without 'feedback' and without the amplification of unwanted background noise." Senate Report at 2.

²² First R&O, 4 FCC Rcd 4596 (1989).

III. DISCUSSION

A. Overview of the Committee's Recommendations

1. Summary of Recommendations

11. The rules recommended by the Committee²³ provide, in general, that eventually all wireline telephones in the workplace, in confined settings and in hotels and motels be hearing aid-compatible. The Committee recommended that the Commission adopt a rebuttable presumption, under which an establishment's owners may presume, after a certain date, that its telephones are hearing aid-compatible, as a result of normal-course replacements and upgrades, until individual telephones are identified as being non-hearing aid-compatible. The Committee's recommendations require that, once identified, the particular telephones must be replaced with a hearing aid-compatible telephone within fifteen working days. Workplace and hotel and motel establishments that have purchased telephones in the 1985-1989 period, before the effective date of the HAC Act, would have a longer time to comply.

12. The Committee's recommendations further provide that, as existing telephones are replaced, or as newly purchased telephones are acquired, those telephones would, in general, be hearing aid-compatible. In the case of workplace replacement telephones taken from inventory existing at the time the Committee's recommended rules would become effective, an establishment's owners could presume that the telephones were hearing aid-compatible until individual telephones were identified as being non-hearing aid-compatible. Once identified, the telephones must be replaced within fifteen working days.

13. The Committee also recommended requiring hearing aid-compatibility in the form of electro-magnetic coil compatibility and volume control for newly acquired and replacement telephones. Replacement or retrofitting of existing telephones for volume control would not be required under this recommendation. While the Committee recommended a volume control requirement, it suggested a technical standard for volume control, and suggested a requirement that as of a certain date, telephones manufactured or imported into the United States for use in the United States have a volume control feature. The Committee emphasized, however, that before any volume control requirement applies to an establishment's telephones, two conditions would have to be met: (1) the subject telephones must be newly acquired or replacement telephones and (2) the Commission's technical standards and implementation rules for volume control must be in place. The Committee also emphasized that the volume control requirement should be considered by the Commission along with the Committee's other hearing aid-compatibility recommendations in a single

²³ The Committee adopted its recommendations by consensus. No Committee member objected to the recommendations. Four Committee members filed separate statements. See Report, Additional Views, Appendix 8.

rulemaking proceeding. The Committee's entire set of recommendations was negotiated as a unit, and the Committee sought to develop recommendations that would serve multiple groups of hearing aid wearers, without unduly favoring one group over another. The Committee concluded that a single rulemaking would provide full and clear notice of all hearing aid-compatibility requirements and effective dates for implementation, and would alleviate the delay inherent in multiple rulemakings.²⁴

14. The Committee recommended that workplace establishments with fewer than fifteen employees be exempt from the proposed regulations, although their owners, like all workplace establishment owners, must provide hearing aid-compatible telephones to employees with hearing disabilities for use in their employment duty. The Committee also recommended that headsets be exempt from compatibility requirements, except to the extent they are needed by employees with hearing disabilities for use in their employment duty. The Committee further recommended that until the telephones in a workplace establishment become hearing aid-compatible, workplace establishment owners be required to provide a "safe harbor" in the form of emergency-use telephones beyond the common areas and outside the offices of employees with hearing disabilities. The Committee also recommended that confined setting establishments be exempt from compatibility requirements if they provide an alternate means of signalling life-threatening or emergency situations, or if residents bring in their own telephone equipment. The Committee recommended deleting prisons from the types of confined setting establishments included under the proposed rules applicable to confined settings, although prisons continue to be covered under the recommended workplace establishment provisions for employees of prisons.²⁵ Finally, the Committee proposed that until all hotel and motel telephones become hearing aid-compatible, a certain percentage of the guest rooms must have hearing aid-compatible telephones. A slightly different schedule would cover hotels and motels that purchased their telephones in the period 1985 through 1989.

²⁴ Volume control is discussed more fully below at paragraph 54.

²⁵ The Committee adopted the Americans With Disabilities Act of 1990 (ADA) definitions of "employee" and "employer," except the Committee did not adopt the ADA's exemptions from "employer," including the ADA's exemption of the U.S. Government. See Report at 19, notes 30 and 31, and ADA § 101(4),(5). Americans With Disabilities Act of 1990, S. 933, Pub. L. 101-336, 104 Stat. 327, 366-69 (1990) (codified in scattered sections).

2. No Recommendation Requiring Retrofitting

15. The Committee made no recommendation that would require the retrofitting of equipment. The Committee determined that, because of the burden they impose on establishments, retrofitting requirements were not appropriate. The Committee also determined that there is a high probability of voluntary replacement of existing non-hearing aid-compatible telephones with hearing aid-compatible telephones by the effective date of the proposed regulations requiring that targeted telephones be hearing aid-compatible. Therefore, the Committee concluded that large retrofitting programs would be unnecessary. The Committee determined that the average life-cycle of telephones is approximately seven years.²⁶ The Committee then reasoned that, given that the HAC Act required wireline telephones manufactured or imported for use in the United States to be hearing aid-compatible as of 1989 (or 1991 in the case of cordless telephones), the normal cycles of acquisition and replacement should ensure that most of the targeted telephones will be hearing aid-compatible by the target date. These facts, the Committee concluded, also justify the workplace rebuttable presumption that it has recommended to the Commission.

3. Statutory and Regulatory Basis for Committee's Recommendations

16. The HAC Act requires that all "essential telephones" be hearing aid-compatible.²⁷ The Act defines "essential telephones" as "coin-operated telephones, telephones provided for emergency use, and other telephones frequently needed for use by persons using . . . hearing aids."²⁸ Under our rules, "emergency use telephones" include workplace, confined setting and hotel and motel telephones designated by Section 68.112(b), and it is Section 68.112(b) to which the Committee's efforts were addressed.

17. The legislative history of the HAC Act indicates the importance Congress placed on the "emergency use" provision. The Senate Report states that "It is impossible to predict beforehand when an emergency situation may arise. . . . Emergencies may occur, for instance, at a friend's home or in another person's business or office. In short, the situations in which a hearing aid user would need access to a telephone are innumerable."²⁹ The House Report states that "[t]he Committee intends the term [telephones provided for emergency use] be defined to include, but not be limited to telephones in elevators, mine shafts, and any other

²⁶ Committee members representing organizations that purchase telephones made this estimate based on their experience in purchasing telephones.

²⁷ HAC Act at 47 U.S.C. § 610(b)(1)(A).

²⁸ *Id.* at § 610(b)(4)(A). The Commission has defined "telephones frequently needed by the hearing impaired" at Section 68.112(c) of our rules.

²⁹ Senate Report at 3.

place where a hearing impaired person might be isolated in the event of an emergency."³⁰ In introducing H.R. 2213, Representative Edward J. Markey asked his colleagues to "[i]magine not being able to call home from a friend's house or use the phone in someone else's office or even to call 911 outside your own home in an emergency."³¹ During the same floor debate, Representative Douglas Walgren stated that "[t]his bill would not only make compatible phones more accessible for the hearing impaired, it would also insure quick access in the event of an emergency," and this could "save a life."³²

18. In the Commission's 1990 MO&O, in which the Commission tentatively concluded that all workplace telephones should be made hearing aid-compatible, the Commission stated that "we do not believe reliable judgments can be made as to which of these telephones will or will not be in a place where a hearing impaired person might be isolated in the event of an emergency."³³ Accordingly, the Commission concluded that the definition of "telephones provided for emergency use" should be expanded to accommodate all workplace telephones, provided the costs and benefits were considered, as required by Section 710(e) of the HAC Act.³⁴ The Commission stated that this conclusion was particularly appropriate since the charge to the Commission in Section 710(a) of HAC Act is to "expand access by the hearing impaired" to telephone service.³⁵ Section 710(f) of the HAC Act further provides that the Commission "periodically review the regulations established pursuant to Section 710."³⁶ Based on this reasoning, the Commission subsequently adopted rules expanding the requirement of hearing aid-compatible telephones not only to the workplace, but also to confined settings and to hotels and motels.³⁷

³⁰ H.R. REP. No. 674, 100th Cong., 2d Sess. 15 (1988) (House Report) (emphasis added).

³¹ 134 Cong. Rec. H3985 (daily ed. June 7, 1988) (statement of Rep. Markey).

³² Id. at H3987.

³³ MO&O, 6 FCC Rcd 4799 (1991), at paragraph 17. See also H.R. REP. No. 100-674 at 15 (House Report).

³⁴ 47 U.S.C. § 610(e).

³⁵ Id.; see also Order, 8 FCC Rcd 4958 (1993), at paragraph 2.

³⁶ MO&O at paragraph 12.

³⁷ R&O, 7 FCC Rcd 3472 (1992) at paragraph 1.

19. We tentatively conclude that the Committee's recommendations are consistent with the statute and the Commission's previous decisions. In general, the Committee recommends that the Commission retain its rules regarding the types of telephones defined as "emergency use telephones." The Committee's recommendations, when compared with previous regulations, generally do not change the types of telephones to be made hearing aid-compatible, but change only when those telephones are to be made hearing aid-compatible. The only other significant departure from the Commission's previous rules is that the Committee also proposes that, under certain circumstances, the Commission consider whether to require that newly acquired and replacement telephones have volume control.³⁸

20. In considering the requirements for both hearing aid-compatibility and volume control, the Committee weighed the costs and benefits to all telephone users, including persons with and without hearing disabilities.³⁹ Representatives of large and small purchasers of telephone equipment described to the Committee both the cost and effort that would be incurred as a result of the proposed regulations. Representatives of persons with hearing disabilities described the difficulties persons with hearing disabilities now experience when telephones are not hearing aid-compatible. Consumer representatives also described the increased access to telephone service such persons would receive if the Committee's proposed regulations were implemented. Representatives of equipment manufacturers and industry standards-setters reviewed for the Committee the cost and implementation issues posed by design, manufacture and distribution of equipment recommendations made by the Committee.⁴⁰

21. The HAC Act directs the Commission to take affirmative and specific steps to increase access to the public telephone network by persons with hearing disabilities. The Act states that "The Commission shall establish such regulations as are necessary to ensure reasonable access to telephone service by persons with impaired hearing,"⁴¹ and that "The Commission shall establish or approve such technical standards as are required to enforce this section."⁴² The House Report notes that the HAC Act "will allow the hearing impaired to eventually use virtually every telephone."⁴³ The Congressional "findings" of the HAC Act state that "universal telephone service for hearing-impaired persons will lead to greater employment opportunities and increased productivity, " and that "to the fullest extent made possible by technology and medical science, hearing-impaired persons should have equal access to the

³⁸ See paragraph 54 below for a discussion of volume control proposals.

³⁹ 47 U.S.C. § 610(e).

⁴⁰ For a list of the Committee membership, see HACNRC-9.

⁴¹ 47 U.S.C. § 610(a).

⁴² Id. at Section (c).

⁴³ House Report at page 3.

national telecommunications network."⁴⁴ Equivalent access also is discussed in the Senate Report, when it states that the Act "will help to eliminate the disparity between hearing aid users and non-users in obtaining access to the telephone network."⁴⁵ The Senate Report adds that "[P]assage of the Hearing Aid Compatibility Act of 1988 recognizes the policy established in the Communications Act of 1934 to 'make available, so far as possible, to all the people of the United States a rapid, efficient, . . . communication service with adequate facilities at reasonable charges.' (47 U.S. C. 151)"⁴⁶ The rules proposed here help fulfill the Commission's mandate under the HAC Act.

B. Proposed Rule Regarding Workplaces

1. Proposed §§ 68.112(b)(1)(A) - General Language

22. **Discussion** The first paragraph of the current Section 68.112(b)(1) states that telephones provided for emergency use, and hence required to be hearing aid-compatible, shall include, *inter alia*, telephones in elevators, tunnels, and all workplace areas, including common areas. The Committee recommended modifying that language in several respects. First, workplace non-common areas are addressed separately in recommended Section 68.112(b)(1)(B), discussed below at paragraph 24. Second, a new recommended Section 68.112(b)(1)(A) would generally exclude headsets from the category of wireline telephones covered by the hearing aid-compatibility rules. The Committee determined that headsets are a specialty-use item which are less likely than the standard office telephones to be needed for emergency use. Some employees, however, such as airline reservation assistants, telemarketing employees, receptionists and telephone operators, need headsets to perform their duties. For this reason, the Committee further recommended that we amend Section 68.112(b)(1), to require that hearing aid-compatible headsets be provided to employees with hearing disabilities who need the headsets in their employment duty. Third, the Committee recommended other technical amendments to the existing language of Section 68.112(b)(1) to clarify the kinds of telephones to which it applies.

23. **Comment Requested.** We tentatively agree with the Committee's reasoning that headsets are a specialty-use item, not normally called upon for emergency use except when used by an employee in their employment. We tentatively find that, with the exception of the situation discussed in paragraph 22, headsets should not be included within the Section 68.112(b)(1) definition of "emergency use telephones." Therefore, we tentatively conclude that the Committee's recommended Section 68.112(b)(1)(A), as stated in Appendix B, should be adopted as part of the Commission's rules. We seek comment on these proposed rules. In

⁴⁴ See Section 2 of Public Law 100-394, the "Hearing Aid Compatibility Act of 1988," 102 Stat. 976, Aug. 16, 1988.

⁴⁵ Senate Report at page 7.

⁴⁶ *Id.*

particular, we seek comment on whether to exclude headsets generally from the definition of wireline telephones.

2. Proposed § 68.112(b)(1)(B) - Implementation and Exemptions

24. **Discussion** The Committee recommended that we require that non-common area workplace telephones generally be hearing aid-compatible by January 1, 2000. The Committee concluded that it is important to establish a date certain after which the public and persons with hearing disabilities could feel confident that most workplace telephones are hearing aid-compatible. The Committee recommended, however, that telephones purchased between January 1, 1985 through December 31, 1989, not be required to be hearing aid-compatible until January 1, 2005. The Committee concluded that this exception was needed to protect employers who purchased non-hearing aid-compatible telephones in the years immediately preceding the implementation of the Hearing Aid Compatibility Act of 1988 (HAC Act). The Committee determined that workplace establishment owners who purchased telephones immediately before the HAC Act should have more time to replace those telephones.

25. The Committee also recommended an exemption from coverage for workplace establishments with fewer than fifteen employees. The Committee noted that because small employers have smaller budgets, which can make installation of new telephones proportionately more burdensome for these employers, the burden of complying with the proposed hearing aid-compatibility regulations might fall disproportionately on them. Therefore, the Committee adopted the coverage cutoff standard used in the ADA, which requires compliance only by employers with fifteen or more employees. The total employment force of an establishment, not the number of employees an employer might have at a particular worksite, would determine whether that employer must comply with the proposed rules governing workplace telephones. While the Committee also adopted the ADA's definitions of "employee" and "employer,"⁴⁷ the Committee did not adopt the ADA's exceptions to the definition of "employer."⁴⁸ Those exceptions would exempt, among others, the United States Government from compliance. The Committee believed that no employment organization, particularly the United States Government, should be excluded from an obligation to comply with the proposed rules if it has fifteen or more employees.

⁴⁷ The ADA defines "employee" as "an individual employed by an employer," and "employer," in pertinent part, as "a person engaged in an industry affecting commerce who has 15 or more employees for each working day in each of 20 or more calendar weeks in the current or preceding calendar year, and any agent of such person...." 42 U.S.C. § 12111.

⁴⁸ The ADA exempts "the United States, a corporation wholly owned by the government of the United States, or an Indian tribe; or a bonafide private membership club (other than a labor organization) that is exempt from taxation under section 501(c) of the Internal Revenue Code of 1986." *Id.*

26. **Comment Requested** For the reasons given by the Committee, we tentatively conclude that the Committee's recommended Section 68.112(b)(1)(B), as stated in Appendix B, should be adopted as part of the Commission's rules. Proposed Section 68.112(b)(1)(B) would set specific dates by which a workplace establishment's telephones generally must be hearing aid-compatible, but it would exempt workplace establishments with fewer than fifteen employees from the obligation to comply. Establishing specific dates would help employers know precisely when their obligations attach and to develop orderly plans for achieving compliance. The exemption for workplace establishments with fewer than fifteen employees appears reasonable because it acknowledges the potentially harsh burden compliance would impose on smaller workplace establishments; it would also make the proposed rule consistent with the treatment of small businesses in the ADA. We seek comment on these proposed rules. Specifically, we seek comment on whether requiring compliance in the years 2000 and 2005 reasonably balances the needs of both workplace establishments and the needs of persons with hearing disabilities. We also request comment on whether the fifteen-employee cutoff strikes a reasonable balance between the needs of persons with hearing disabilities and the burden compliance with our rules would impose on small businesses, and whether the definition of "employee" in this context is clear. We also seek comment on whether any employment establishment should be excluded from an obligation to comply with the proposed rules if it has fifteen or more employees.

3. Proposed § 68.112(b)(1)(C) - Workstation Requirements

27. **Discussion** Our current rules governing access to hearing aid compatible phones in the workplace state that "telephones made available to a hearing impaired employee for use by that employee in his or her employment duty . . . shall be hearing aid-compatible . . ." ⁴⁹ The Committee proposed that these rules be modified in two ways. First, as stated above, it recommended that we require employers to provide hearing aid compatible headsets to employees needing such headsets to perform employment duties. Second, the Committee recommended that the proposed regulation apply to all workplace establishments, regardless of the number of employees. Thus, even employers with fewer than fifteen employees would have to comply with this provision.

28. **Comment Requested** We tentatively conclude that the Committee's recommended Section 68.112(b)(1)(C), as set forth in Appendix B, should be adopted as part of the Commission's rules, because of the likelihood that an employee with a hearing disability might need his or her own work telephone for an emergency purpose, regardless of the number of employees at that workplace. We seek comment on this proposed rule.

⁴⁹ 47 C.F.R. § 68.112 (b)(1).

4. Proposed § 68.112(b)(1)(D) - Rebuttable Presumption

29. **Discussion** The Committee noted that employers may have serious difficulty determining whether a particular telephone is hearing aid-compatible. The Committee found that, because the Commission's rules require manufacturers to stamp either a serial number or date of manufacture on terminal equipment, such as telephones,⁵⁰ many telephones are not stamped with a date of manufacture. Therefore, an employer may not be able to determine readily whether a telephone is hearing aid-compatible. Employers may be able to trace telephone model and serial numbers to a manufacturer's records, but such a step requires time and administrative expense. The Committee noted that even if a date-of-manufacture is plainly stamped on a telephone, some vendors may occasionally distribute allegedly "complying" equipment that does not, in fact, comply with our Part 68 rules. The Committee also determined that accurate, portable devices to test a telephone for hearing aid-compatibility are not currently available. Existing portable devices cannot test to the technical detail required by the Commission's rules.⁵¹ This lack of specificity in testing led the Committee to conclude that a strict compliance rule might force employers to send large inventories of telephones to laboratories for testing at great expense.

30. To relieve the employer of the need to make this determination, the Committee proposed that there be a presumption that, after a particular date, every telephone is hearing aid-compatible. This presumption could be rebutted, but only on a telephone-by-telephone basis, by anyone who identifies a particular telephone as being non-hearing aid-compatible. Once such a telephone has been identified, the employer would have to replace the telephone within fifteen working days with a telephone meeting the Commission's compatibility requirements. The Committee specified that its proposal would create no new right of entry by third parties to workplace premises and that the person making the identification must be someone present in the normal course of the establishment's business, legitimately on the premises as an employee or invitee of the establishment.⁵² Under the Committee's proposed rebuttable presumption, if the identifying individual was not satisfied with the subsequent actions of the employer, the individual could file a complaint under the normal hearing aid-compatibility enforcement procedures.⁵³ In recommending this presumption, the Committee considered the fact that by the proposed dates by which the new workplace hearing aid-compatibility compliance obligations would attach, the normal turnover of telephones would ensure that most workplace telephones would have been manufactured or imported after

⁵⁰ 47 C.F.R. § 68.300(b).

⁵¹ 47 C.F.R. § 68.316.

⁵² Report at 18.

⁵³ See 47 C.F.R. § 68.414 and 47 U.S.C. § 503(b)(5).

August 16, 1989, and thus would be hearing aid-compatible.⁵⁴

31. **Comment Requested** We tentatively conclude that the Committee's proposal, as set forth in proposed Section 68.112(b)(1)(D), in Appendix B, should be adopted as part of the Commission's rules. That section would establish a rebuttable presumption that, as of particular dates, workplace telephones are hearing aid-compatible. Such a presumption appears reasonable, because by the projected dates, normal telephone system replacement cycles would assure in most cases that all existing workplace telephones would be replaced with hearing aid-compatible telephones. The presumption would appear to relieve the burden on workplace establishments to test each telephone, while also protecting the needs of employees with hearing disabilities. We request comment on this proposed rule section.

5. Proposed § 68.112(b)(1)(E) - Newly Acquired Telephones

32. **Discussion** The Committee recognized that when an establishment adds a telephone or replaces a telephone currently in use, an opportunity is created to substitute hearing aid-compatible equipment for non-hearing aid-compatible equipment without requiring retrofitting.⁵⁵ For this reason, the Committee recommended that we require that any newly acquired telephone be hearing aid-compatible. The Committee defined "newly acquired" as new, refurbished or second-hand telephones, including telephones from an establishment's stored inventory. The Committee would create an exception to this requirement for a replacement telephone taken from an establishment's inventory existing prior to the time of the effective date of the proposed regulations.⁵⁶ In the case of the exception, the establishment would be required to provide a hearing aid-compatible telephone only upon a bona fide request from anyone legitimately on the premises of the establishment, as an employee, guest or other invitee. The Committee defined "replacement" as "substituted with something else."

33. As discussed more fully in paragraphs 54 through 57, the Committee recommended adding a volume control requirement that would apply only to newly acquired and replacement telephones. The Committee recommended that this mandatory volume control feature be phased in, as new telephones are acquired and as telephones in existing inventories are replaced. An establishment's decision to replace existing telephones, or to purchase new telephones, however, would remain voluntary, except in the two cases specified in paragraph 57.

⁵⁴ Section 68.4 of our rules requires that except for "secure" telephones, all wireline telephones manufactured or imported for use in the United States be hearing aid-compatible after August 16, 1989 (or August 16, 1991, in the case of cordless telephones).

⁵⁵ See proposed Section 68.112(b)(1)(E) in Appendix B.

⁵⁶ See proposed Section 68.112(b)(1)(F) in Appendix B.

34. The Committee reasoned that once an employer has decided, for whatever reason, to augment its inventory of telephones, or to replace one telephone currently in use with another, the increase in cost or effort to assure that the new or replacement telephone is hearing aid-compatible is not great. The Committee was also concerned that, without this provision, non-hearing aid-compatible telephones could be replaced continuously with similar equipment, thus preventing the development of a fully hearing aid-compatible workplace, an outcome counter to the intent of the HAC Act. The Committee determined that this provision governing newly acquired and replacement telephones should apply to those telephones replaced under the rebuttable presumption provisions of proposed Section 68.112(b)(1)(D), discussed above. Finally, the Committee recommended that the Commission exempt workplace establishments with fewer than fifteen employees from this rule, because compliance would impose a disproportionate burden on smaller workplace establishments, and because such an exemption would be consistent with the small business exception in the ADA.

35. **Comment Requested** We tentatively conclude that the Committee's recommendation that newly acquired and replacement telephones be hearing aid compatible⁵⁷ should be adopted as part of the Commission's rules. As applied to newly acquired and replacement telephones, hearing aid-compatible refers to both the magnetic induction coil and to the volume control methods of making telephones hearing aid-compatible, although the requirement of volume control is delayed one year.⁵⁸ The new acquisition or replacement of telephones is a natural opportunity to gradually convert the embedded base of workplace telephones from non-hearing aid-compatible to hearing aid-compatible. Without the rule, the non-hearing aid-compatible portions of an employer's inventory will be indefinitely perpetuated. We request comment on this proposed rule.

6. Proposed § 68.112(b)(1)(F) - Replacements From Existing Stored Inventory

36. **Discussion** The Committee recommended that a different set of rules apply when replacement telephones are taken from an establishment's stored inventory of telephones existing at the time proposed regulations go into effect. Employer representatives on the Committee had expressed concern that without such provisions, an establishment's entire stored telephone inventory could become obsolete and unavailable for replacement use, even though the establishment, when it had accumulated the inventory, had no prior notice that replacement telephones had to be hearing aid compatible.

⁵⁷ See proposed Section 68.112(b)(1)(E), in Appendix B.

⁵⁸ The one year delay associated with the proposed volume control requirement is discussed infra at paragraph 54.

37. The Committee recommended that an individual replacement telephone drawn from stored inventory, acquired prior to the effective date of the proposed rules, be hearing aid-compatible, but only if a person legitimately on the establishment's premises has made a "bona fide" request that such a telephone be hearing aid-compatible.⁵⁹ The proposed rule would give no new third party a right to challenge the rebuttable presumption that a telephone was hearing aid-compatible (i.e., that it has electro-magnetic coil compatibility). The identification of the telephone and request for replacement by the individual must be "bona fide." The Committee added this requirement because Section 68.112(b)(1)(F) covers the period of time before the proposed dates by which time all workplace telephones must be hearing aid-compatible, i.e., from the effective date to January 1, 2000 or 2005, whichever date is applicable.⁶⁰ The words "bona fide" were added to help ensure that requests during this period would be based on genuine need for a hearing aid-compatible telephone.⁶¹ As with the recommended rules on newly acquired and replacement telephones,⁶² this section does not apply to workplace establishments with fewer than fifteen employees.

38. **Comment Requested** We tentatively conclude that the Committee's recommended rule⁶³ for separate treatment of replacement telephones taken from stored inventory existing at the time the proposed rules become effective should be adopted as part of the Commission's rules. It appears that the cost of requiring an establishment to discard its inventory of telephones outweighs the benefit of early compliance with the hearing aid-compatibility requirement, unless there has been a bona fide need for such a telephone identified at the site of replacement. We request comment on this section.

⁵⁹ See proposed Section 68.112(b)(1)(F) in Appendix B.

⁶⁰ See proposed Section 68.112(b)(1)(B) in Appendix B.

⁶¹ Similar language was not added to Section 68.112(b)(1)(D) because by the time of the effective dates of that section, all workplace telephones presumably will be hearing aid-compatible. See proposed Section 68.112(b)(1)(D) in Appendix B.

⁶² See proposed Section 68.112(b)(1)(E) in Appendix B.

⁶³ See proposed Section 68.112(b)(1)(F) in Appendix B.

7. Proposed §§ 68.112(b)(1)(G) - Safe Harbor

39. **Discussion** The Committee concluded that prior to January 1, 2000 (or January 1, 2005, in some cases),⁶⁴ the dates by which telephones must be hearing aid compatible, persons with hearing disabilities who are in the workplace still may need access to hearing aid-compatible telephones besides those in private offices or workplace common areas.

Therefore, the Committee has recommended that we require the availability of at least one hearing aid-compatible telephone for emergency use on every floor of a workplace, whether that telephone is coin-operated, a common area telephone or a designated hearing aid-compatible telephone, wired or wireless. The manner of designation would be left to the employer, as would be the definition of what constitutes a workplace "floor."

40. **Comment Requested** We tentatively conclude that the Committee's recommended rule⁶⁵ to provide additional, interim hearing aid-compatible telephones to employees with hearing disabilities should be adopted as part of the Commission's rules, because without this requirement employees needing hearing aid-compatible telephones may be limited for several years to the use of only their workstation telephones in the case of emergencies. The requirement of an additional hearing aid-compatible telephone on each workplace floor appears to serve all employees in emergency situations, particularly employees with hearing disabilities. We request comment on this proposed rule.

C. Proposed Rule Regarding Confined Settings

41. **Discussion** The Committee determined that it was important that confined setting residents⁶⁶ be able to rely on having room telephones, when provided by the establishment, that are hearing aid-compatible telephones. The Committee recommended that for confined setting establishments with fifty or more beds, the room telephones provided by the establishment must be hearing aid-compatible one year after the proposed rules are adopted. For confined setting establishments with fewer than fifty beds, the time period for compliance is two years. The Committee did not recommend reliance on a rebuttable presumption in the case of confined settings because the residents are, by definition, confined to the setting, and therefore generally more vulnerable than employees in a workplace. In addition, confined setting occupants may be elderly or in ill health, which increases their vulnerability.

⁶⁴ See proposed Section 68.112(b)(1)(B) in Appendix B.

⁶⁵ See proposed Section 68.112(b)(1)(F), in Appendix B.

⁶⁶ Confined settings are settings such as rooms in hospitals, residential health care facilities for senior citizens, and convalescent homes, in which the residents are not able to come and go at their discretion. See existing § 68.112(b)(3).

42. For these same reasons, the Committee also did not recommend extending the date by which confined setting telephones purchased during the years 1985-1989 must be replaced with hearing aid-compatible telephones.⁶⁷ The Committee did not recommend that we exempt smaller confined setting establishments from compliance, as it had smaller workplace establishments. It did, however, recommend giving smaller confined setting establishments, i.e., those with fewer than fifty beds, an extra year to comply. The Committee determined that smaller confined setting establishments are more likely to have smaller operating budgets and older telephone systems, making earlier compliance more difficult. The Committee reviewed and discussed confined setting industry information before reaching consensus that only confined setting establishments with fewer than fifty beds should have more time to comply.

43. The Committee recommended that we require all newly acquired and replacement telephones in confined settings to be hearing aid-compatible (electro-magnetic coil compatible) and have volume control, if the replacements or new acquisitions occur more than a year after the effective date of the proposed volume control rules. The Committee defined "newly acquired" as new, refurbished or second-hand telephones, including telephones from an establishment's stored inventory.⁶⁸

44. The Committee did not include "prisons" in its definition of confined settings because it found prisons to be distinct from other confined settings in their telecommunications requirements. Thus its recommendations concerning availability of hearing aid-compatible telephones in confined settings do not cover prisons. The workplace requirements of proposed Section 68.112(b)(1), however, would continue to apply to prisons. Thus, for example, replacement telephones in the workplace of prison employees would have to be hearing aid-compatible under the Committee's recommended rules.

45. The Committee determined that a confined setting establishment should not be responsible for assuring that a telephone installed and maintained by a patient or resident is hearing aid-compatible. The Committee recommended that, in this particular case, the patient or resident can better determine whether his or her telephone needs to be hearing aid-compatible. Similarly, the Committee excluded from its recommendations confined setting establishments that offer an alternative emergency signalling device, so long as the device is "available, working and monitored." The Committee added these words after reviewing the wording in provisions governing resident emergency call systems in health care facilities in the regulations of the U.S. Health and Human Services Department Health Care Finance

⁶⁷ Compare with proposed section 68.112(b)(1)(B)(ii) (non-common area workplace telephones, purchased between 1985 and 1989, not required to be hearing aid-compatible until January 1, 2005).

⁶⁸ See workplace discussion supra at paragraph 32.

Administration.⁶⁹ Enforcement of the recommended rules regarding confined settings would be handled in the same manner as enforcement of other hearing aid-compatibility rules.⁷⁰

46. **Comment Requested** We tentatively conclude that the Committee's recommendations governing telephones in confined settings, set forth in proposed Section 68.112(b)(3) in Appendix B, should be adopted as part of the Commission's rules because it is in the public interest to give confined setting residents with hearing disabilities the ability to make emergency communications afforded by the telephone. We request comment on the proposed rule and its underlying rationale. We seek comment on whether the cutoff at fifty beds is reasonable, whether omitting prisons from confined settings treatment is appropriate, and whether an alternative means of signalling life-threatening or emergency situations provides reasonable access to emergency help. We also seek comment on whether the exemption for telephones installed and maintained by a patient or resident is appropriate.

D. Proposed Rule Regarding Hotels and Motels

47. **Discussion** The Committee determined that all telephones in all hotel and motel rooms should be hearing aid-compatible, because occupants of hotel and motel rooms often are alone and dependent on telephones in their rooms in an emergency. Because hotel and motel occupants also are transient, they may be unfamiliar with other alert systems, or unable to hear or see them. The Committee determined that it would not recommend a rebuttable presumption that telephones in hotel or motel rooms were hearing aid compatible because someone who has legitimately requested a change in telephones might not be in position to determine if a change has been made, or to benefit from that change. Enforcement of the recommended rules regarding hotels and motels would be handled in the same manner as enforcement of other hearing aid-compatibility rules.⁷¹

48. As in the case of workplace and confined setting establishments, the Committee recommended that we set different implementation time tables for smaller and larger hotels and motels. The Committee again reasoned that smaller hotel and motel establishments, more likely to have smaller budgets and older telephone systems, would find early compliance more difficult. After reviewing industry information, the Committee established eighty guest rooms the cutoff for distinguishing between large and small establishments. The Committee also restricted its recommendations on hotel and motel regulations to guest rooms, rather than all rooms, which might otherwise have included general purpose rooms, such as banquet rooms. The Committee also confined its recommendations to establishments open to the general public for paid overnight accommodation. This latter clarification would include bed and breakfast establishments, but exclude hotel and motel accommodations open only to the

⁶⁹ See 42 C.F.R. § 483.70.

⁷⁰ See 47 C.F.R. § 68.414 and 47 U.S.C. § 503 (b)(5).

⁷¹ See 47 C.F.R. § 68.414 and 47 U.S.C. § 503 (b)(5).

military, or employment conference and training center accommodations. Military and civilian employment facilities, however, would be covered by the Committee's recommendations governing workplace establishments, addressing telephones used in an employee's line of duty.

49. The Committee recommended that the same general policy govern telephone replacement for hotel and motel establishments as for workplace and confined setting establishments, because telephone replacement offers an opportunity to install a telephone that is hearing aid-compatible. In the case of hotels and motels, however, the Committee adapted its recommendations to take into account the kinds of repair, renovation and new construction activities that commonly occur in hotels and motels. The recommended rule⁷² states that a hearing aid-compatible telephone is required "if a hotel or motel room is renovated or newly constructed." The Committee determined that the rule should be interpreted in a manner similar to the public accommodation replacement, repair, renovation and construction provisions of the ADA.⁷³ Thus, a general room renovation would require that the telephone in the room be made hearing aid-compatible, whether or not the hotel or motel had planned to upgrade or replace the telephone during the room renovation. However, for compliance requirements to apply, room changes need to involve more than painting the walls or changing pictures. The proposed rule also states that hearing aid-compatibility is required if a room telephone is replaced or is "substantially, internally repaired."⁷⁴ Internal telephone repairs require opening the instrument (either headset, handset or base) and repairing either the mechanical or electrical parts.

50. The current provision that requires ten percent of hotel and motel rooms to have hearing aid-compatible telephones⁷⁵ was not suspended by the Commission's 1993 Order. The Committee determined that sufficient time has elapsed since this requirement went into effect in 1992 to raise the percentage of hotel and motel room telephones that are hearing aid compatible to twenty percent. Thus it recommends that we require that at least twenty percent of all rooms in a hotel or motel have a hearing aid compatible telephone as soon as the rules we now propose would become effective. For most hotel and motel room telephones, the twenty percent requirement eventually would be superseded by the recommended requirement that all guest room telephones must be hearing aid-compatible. The Committee recommended an exception for hotel and motel establishments that have purchased telephones immediately before the effective date of the HAC Act. Instead, the Committee recommended that these hotel and motel establishments start with the standard twenty percent requirement, but increase the percentage of rooms with compliant telephones,

⁷² See proposed Section 68.112(b)(5)(B) in Appendix B.

⁷³ See 42 U.S.C. § 12183.

⁷⁴ See proposed Section 68.112(b)(5)(b) in Appendix B.

⁷⁵ 47 C.F.R. § 68.112(b)(5).

with full compliance achieved between the years 2000 to 2003, depending on the size of the establishment. The rules pertain to percentage of guest rooms, not to telephones. The Committee reached consensus on the year 2003, instead of, as in the case of workplace establishments, the year 2005, because it determined that hotel and motel occupants generally are more vulnerable in emergency circumstances, and that the recommended rules should reflect this difference.

51. Committee members representing organizations of individuals with hearing disabilities stated that the current hotel and motel provision of rooms for individuals with hearing disabilities often are inadequate. They stated that the rooms containing hearing aid-compatible telephones often are already reserved or occupied, and that it is difficult to locate hotels and motels with adequate facilities to accommodate conference facilities for organizations representing persons with hearing disabilities. In light of this information, the Committee determined that the ten percent provision should be increased, and that hotels and motels should be required to reach one hundred percent guest room compatibility by the deadlines recommended by the Committee.

52. Section 68.112(b)(5) of our unsuspended rules specifies a type of equipment that hotels and motels can provide to fulfill the hearing aid-compatibility requirements.⁷⁶ The suspended portions of Section 68.112(b)(5) categorize a hotel and motel establishment as small based upon the number of their employees. The Committee determined that the focus of the proposed regulations should be on accessibility, not particular technology, and that the number of guest rooms is a better measure of a hotel's size than is the number of employees. For these reasons, the Committee recommended that we delete references in our existing rules to particular types of technology, and that we not define a hotel or motel as small based upon the number of employees.

53. **Comment Requested** We tentatively conclude that the Committee's recommendations governing hotels and motels, set forth in 68.112(b)(5), in Appendix B, should be adopted as part of the Commission's rules, because it would be in the public interest for travelers with hearing disabilities to have access to telephones in their rooms, particularly in emergencies. We also request comment on the cost of implementing this proposed rule.

⁷⁶ 47 C.F.R. §§ 68.112(b)(5)(ii), (iii).

E. Proposed Rules Regarding Volume Control

1. Committee Recommendations

54. During its negotiations, the Committee determined that discussions and recommendations concerning a volume control feature were within its Charter⁷⁷ and Work Program.⁷⁸ Specifically, the Committee's Work Program required the Committee to analyze technology alternatives to electro-magnetic coil hearing aid-compatibility retrofitting, and to define "Hearing Aid Compatible" and "telephones that should be HAC."⁷⁹ Central to the consensus reached by the Committee was its recommendation that the Commission would consider volume control in the same rulemaking as electro-magnetic coil hearing aid-compatibility.⁸⁰ Prior to considering volume control, the Committee was unable to reach consensus with respect to implementation dates for proposed hearing aid-compatibility requirements. By agreeing to recommend that the Commission propose volume control, however, industry representatives on the Committee were able to come to an agreement with representatives of persons with disabilities on a timetable for hearing aid-compatibility. The Committee also strongly recommended combining the issues of hearing aid-compatibility and volume control into a single proceeding because the Committee sought to provide establishments that would be affected by new hearing aid-compatibility or volume control requirements with sufficient notice of proposed rules, and with the opportunity to submit comments on the two issues within the same proceeding. Finally, the Committee considered the different types of hearing aid users who would benefit from volume control and the electro-magnetic induction coil. The Committee sought to develop a balanced set of recommendations that would serve multiple groups of hearing aid wearers, without unduly favoring one group over another, and determined that a single rulemaking proceeding would best achieve this result.

⁷⁷ See Appendix A.

⁷⁸ Report at Appendix 2.

⁷⁹ Report at Appendix 2, items 3 and 8.

⁸⁰ See 47 C.F.R. § 68.316.

55. The Committee recommended that all newly acquired and all replacement telephones have a volume control feature that permits the user to adjust the level of sound emanating from the handset or headset receiver. The Committee recognized that phased-in accessibility regulation was utilized in the ADA with regard to architectural barriers for persons with disabilities. Pursuant to the ADA, existing structures are not required to comply with accessibility standards. Rather, new and modified facilities must comply with the ADA's accessibility standards.⁸¹ The Committee left to the Commission's consideration, however, the details of implementing this recommendation, and provided the Commission with a sample volume control technical standard and a sample manufacturing and importation requirement.⁸² In reaching its determination to recommend that a volume control requirement be adopted, the Committee strongly advocated that the Commission solicit a full record on the costs and availability of a volume control feature. With regard to implementation, the Committee recommended that the volume control requirements become effective one year after volume control technical standards become effective. The Committee stressed, however, that sufficient inventories of volume control telephones must be available for establishments to comply with the new hearing aid-compatibility and volume control rules.⁸³ The proposed rules for volume control for newly acquired and replacement telephones would apply to workplace, confined setting and hotel and motel establishments.⁸⁴

56. The Committee also recommended that, in the case of newly acquired and replacement telephones, both a volume control feature and electro-magnetic coil compatibility be required. For newly-acquired and replacement telephones, the definition of hearing aid-compatibility would be expanded to include both types of technology, not as alternatives to each other, but in combination with each other. An establishment's decision to replace existing workplace telephones, or to purchase new workplace telephones, however, would remain at the establishment's discretion, with two exceptions: (1) in the case where a telephone is identified as non-hearing aid-compatible (*i.e.*, without an electro-magnetic coil) after January 1, 2000 (or 2005, whichever date is applicable), in which case the telephone must be replaced within fifteen working days, under the rebuttable presumption provision, with a telephone that has both an electro-magnetic coil and a volume control feature;⁸⁵ and (2) in the case where a telephone is voluntarily replaced by a telephone taken from stored inventory that existed at the time of the effective date of proposed Section 68.112(b)(1), and the replacement telephone is

⁸¹ See HACNRC Document 47, ADA Handbook, Analysis of ADA Section 36.402 Alternations. See also 42 U.S.C. § 12183.

⁸² See suggested Sections 68.6 and 68.319, Appendix B.

⁸³ Report at 6, 31.

⁸⁴ See proposed Sections 68.112(b)(1)(E) and (F), 68.112(b)(3)(C) and 68.112(b)(5)(B) in Appendix B.

⁸⁵ See proposed Section 68.112(b)(1)(D) in Appendix B.

identified as non-hearing aid-compatible (i.e., without an electro-magnetic coil), that replacement telephone must be replaced within fifteen working days with a telephone that has an electro-magnetic coil and, one year after the effective date of the volume control rules, with volume control.⁸⁶ In each of these two exceptions, the precipitating event that would require replacement would be the identification of a telephone that lacks an electro-magnetic coil, not the identification of a telephone that lacks volume control.

57. The volume control requirements would not operate retroactively to require volume control on telephones that have been acquired or replaced prior to the date the volume control rules become effective. A telephone replaced after the effective date of the proposed regulations, but before the date that volume control is required, would have to be replaced with a telephone that has electro-magnetic coil compatibility. For example, assuming arguendo, that rules for volume control are released and effective January 1, 1996, and that there is a one year delay, until January 1, 1997, until the volume control rules are applicable to workplace establishments, the requirements would be as follows: (1) If a telephone is voluntarily replaced with a telephone from stored inventory (which inventory existed as of January 1, 1996), and the replacement telephone is identified by someone as not having an electro-magnetic coil, the replacement telephone must be replaced with a telephone with an electro-magnetic coil, if the replacement date is prior to January 1, 1997. (2) In the prior case, beginning January 1, 1997 the replacement telephone must have electro-magnetic coil compatibility and volume control. (3) If a telephone is voluntarily replaced from a source other than stored inventory that existed as of January 1, 1996, and the date is prior to January 1, 1997, the replacement telephone must have electro-magnetic coil compatibility, whether or not an individual has identified the replacement telephone as not having electro-magnetic coil compatibility. (4) In situation number three, as of January 1, 1997, the replacement telephone also must have volume control, whether or not an individual has identified the replacement telephone as not having electro-magnetic coil compatibility, and even though the purchase for the replacement telephone was made prior to January 1, 1977. (5) If, prior to January 1, 2000, a telephone without electro-magnetic coil compatibility is in use, and is not voluntarily replaced, the establishment is not required to replace that telephone, even if someone has identified the telephone as not having electro-magnetic coil compatibility, or as not having volume control. (6) After January 1, 2000 (or 2005, whichever date is applicable), if a telephone in use does not have electro-magnetic coil compatibility, but no one identifies the telephone as lacking electro-magnetic coil compatibility, the establishment does not have to replace the telephone. (7) In the prior situation, if the telephone does have electro-magnetic coil compatibility, but not volume control, the establishment does not have to replace the telephone, even if someone identifies the telephone as not having volume control. (8) In situation number six, if the telephone in use is identified by someone as not having electro-magnetic coil compatibility, the establishment must replace the telephone with a telephone that has both electro-magnetic coil compatibility and volume control.

⁸⁶ See proposed Section 68.112(b)(1)(F) in Appendix B.

2. Statutory Basis for Requiring Volume Control

58. The general language of the HAC Act encourages the application of other technologies, such as volume control, to the challenge of making telephones hearing aid-compatible. The first section of the HAC Act states that "[t]he Commission shall establish such regulations as are necessary to ensure reasonable access to telephone service by persons with impaired hearing."⁸⁷ The breadth of this section is emphasized by the introductory "Findings" to the HAC Act, namely, that

(1) to the fullest extent made possible by technology and medical science, hearing-impaired persons should have equal access to the national telecommunications network; (2) present technology provides effective coupling of telephones to hearing aids used by some severely hearing-impaired persons for communicating by voice telephone; (3) anticipated improvements in both telephone and hearing aid technologies promise greater access in the future; and (4) universal telephone service for hearing-impaired persons will lead to greater employment opportunities and increased productivity.⁸⁸

The Commission also is required to "periodically review the regulations established pursuant to this section,"⁸⁹ and is charged with ensuring that "regulations adopted to implement this section encourage the use of currently available technology and do not discourage or impair the development of improved technology."⁹⁰ The HAC Act strongly encourages the implementation of new technologies that can increase access to the public network by persons with hearing disabilities.

⁸⁷ 47 U.S.C. § 610(a).

⁸⁸ Hearing Aid Compatibility Act of 1988, Pub. L. 100-394, 102 Stat. 976, Section 2 (1988).

⁸⁹ 47 U.S.C. § 610(f).

⁹⁰ *Id.* at § 610(e).

59. The HAC Act describes hearing aid compatible telephones generically as telephones that "provide internal means for effective use with hearing aids that are designed to be compatible with telephones which meet established technical standards for hearing aid compatibility."⁹¹ This definition can accommodate more than one type of technology that is "internal" to the telephone, such as the electro-magnetic induction coil and volume control. At the time of the passage of the HAC Act, the electro-magnetic induction coil was the principal means for providing hearing aid-compatibility, and its technical requirements were then, and are now, specified in our rules.⁹² Neither Congressional committee, however, tied the definition of "compatibility" only to the tele-coil. The House Report stated that the definition in the HAC Act "does not require induction as the sole method of telephone/hearing aid coupling. It is flexible and allows for other methods of compatibility."⁹³ The Senate Report states that "this language is intended to avoid impeding the development of new technology which can provide benefits similar to those currently achieved through inductive means."⁹⁴ In another section, the Senate Report adds:

Telephones may also be "compatible" without a telecoil. Some telephones, for instance, contain internal amplifiers. If the voice signal is sufficiently amplified, the telephone can be placed far enough away from the hearing aid to avoid any "feedback." It is also possible that other means of "compatibility" may be developed in the future.⁹⁵

60. Commission rules do not currently regulate the volume of sound emanating from the handset or headset receiver of a terminal. A volume control feature would make telephones more accessible for persons with hearing disabilities who do not use a hearing aid with a tele-coil, but who use other types of hearing aids, or who do not have a hearing aid. Persons with hearing disabilities have a wide range of disabilities. For a few, the disability is so severe that a hearing aid, with or without a tele-coil, is of no assistance. For a larger percentage of people with hearing disabilities, the disability is relatively less, and volume control, or volume control plus a hearing aid, would meet their needs. Volume control allows many hearing-aid users to adjust the sound coming from a receiver to accommodate the capabilities of their individual hearing aid. The Committee determined that volume control would benefit hearing aid users and other individuals with hearing loss, as well as many individuals with

⁹¹ 47 U.S.C. § 610(b)(1)(B). This definition is adopted as the definition of hearing aid-compatible telephones in our rules at Section 68.4.

⁹² 47 C.F.R. § 68.316.

⁹³ House Report at 12.

⁹⁴ Senate Report at 10.

⁹⁵ Id. at 2.

speech disabilities.⁹⁶ Volume control also would benefit telephone users who have a need for amplification to overcome high-noise environments.⁹⁷

61. In light of the foregoing, we propose volume control rules that require workplace, confined setting and hotel and motel establishments to provide volume control for replacement or new telephones, in certain circumstances, and that prescribe technical, manufacturing and importation requirements for those telephones.

⁹⁶ Report at 32.

⁹⁷ Id.

3. Implementation

a. Technical Standard

62. **Discussion** The Committee did not have the time or resources to review fully the technical requirements for a volume control standard. Therefore, the Committee submitted language for a proposed rule based upon the Architectural and Transportation Barriers Compliance Board's (ATBCB) volume control standard for public telephones.⁹⁸ The Committee modified the ATBCB standard so that it is clear that the proposed provision refers to the volume of sound received through a handset or headset. The Committee also modified the ATBCB language to make the proposed regulation more technically accurate.⁹⁹

⁹⁸ *Id.* The ATBCB language reads: "Volume controls capable of a minimum of 12 dbA and a maximum of 18 dbA above normal [the telephone's normal telephone volume level], shall be provided in accordance with 4.1.3 [section of the ATBCB's Guidelines, designating which public telephones must have volume control]. If an automatic reset [of the gain level, after a telephone call is terminated, back to the nominal gain level] is provided then 18 dbA may be exceeded." *Id.* See Americans With Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG), at § 4.31.5, 56 FR 35455, at § 4.1.3 (17)(b)(pp. 35615-35616) and § 4.30 (2)(p. 35660) and § 4.31.5 (p. 35661), July 26, 1991. The guidelines are available through the United States Architectural and Transportation Barriers Compliance Board, 1331 F Street, N.W., Suite 1000, Washington, D.C. 20004-1111, 202/272-5434.

⁹⁹ In particular, the Committee substantially adopted the language in Committee Document HACNRC-56.1, a February 26, 1994 letter from the Telecommunications Industry Association (TIA) to the ATBCB. In that letter, TIA stated that the current ATBCB section "describes its amplified receive acoustic sound output requirements in terms of dbA units of measurement." TIA states, however, that dbA units are not generally used for Objective Loudness rating measurements, and that it believes that "amplified Receive Objective Loudness Rating ('ROLR') in dB units was intended." Since HACNRC-56.1 was submitted to the Committee, the TIA TR-41.3 Subcommittee has further modified the language of the standard, and those modifications are included in suggested Section 68.319 in Appendix B.

63. The resulting revised standard applies a weighted average across the frequency range of a telephone's voice frequency band. This standard has been shown to correlate well with human perception of the loudness of speech on a telephone connection.¹⁰⁰ As a means of measuring loudness, the proposed standard uses Receive Objective Loudness Rating (ROLR), a rating system for expressing the "receive response" of a telephone.¹⁰¹ In proposed Section 68.317, ROLR is used to measure dB-gain, which is a numerical rating for loudness. This methodology of rating voice loudness has been widely used in the telecommunications industry for at least twenty years, and the calculation procedures are included in Section 6 of Standard 661 of the Institute of Electrical and Electronics Engineers (IEEE).¹⁰² The use of ROLR as a measure of loudness encourages equal levels of gain to be applied across the entire frequency range, because the contribution to apparent volume from each octave band, or fraction of an octave band, is given equal weight in determining the overall loudness of the received signal.¹⁰³ Application of this standard should help persons with hearing disabilities who may have hearing problems at different frequencies of the spectrum of the telephone frequency band.

¹⁰⁰ J.L. Sullivan, "A Laboratory System for Measuring Loudness Loss of Telephone Connections," Bell System Technical Journal, Vol. 50, No. 8, October 1971, pp. 2663-2739.

¹⁰¹ The "receive response" of a telephone is defined at paragraph 4.1.2.1 of ANSI/EIA-470-A-1987 as "a measure of (the telephone's) electrical-to-acoustic transfer characteristics. To define the receive response, the acoustic output or loudness level, the frequency response, the regulation over a given set of loop conditions and the distortion are specified." ROLR is discussed at Paragraphs 4.1.2.2 and 4.1.2.3.1. Paragraph 4.1.2 of ANSI/EIA-470-A-1987 is stated at Appendix D.

¹⁰² IEEE Standard 661-1979 (R1992), "Method for Determining Objective Loudness Ratings of Telephone Connections."

¹⁰³ It should be noted that loudness ratings such as ROLR are expressed in dB of loudness loss. Thus, more positive values of ROLR represent lower volume levels. For example, a telephone may have a ROLR of 48 dB with its receive volume control set to its nominal unamplified level. If it provides 12 dB of gain at its maximum volume control setting, it will have an ROLR of 36 dB.

64. In order to reduce the volume of material published in the Federal Register and the Code of Federal Regulations, we propose to incorporate by reference¹⁰⁴ into proposed Section 68.317 a standard of the American National Standards Institute (ANSI).¹⁰⁵ The standard defines ROLR. To update our rules with minor changes to this standard, we propose that the Commission delegate to the Chief, Common Carrier Bureau, the authority to issue a public notice of the minor changes. We also propose that the Commission delegate to the Chief, Common Carrier Bureau, the authority to adopt the minor changes into our rules, if the comments responding to the public notice are favorable. More significant modifications to the standards would continue to require a formal rulemaking proceeding.

65. The Committee stressed that, in considering a technical standard for volume control, it believed the focus should be on the end result. Therefore, the Committee suggested that whatever technical standard is adopted, the standard should be one that can be applied to different kinds of equipment at a variety of locations in the network. In some cases, Committee members indicated, the volume control mechanism could be in the terminal equipment, either in the body of the telephone or in the receiver handset or headset. In other cases, the mechanism might be placed in Private Branch Exchange (PBX) equipment or in network switches. Other locations for the technology might also be possible. In its recommendations, the Committee suggested a one year delay in the requirement that newly acquired and replacement telephones have volume control.¹⁰⁶ However, in making this suggestion, the Committee also expressed the opinion that newly acquired and replacement telephones should not be required to have volume control until Commission rules and specifications regarding volume control were in place. The Committee further stated that any proposed rules should take into account the availability from manufacturers of volume control, and provide a transition period for manufacturers to comply with volume control requirements. The Committee's recommendation included a one-year phase-in period, to allow manufacturers to manufacture the specified equipment, and to allow wholesalers and retailers to distribute and stock the required equipment. Similarly, it would allow workplace, confined setting and hotel and motel establishments the same one year period to order, purchase and install the required equipment.

¹⁰⁴ See 5 U.S.C. § 552(a) and 1 C.F.R. Part 1. See also Office of the Federal Register, National Archives and Records Administration, Federal Register Drafting Handbook, 37-39 (1991). As proposed Section 68.317(d) indicates, the Commission would need approval of the Director of the Federal Register before any such incorporation by reference becomes effective.

¹⁰⁵ See proposed Section 68.317 in Appendix B. See also Paragraph 4.1.2 of ANSI/EIA-470-A-1987 in Appendix D. Copies of paragraph 4.1.2 of ANSI/EIA-470-A-1987 may be purchased from the American National Standards Institute (ANSI), Sales Department, 11 West 42nd Street, 13th Floor, New York, NY 10036, (212) 642-4900.

¹⁰⁶ See proposed Sections 68.112(b)(1)(E) and (F), 68.112(b)(3)(C), and 68.112(b)(5)(B), Appendix B.

66. We accept the Committee's suggestion to consider the adoption of rules on volume control. Several technical issues require resolution, however. A technical standard to establish volume control compatibility between hearing aids and telephones should consider the potential problem of "feedback" between hearing aids and telephones. Some individuals with hearing aids encounter problems of feedback between their hearing aid and a telephone receiver. Both telephones and hearing aids contain microphones and amplifiers, and the electronic signals of these instruments can conflict and cause a characteristic feedback noise. Any technical specification considered by the Commission should be designed to minimize or prevent feedback noise.

67. To promote the potential public interest benefits that might result from a volume control requirement, we seek comment on proposed rules that would require volume control in the case of replacement and newly acquired telephones, and that would define the technical standards for volume control.¹⁰⁷

b. Manufacturing and Importation

68. **Discussion** The Committee also adopted a statement of principle regarding volume control, asking the Commission to consider adopting rules concerning the manufacture and importation of hearing aid-compatible telephones with volume control. Such rules would be similar to those governing the manufacture and importation of telephones that meet the current definition of hearing aid-compatibility and would cover all wireline telephones, except secure telephones.¹⁰⁸

69. A change in the Commission's rule regulating the manufacturing and importation of telephones for use in the United States is essential for a volume control requirement to be implemented by workplace, confined setting and hotel and motel establishments required to provide this type of telephone. The current rule requires that such telephones be hearing aid-compatible, but the current definition of hearing aid-compatible does not require that the telephone have a volume control feature.¹⁰⁹ The definition of hearing aid-compatibility sets the requirements and standards under which hearing aid-compatible telephones are manufactured in the United States. Without a change in the definition of hearing aid-compatible and a modified manufacturing and importation requirement, complying telephones would not be manufactured, and workplace, confined setting and hotel and motel

¹⁰⁷ See proposed rule Sections 68.6, 68.112(1)(E) and (F), 68.112(3)(C), 68.112(5)(B) and 68.317 in Appendix B.

¹⁰⁸ Secure telephones are defined as "telephones that are approved by the United States Government for the transmission of classified or sensitive voice communications" at Section 68.3, and are exempted from the hearing aid-compatibility requirements by the HAC Act. 47 U.S. C. §§ 610(b)(2)(A), 610(b)(4)(D).

¹⁰⁹ See 47 C.F.R. §§ 68.4, 68.316.

establishments would not be able to acquire telephones that comply with volume control requirements. The Committee limited its volume control recommendations¹¹⁰ to newly acquired and replacement telephones because this strategy phases volume controlled telephones into the embedded base of telephones over time as replacements and new acquisitions occur in the normal course of commerce. The HAC Act required¹¹¹ that telephones manufactured or imported for use in the United States more than a year after the HAC Act was enacted had to be hearing aid-compatible, then defined by the Commission as incorporating an electro-magnetic induction coil that is compatible with hearing aid tele-coils.¹¹² Proposed Section 68.6 would impose as an additional manufacturing and importation requirement that wireline and cordless hearing aid-compatible telephones include a volume control feature. Telephones used with public mobile services and telephones used with private radio services would be excluded from the coverage of proposed Section 68.6.¹¹³

70. **Comment Requested** We seek comment on proposed rules that would require newly acquired and replacement telephones in workplace, confined setting and hotel and motel establishments to have volume control,¹¹⁴ in addition to electro-magnetic coil hearing aid-compatibility. We seek comment on the estimated cost to manufacturers to make telephones that comply with our proposals. We specifically seek comment on how the proposed rules would affect manufacturing costs, on whether the proposed rules would substantially raise the costs of telephones, and on how the proposed rules would affect manufacturers' inventory of telephones. We seek comment on the benefits of volume control to all telephone users, including persons with and without hearing disabilities. We seek comment on what equipment with volume control is available today and whether newly acquired and replacement telephones are the best means of phasing in volume control requirements. Additionally, we seek comment on whether the requirement for volume control in replacement telephones also should include telephones, except headsets, in emergency locations, such as in elevators, highways and tunnels for automobiles, railways or subways, and in workplace common areas, such as in libraries and reception areas.¹¹⁵

¹¹⁰ See proposed rule Sections 68.112(1)(E) and (F), 68.112(3)(C), and 68.112(5)(B) in Appendix B.

¹¹¹ 47 U.S.C. § 610(b)(1)(B).

¹¹² 47 C.F.R. § 68.316.

¹¹³ See proposed Section 68.6 in Appendix B.

¹¹⁴ See proposed Sections 68.112(1)(E) and (F), 68.112(3)(C), and 68.112(5)(B) in Appendix B.

¹¹⁵ See proposed Section 68.112(b)(1)(A) in Appendix B.

71. We seek comment on our proposal establishing technical standards for volume control that apply a weighted average across the frequency range of a telephone's voice frequency band.¹¹⁶ We also seek comment on our proposal that would require telephones manufactured or imported for use in the United States beginning one year after the adoption of technical standards for volume control to include such volume control.¹¹⁷ We request specific comment on the feasibility of a one year phase-in period for manufacturers, and for wholesalers, retailers and other distributors to provide the product to purchasers. We also ask commenters to discuss potential problems of "feedback" between telephone receivers with volume control and hearing aids (both those with and without a tele-coil) and to recommend technical solutions if feedback poses a problem. We also specifically seek comment on proposed Section 68.317(b) regarding the appropriate complex impedance to simulate the specified lengths of unloaded cable. We understand that a complex impedance standard is under development by industry and, if so, we seek comment on such a standard and on when such a standard might be approved by ANSI. We also seek comment on the proposal to delegate to the Chief, Common Carrier Bureau, the authority to give public notice of minor changes to the ANSI standards, and, if comments on the minor changes are favorable, to adopt the minor changes into our rules.

72. We seek comment on whether, under the proposed technical standard, it would be possible to locate the volume control feature in places other than in the telephone itself, such as in the network, in a PBX, or in other terminal equipment. If not, we seek comment on alternative technical standards that would accommodate these alternative locations for the volume control feature. We seek comment on how a telephone user would control receiver volume, even though the volume control technology is not located in the receiver. We also seek comment on how volume control technology could be incorporated into headsets that are required to be hearing aid-compatible, and whether that technology would be located in the headset or in the telephone console base.

¹¹⁶ See proposed Section 68.317 in Appendix B.

¹¹⁷ See proposed Section 68.6 in Appendix B.

F. Proposed Rule Regarding Equipment Labelling

73. **Discussion** As discussed above,¹¹⁸ the Commission's rules currently permit a manufacturer to display on terminal equipment either the serial number or the date of manufacture. If the date is not stamped, and if, for whatever reason, the serial number cannot be traced to the manufacturer's records, an establishment may be unable to determine if a particular telephone is hearing aid-compatible. Therefore, the Committee recommended that Section 68.300(b)(3)¹¹⁹ be changed to require the display of the date of manufacture, and to make the display of the serial number optional.

74. **Comment Requested** We tentatively conclude that Section 68.300(b)(3) should be changed to read that a terminal's identifying information shall include "Date of manufacture, and, at the registrant's option, serial number,"¹²⁰ because having the date of manufacture appear on terminal equipment might help enable an establishment to determine whether the equipment is hearing aid-compatible. We request comment on this proposed change. We also seek comment on whether we should consider requiring manufacturers to stamp or emboss a symbol or set of letters, such as "HAC," on terminal equipment in addition to, or as an alternative of, the date of manufacture.

G. Additional Committee Recommendations

75. **Discussion** In addition to recommending rule changes, the Committee recommended that the Commission take several actions that the Committee believed would facilitate the implementation of those rule changes. These include the following:¹²¹

- That the Commission issue a press release, hold a press conference about the Committee's Report and recommendations, and distribute the Report electronically.
- That the Commission develop a standard consumer information package about the hearing aid-compatibility rules, including a question-and-answer section, to be disseminated after the new rules are released.
- That the Commission encourage the development of information that could be included with hearing aid packaging.
- That the Commission encourage voluntary public signage to indicate the

¹¹⁸ See paragraph 29, *infra*.

¹¹⁹ See proposed Section 68.300(b)(3), Appendix B.

¹²⁰ See proposed Section 68.300 in Appendix B.

¹²¹ See Report at 33.

location of hearing aid-compatibility telephones in workplace establishments.¹²²

76. The Commission has already taken several of the steps the Committee recommended. Upon the release of the Committee's Report, a press release was issued.¹²³ Commission staff presented the Report¹²⁴ to the Commission at the Commission's August 3, 1995, meeting, and a press conference followed the Commission meeting. Finally, the Report is available on the Internet.

77. **Comment Requested** We tentatively conclude that we should implement the Committee's remaining recommendations, and we seek comment on the most efficient way to accomplish this implementation. For example, we seek comment on what information should be included in hearing aid packaging, how the Commission might implement a voluntary signage program for workplace establishments, and what additional consumer education initiatives might be effective.

H. Amendments to Other Sections For Clarification

78. In light of the Committee's recommendation that hearing aid-compatibility be defined, in some circumstances, by both Sections 68.316 (electro-magnetic coil compatibility) and proposed Section 68.317 (volume control), we propose amendments to existing sections of Parts 64 and 68 that discuss hearing aid-compatibility. These amendments specify the definition of hearing aid-compatibility being referred to in the existing section. These amendments are stated in Appendix B under proposed Sections 64.607, 68.3, 68.4, 68.112(b)(4), 68.112(c), 68.224, and 68.316.

79. **Comment Requested** We tentatively conclude that the proposed amendments to Sections 64.607, 68.3, 68.4, 68.112(b)(4), 68.112(c), 68.112 and 68.316 should be made for clarification. We request comment on these proposed amendments.

¹²² See Committee document HACNRC-43 for signage recommendations by the International Telecommunication Union.

¹²³ FCC Press Release, Report No. CC-95-42, August 3, 1995, "Commission Releases Negotiated Committee Recommendation for Telephone Hearing Aid Compatibility"; see also FCC Press Release, Report No. DC 95-90, June 22, 1995, "Negotiated Rulemaking Committee Reaches Full Consensus on Proposed FCC Rules for Wireline Telephone Hearing Aid Compatibility and Volume Control."

¹²⁴ Final Report of the Federal Communication Commission Hearing Aid Compatibility Negotiated Rulemaking Committee, CC Docket No. 87-124, August, 1995.

IV. CONCLUSION

80. The Hearing Aid Compatibility Negotiated Rulemaking Committee reached a consensus on its recommendations to the Commission. The Committee's recommendations strike a balance among the many interests represented on the Committee. If adopted by the Commission, the recommendations would appear to increase significantly the access to telecommunications by persons with hearing disabilities, and move the Commission significantly further towards its goal to fully implement the HAC Act. The Committee's recommendations are submitted for public comment in this NPRM as rules proposed by the Commission. We request comment on these proposed rules, and encourage participation by interested parties.

V. PROCEDURAL MATTERS

A. Ex Parte

81. This NPRM is a non-restricted notice and comment rulemaking proceeding. Ex parte presentations are permitted, except during the Sunshine Agenda period, provided they are disclosed as provided in the Commission's Rules. See generally 47 C.F.R. Sections 1.1202, 1.1203, and 1.1206(a).

B. Initial Regulatory Flexibility Analysis

82. As required by Section 603 of the Regulatory Flexibility Act, the Commission has prepared an Initial Regulatory Flexibility Analysis ("IRFA") of the expected impact on small entities of the proposals suggested in this document. The IRFA is set forth in Appendix C. Written public comments are requested in the IRFA. These comments must be filed in accordance with the same filing procedures as other comments in this proceeding, but they also must have a separate and distinct heading designating them as responses to the Initial Regulatory Flexibility Analysis. The Secretary shall send a copy of the NPRM, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act. Pub. L. No. 96-354, 94 Stat. 1164, 5 U.S.C. Section 601 et seq (1981).

C. Initial Paperwork Reduction Act of 1995 Analysis

83. This NPRM contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this NPRM, as required by the Paperwork Reduction Act of 1995, Pub. L. 104-13. Public and agency comments are due at the same time as other comments on this NPRM; OMB comments are due 60 days from date of publication of this NPRM in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission,

including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

D. Notice and Comment Provisions

84. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. Sections 1.415 and 1.419, interested parties may file comments on or before January 12, 1996, and reply comments are due on or before February 16, 1996. To file formally in this proceeding, you must file an original and four copies of all comments, reply comments, and supporting comments. If you want each Commissioner to receive a personal copy of your comments, you must file an original plus nine copies. You should send comments and reply comments to the Office of the Secretary, Federal Communications Commission, Washington, D.C. 20554. Comments and reply comments will be available for public inspection during regular business hours in the FCC Reference Center (Room 239) of the Federal Communications Commission, 1919 M Street, N.W., Washington, D.C. 20554.

85. Written comments by the public on the proposed and/or modified information collections are due at the same time as other comments on this NPRM. Written comments must be submitted by the Office of Management and Budget (OMB) on the proposed and/or modified information collections on or before 60 days after date of publication in the Federal Register. In addition to filing comments with the Secretary, a copy of any comments on the information collections contained herein should be submitted to Dorothy Conway, Federal Communications Commission, Room 234, 1919 M Street, N.W., Washington, DC 20554, or via the Internet to dconway@fcc.gov and to Timothy Fain, OMB Desk Officer, 10236 NEOB, 725 - 17th Street, N.W., Washington, DC 20503 or via the Internet to fain_t@al.eop.gov.

VI. ORDERING CLAUSE

86. Accordingly, pursuant to Sections 1, 201-205, 218 of the Communications Act of 1934, as amended, 47 U.S.C 151, 154, 201-205, 218, IT IS ORDERED that this NOTICE OF PROPOSED RULEMAKING is hereby provided to amend Sections 64.607, 68.3, 68.4, 68.112 , 68.224, 68.300 and 68.316, and to add Sections 68.6 and 68.317, of the Commission's rules, 47 C.F.R. §§ 64.607, 68.3, 68.4, 68.6, 68.112, 68.224, 68.300, 68.316 and 68.317, as indicated above and in Appendix B hereof.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton
Acting Secretary

Appendix A

CHARTER FOR THE NEGOTIATED RULEMAKING COMMITTEE

A. The Committee's Official Designation

The official designation of the advisory committee will be the "Hearing Aid Compatibility Negotiated Rulemaking Committee" (Committee).

B. The Committee's Objective and Scope of its Activity

The purpose of the Committee is to provide recommendations to the Federal Communications Commission (FCC) to be used in the formulation of requirements for hearing aid compatible (HAC) telephones in work places, hospitals, certain other health care facilities, prisons, hotels and motels. Included among the recommendations will be one on whether to lift the suspension of enforcement of Sections 68.112(b)(1), (3), and (5) of the Commission's Rules. 47 C.F.R. §§ 68.112(b)(1), (3), (5). Those sections require that all telephones in all work places, hospitals, certain other health care facilities, prisons, hotels and motels be hearing aid compatible by May 1, 1993 for establishments with 20 or more employees and by May 1, 1994 for establishments with fewer than 20 employees. The scope of the activity of the Committee will include all steps necessary to assemble data, perform analyses, and provide advice to the FCC concerning all of the issues required to address the regulation of HAC telephones, as discussed in the Commission's public notice of November 7, 1994, FCC 94-280.

C. Period of Time Necessary for the Committee to Carry Out Its Purpose

The Committee will require 65 days to carry out its purpose.

D. Official to Whom the Committee Reports

Chief, Common Carrier Bureau, Federal Communications Commission.

E. Agency Responsible for Providing Necessary Support

The Federal Communications Commission will provide the necessary staff support for the Committee. The Federal Communications Commission will provide facilities needed to conduct the meetings, if the Commission has meeting facilities available. Otherwise, private sector members will provide facilities. Private sector members of the Committee will serve without any government compensation, and will not be entitled to travel expenses or per diem

subsistence allowance. Committee members may choose to support a facilitator for the Committee.

F. Description of the Duties for Which the Committee is Responsible

The duties of the Committee will be to gather and discuss information necessary to develop recommendations to the FCC for requirements for hearing aid compatible (HAC) telephones in work places, hospitals, certain other health care facilities, prisons, hotels and motels.

G. Estimated Operating Costs in Dollars and Staff Years

Estimated staff years that will be expended by the Committee are 0.75 for the FCC staff and 1.5 for the private sector and other governmental representatives. The estimated cost to the FCC of operating the Committee is \$79,000, which includes FCC staff time and funds for training Committee members on negotiated rulemaking and consensus-building procedures.

H. Estimated Number and Frequency of Committee Meetings

Six meetings of the full Committee, with additional meetings of informal subcommittees, are expected.

I. Committee's Termination Date

The Committee will terminate 65 days from date of charter approval and/or by September 30, 1995.

J. Date Original Charter Filed

April 11, 1995.

Appendix B

PROPOSED RULES

Part 64 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 64 - MISCELLANEOUS RULES RELATING TO COMMON CARRIERS

1. The authority citation for Part 64 continues to read as follows:

AUTHORITY: Sec. 4, 48 Stat. 1066, as amended; 47 U.S.C. 154, unless otherwise noted. Interpret or apply secs. 201, 218, 226, 228, 48 Stat. 1070, as amended, 1077; 47 U.S.C. §§ 201, 218, 226, 228, unless otherwise noted.

2. Section 64.607 is proposed to be amended to read as follows:

§ 64.607 Provision of hearing aid-compatible telephones by exchange carriers

In the absence of alternative suppliers in an exchange area, an exchange carrier must provide a hearing aid-compatible telephone, as defined in § 68.316, and provide related installation and maintenance services for such telephones on a detariffed basis to any customer with a hearing disability who requests such equipment or services.

Part 68 of Title 47 of the Code of Federal Regulations is proposed to be amended as follows:

PART 68 - CONNECTION OF TERMINAL EQUIPMENT TO THE TELEPHONE NETWORK

1. The authority citation for Part 68 continues to read as follows:

AUTHORITY: Secs. 1, 4, 5, 201-5, 208, 215, 218, 226, 227, 303, 313, 314, 403, 404, 410, 602 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154, 155, 201-5, 208, 215, 218, 226, 227, 303, 313, 314, 403, 404, 410, 602.

2. Section 68.3 is proposed to be amended by adding the following definition to the terms used in Part 68:

* * * * *

Hearing aid-compatible: Except as used at §§ 68.4(a)(3) and 68.414 of these rules, the terms hearing aid-compatible or hearing aid-compatibility are used as defined in § 68.316, unless it is specifically stated that hearing aid-compatibility volume control, as defined in § 68.317, is intended or is included in the definition.

3. Section 68.4 is proposed to be amended to read as follows:

§ 68.4 Hearing aid-compatible telephones.

(a)(1) Except for telephones used with public mobile services, telephones used with private radio services, and cordless and secure telephones, every telephone manufactured in the United States (other than for export) or imported for use in the United States after August 16, 1989, must be hearing aid-compatible, as defined in § 68.316. Every cordless telephone manufactured in the United States (other than for export) or imported into the United States after August 16, 1991, must be hearing aid-compatible, as defined in § 68.316.

(2) Unless otherwise stated and except for telephones used with public mobile services, telephones used with private radio services and secure telephones, every telephone listed in § 68.112 must be hearing aid-compatible, as defined in § 68.316.

* * * * *

4. A new Section 68.6 is proposed to be added as follows:

§ 68.6 Telephones with volume control.

As of one year after the adoption by the Commission of this section, all telephones, including cordless telephones, as defined in Section 15.3(j) of these rules, manufactured in the United States (other than for export) or imported for use in the United States, must have volume control in accordance with Section 68.317 of these rules. Secure telephones, as defined by Section 68.3 of these rules, are exempt from this section, as are telephones used with public mobile services or private radio services.

5. Section 68.112 is proposed to be amended by revising paragraphs (b)(1), (b)(3), (b)(4) and (b)(5), and by revising paragraph (c), to read as follows:

(b) Emergency use telephones. Telephones "provided for emergency use" include the following:

(1) (A) Telephones, except headsets, in places where a person with a hearing disability might be isolated in an emergency, including, but not limited to, elevators, highways, and tunnels for automobile, railway or subway, and workplace common areas. Note: Examples of workplace common areas include libraries, reception areas and similar locations where employees are reasonably expected to congregate.

(B) Non-common area workplace telephones, except headsets, in workplaces are required to be hearing aid-compatible, as defined in Section 68.316, by January 1, 2000, except for:

(i) Those located in establishments with fewer than fifteen employees;
and

(ii) Telephones purchased between January 1, 1985 through December 31, 1989, which are not required to be hearing aid-compatible, as defined in Section 68.316, until January 1, 2005.

(C) Telephones, including headsets, made available to an employee with a hearing disability for use by that employee in his or her employment duty, shall, however, be hearing aid-compatible, as defined in Section 68.316.

(D) As of January 1, 2000 or January 1, 2005, whichever date is applicable, there shall be a rebuttable presumption that all telephones located in the workplace are hearing aid-compatible, as defined in Section 68.316. This presumption may be rebutted by any person who identifies a telephone as non-hearing aid-compatible; such telephone must be replaced with a hearing aid-compatible telephone, as defined in Section 68.316, including, after one year after the effective date of amended Section 68.112(b), with volume control, as defined in Section 68.317, within fifteen working days.

(E) Telephones, except headsets (but not excluding headsets furnished under Section 68.112(b)(1)(C)), that are purchased, or replaced with newly acquired telephones, must be:

(i) Hearing aid-compatible, as defined in Section 68.316, after the effective date of amended Section 68.112 (b)(1);

(ii) Hearing aid-compatible, including volume control, as defined in Sections 68.316 and 68.117, after one year after the effective date of amended Section

68.112(b).

(F) When a telephone under Subsection (E) is replaced with a telephone from inventory existing before the effective date of amended Section 68.112(b)(1), any person may make a bona fide request that such telephone be hearing aid-compatible, as defined in Section 68.316, and after one year after the effective date of amended Section 68.112(b)(1), with volume control, as defined in Section 68.317. The telephone shall be provided within fifteen working days.

(G) During the period from the effective date of amended Section 68.112(b)(1) until the applicable date of January 1, 2000 or January 1, 2005, workplaces of fifteen or more employees also must provide and designate telephones for emergency use by employees with hearing disabilities through one or more of the following means:

(i) By having at least one coin-operated telephone, one common area telephone or one other designated hearing aid-compatible telephone on every floor of the workplace; or

(ii) By providing wireless telephones that meet the definition for hearing aid-compatible for wireline telephones, as defined in Section 68.316, for use by employees in their employment duty outside common areas and outside the offices of employees with hearing disabilities.

* * * * *

(3) (A) Telephones needed to signal life threatening or emergency situations in confined settings, including but not limited to, rooms in hospitals, residential health care facilities for senior citizens, and convalescent homes.

(B) A telephone that is hearing aid-compatible, as defined in Section 68.316, is not required:

(i) Until one year after the effective date of amended Section 68.112(b)(3), for establishments with fifty or more beds, unless replaced before that time; and

(ii) Until two years after the effective date of amended Section 68.112(b)(3), for all other establishments with fewer than fifty beds, unless replaced before that time.

(C) Telephones that are purchased, or replaced with newly acquired telephones, must be:

(i) Hearing aid-compatible, as defined in Section 68.116, after the

effective date of amended Section 68.112(b)(3);

(ii) Hearing aid-compatible, including volume control, as defined in Sections 68.116 and 68.117, after one year after the effective date of amended Section 68.112(b)(3).

(D) Unless a telephone in a confined setting is replaced pursuant to Section 68.112(b)(3)(C), a hearing aid-compatible telephone shall not be required if:

(i) A telephone is both purchased and maintained by a resident for use in that resident's room in the establishment; or

(ii) The confined setting has an alternative means of signalling life-threatening or emergency situations that is available, working and monitored.

* * * * *

(4) All credit card operated telephones, whether located on public property or in a semipublic location (e.g. drugstore, gas station, private club), unless a hearing aid-compatible (as defined in § 68.316) coin-operated telephone providing similar services is nearby and readily available. However, regardless of coin-operated telephone availability, all credit card operated telephones must be made hearing aid-compatible, as defined in § 68.316, when replaced, or by May 1, 1991, which ever comes sooner.

* * * * *

(5) (A) All telephones in hotel and motel guest rooms, and in any other establishment open to the general public for the purpose of overnight accommodation for a fee, are required to be hearing aid-compatible, as defined in Section 68.316.

(i) Those located in establishments with eighty or more guest rooms, telephones that are hearing aid-compatible, as defined in Section 68.316, are not required until two years after the effective date of amended Section 68.112(b)(5); and

(ii) For establishments with fewer than eighty guest rooms, telephones that are hearing aid-compatible, as defined in Section 68.316, are not required until three years after the effective date of amended Section 68.112(b)(5).

(B) Anytime after the effective date of amended Section 68.112(b)(5), if a hotel or motel room is renovated or newly constructed, or the telephone in a hotel or motel room is replaced or substantially, internally repaired, the telephone in that room must be:

(i) Hearing aid-compatible, as defined in Section 68.316, after the effective date of amended Section 68.112(b)(5);

(ii) Hearing aid-compatible, including volume control, as defined in Sections 68.316 and 68.317, after one year after the effective date of amended Section 68.112(b)(5).

(C) The telephones in at least twenty percent of the guest rooms in a hotel or motel must be hearing aid-compatible, as defined in Section 68.316, upon the effective date of amended Section 68.112(b)(5).

(D) Notwithstanding the requirements of Section (b)(5)(A), hotels and motels for which telephones were purchased during the period January 1, 1985 through December 31, 1989 may provide telephones that are hearing aid-compatible, as defined in Section 68.316, in guest rooms according to the following schedule:

(i) The telephones in at least twenty percent of the guest rooms in a hotel or motel must be hearing aid-compatible, as defined in Section 68.316, upon the effective date of amended Section 68.112(b)(5);

(ii) The telephones in at least twenty-five percent of the guest rooms in a hotel or motel must be hearing aid-compatible, as defined in Section 68.316, by three years after the effective date of amended Section 68.112(b)(5); and

(iii) The telephones in one-hundred percent of the guest rooms in a hotel or motel must be hearing aid-compatible, as defined in Section 68.316, by January 1, 2000 for establishments with eighty or more guest rooms, and by January 1, 2003 for establishments with fewer than eighty guest rooms.

* * * * *

(c) *Telephones frequently needed by the hearing impaired.* Closed circuit telephones, i.e., telephones which cannot directly access the public switched network, such as telephones located in lobbies of hotels or apartment buildings; telephones in stores which are used by patrons to order merchandise; telephones in public transportation terminals which are used to call taxis or to reserve rental automobiles, need not be hearing aid-compatible, as defined in § 68.316, until replaced.

* * * * *

6. Section 68.224 is proposed to be amended at subsection (a) to read as follows:

§ 68.224 Notice of non-hearing aid-compatibility.

Every non-hearing aid compatible telephone offered for sale to the public on or after August 17, 1989, whether previously-registered, newly registered or refurbished, shall:

(a) Contain in a conspicuous location on the surface of its packaging a statement that the telephone is not hearing aid-compatible, as is defined in §§ 68.4(a)(3) and 68.316 of these rules, or if offered for sale without a surrounding package, shall be affixed with a written statement that the telephone is not hearing aid-compatible, as defined in §§ 68.4(a)(3) and 68.316 of these rules; and

(b) * * *

* * * * *

7. Section 68.300 is proposed to be amended by revising paragraph (b)(3) to read as follows:

§ 68.300 - Labelling requirements.

* * * * *

(b) * * *

(3) Date of manufacture, and, at the registrant's option, serial number.

* * * * *

8. Section 68.316 is proposed to be amended in its title and its introductory paragraph to read as follows:

§ 68.316 Hearing aid-compatibility magnetic field intensity requirements: technical standards.

A telephone handset is hearing aid-compatible for the purposes of this section of Part 68 if it complies with the following standard, published by Electronic Industries Association, copyright 1983, and reproduced by permission of Electronic Industries Association:

* * * * *

9. A new Section 68.317 is proposed to be added as follows:

§ 68.317 Hearing aid compatibility volume control: technical standards.

(a) A telephone complies with the Commission's volume control requirements if the telephone is equipped with a receive volume control that provides, through the receiver in the handset or headset of the telephone, 12 dB of gain minimum and up to 18 dB of gain maximum, when measured in terms of Receive Objective Loudness Rating (ROLR), as defined in paragraph 4.1.2 of ANSI/EIA-470-A-1987. The 12 dB of minimum gain must be achieved without significant clipping of the test signal.

(b) The ROLR shall be determined over the frequency range from 300 to 3300 HZ for short, average, and long loop conditions represented by 0, 2.7, and 4.6 km of 26 WG nonloaded cable, respectively. The specified length of cable will be simulated by a complex impedance. The input level to the cable simulator shall be -10 dB with respect to 1 V open circuit from a 900 ohm source.

(c) The ROLR for each loop condition shall first be determined with the receive volume control at its normal unamplified level. The minimum volume control setting shall be used for this measurement unless the manufacturer identifies a different setting for the nominal volume level. The ROLR shall then be determined with the receive volume control at its maximum volume setting. Since ROLR is a loudness rating value expressed in dB of loss, more positive values of ROLR represent lower receive levels. Therefore, the ROLR value determined for the maximum volume control setting should be subtracted from that determined for the nominal volume control setting to determine compliance with this requirement. The 18 dB of receive gain may be exceeded provided that the amplified receive capability automatically resets to nominal gain when the telephone is caused to pass through a proper on-hook transition in order to minimize the likelihood of damage to individuals with normal hearing.

(d) This incorporation by reference of paragraph 4.1.2 of ANSI/EIA-470-A-1987 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of this publication may be purchased from the American National Standards Institute (ANSI), Sales Department, 11 West 42nd Street, 13th Floor, New York, NY 10036, (212) 642-4900. Copies also may be inspected during normal business hours at the following locations: Federal Communications Commission, 2025 M Street, N.W., Public Reference Room, Room 6218, Washington, D.C. 20554; and Office of the Federal Register, 800 N. Capitol Street, N.W., suite 700, Washington, D.C. 20002.

APPENDIX C

INITIAL REGULATORY FLEXIBILITY ANALYSIS

Reason for Action: This Notice of Proposed Rulemaking responds to the recommendations of the Hearing Aid Compatibility Negotiated Rulemaking Committee. Pursuant to the Negotiated Rulemaking Act, the Commission is obligated to initiate this rulemaking proceeding.

Objectives: The objective of this proposal is to provide greater access to the telephone network by persons with hearing disabilities, while at the same time balancing the needs of establishments that must provide hearing aid-compatible telephones.

Legal Basis: The proposed action is authorized under Sections 1, 201-205, and 218 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 151, 154, 201-205, and 218.

Reporting, Record Keeping and Other Compliance Requirements: The proposed rules would require manufacturers and importers of telephones for use in the United States to provide volume control with their equipment after a certain date. Such telephone equipment manufacturers and importers also would be required to display on their equipment the date of manufacture. In addition, workplaces with fifteen or more employees, confined setting establishments and hotels and motels would have to provide hearing aid-compatible telephones after certain dates.

Federal Rules Which Overlap, Duplicate, or Conflict with These Rules: None.

Description, Potential Impact and Number of Small Entities Involved: The proposals set forth in this Notice may have an economic impact on workplaces with fifteen or more employees, confined setting establishments and hotels and motels. These establishments eventually may be required to replace some or all of their existing telephones with telephones that are hearing aid-compatible, including telephones that have volume control. These proposals also may make it easier for these establishments to acquire employees and generate business.

Any Significant Alternatives Minimizing the Impact on Small Entities, Consistent with Stated Objectives: None.

APPENDIX D

PARAGRAPH 4.1.2 of ANSI/EIA-470-A-1987



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**AMERICAN NATIONAL
STANDARD**

ANSI/EIA-470-A-1987
APPROVED: JULY 13, 1987

EIA STANDARD

EIA-470-A

Telephone Instruments With Loop Signaling

EIA-470-A

(revision of EIA-470)

JULY 1987

ELECTRONIC INDUSTRIES ASSOCIATION

ENGINEERING DEPARTMENT



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This EIA Recommended Standard is considered to have international standardization implications, but the IEC activity has not progressed to the point where a valid comparison between the EIA Recommended Standard and the IEC Recommendation can be made.

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4.1.2 Receive Response

4.1.2.1 Definition

The receive response of a telephone is a measure of its electrical-to-acoustic transfer characteristics. To define the receive response, the acoustic output or loudness level, the frequency response, the regulation over a given set of loop conditions and the distortion are specified.

4.1.2.2 Method of Measurement

The receive characteristics shall be measured according to IEEE Standard 269-1983, using the test circuit of Fig 3C of that standard. The following conditions shall also apply:

- (1) The battery feed circuit shall be as shown in Fig 4(b) of IEEE Standard 269-1983
 - (2) Measurements shall be made for each of the following loop conditions:
 - (a) 0 kft
 - (b) 9-kft #26 AWG non-loaded cable*
 - (c) 15-kft #26 AWG non-loaded cable*
- * Wilcom Products, Inc. artificial cable sections, or equivalent may be used.
- (3) The artificial ear shall be the IEC coupler for supra-aural earphones as described in ANSI S3.7-1973, Method for Coupler Calibration of Earphones (Ref: A6). The pressure response of the microphone shall be used in determining the sound pressure generated in the coupler by the receiver.
 - (4) The generator shall sweep the frequency range logarithmically from 180 to 5000 Hz. The sweep rate shall be such that one complete traverse of the 180-to 5000-Hz band requires approximately 10 seconds. The generator output shall be adjusted so the ac voltage across the 10-ohm resistor in the test circuit is -10 dBV.

- (5) A level recorder (see section 5.8 of IEEE Standard 269-1983) shall be connected to the output of the artificial ear's microphone amplifier to produce a graph of the frequency response. The horizontal axis shall be frequency, expressed in Hz, on a logarithmic scale. The vertical axis shall be expressed in dBPa. The recorder shall have a writing speed permitting the distance represented by 100 dB in chart height, to be traversed in approximately 1 second.
- (6) A sound-attenuating cover (see section 5.17 of IEEE Standard 269-1983) for the handset transmitter may be required during the recording of the receive characteristics. The cover is not required, if the sound pressure measured in the artificial ear with the cover removed and no electrical signal applied to the test circuit is at least 20 dB below the 1000-Hz sound pressure with a -10 dBV signal applied.
- (7) If the telephone being measured uses a carbon transmitter and if the receive characteristics depend on the transmitter resistance, then the following additional conditions shall also apply:
 - (a) The transmitter shall be conditioned using the procedure described in Section 6.2.2 of IEEE Standard 269-1983, prior to the recording of each response curve.
 - (b) Measurements shall be made with the transmitter in the 45° face-up position to determine compliance with the loudness requirement of 4.1.2.3.1 and the frequency response requirement of 4.1.2.3.2.

The Receive Objective Loudness Rating (ROLR) shall be determined for each of the loop conditions given in 4.1.2.2(2). Any of the methods described in IEEE Standard 661-1979, Method for Determining Objective Loudness Rating of Telephone Connections, may be used.

NOTE: The loudness rating shall be determined over the frequency range 300 to 3300 Hz, as specified in IEEE Standard 661-1979.

The receive harmonic distortion shall be determined by applying a 1000-Hz signal from the generator to the telephone while it is connected as described for the 0-kft loop condition. The generator output shall be as specified above. A harmonic distortion measuring set shall be connected to the output of the microphone amplifier to read the percent distortion.

4.1.2.3 Standard

4.1.2.3.1 Receive Objective Loudness Rating (ROLR)

The ROLR shall fall between the upper and lower limits given in Table 4-3. It is desirable that the ROLR have the mean, upper and lower limits given in Table 4-4.

NOTE: When Objective Loudness Ratings (OLR) are determined by the methods of IEEE Standard 661-1979, more positive numbers represent lower output levels, because OLR represents a loudness loss.

4.1.2.3.2 Receive Frequency Response

The receive frequency response graph recorded for the 0-kft loop condition, as specified in 4.1.2.2(5), shall fall within the upper and lower limits of the curve shown in Fig 4-2. The 1000-Hz point on the frequency response graph shall be placed at the 0-dB level on Fig 4-2, when checking for compliance.

4.1.2.3.3 Receive Distortion

It is desirable that the receive harmonic distortion be less than 5 percent.

TABLE 4.3

MANDATORY RECEIVE OBJECTIVE LOUDNESS RATING STANDARDS

<u>LOOP(kft)</u>	<u>LOWER LIMIT(dB)</u>	<u>UPPER LIMIT(dB)</u>
0	+54	+38
9 (26Ga Cable)	+55	+40
15 (26Ga Cable)	+58	+43

TABLE 4.4

DESIRABLE RECEIVE OBJECTIVE LOUDNESS RATING STANDARDS

<u>LOOP(kft)</u>	<u>LOWER LIMIT(dB)</u>	<u>MEAN(dB)</u>	<u>UPPER LIMIT(dB)</u>
0	+51	+46	+41
9 (26Ga Cable)	+53	+48	+43
15 (26Ga Cable)	+55	+50	+45

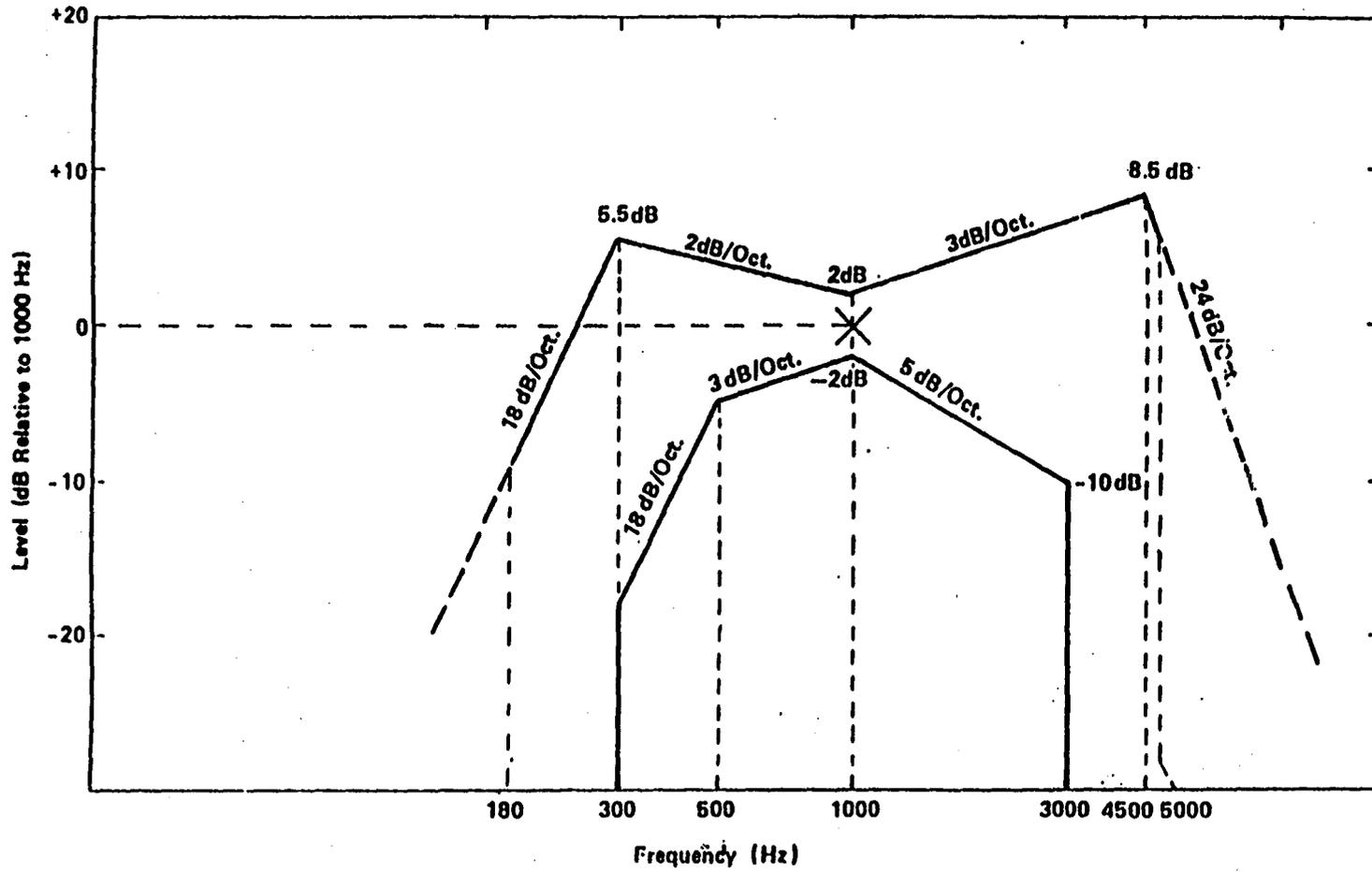


FIGURE 4-2
RECEIVE FREQUENCY RESPONSE

SEPARATE STATEMENT
of
COMMISSIONER ANDREW C. BARRETT

RE: *In the Matter of Access to Telecommunications Equipment and Services by Persons with Disabilities, CC Docket No. 87-124, Notice of Proposed Rulemaking*

By the Notice of Proposed Rulemaking adopted today, the Commission continues efforts to implement the Hearing Aid Compatibility Act of 1988.¹ This law requires the Commission to establish regulations that would ensure reasonable access to telephone service by persons with hearing disabilities.² To address several problems that resulted from rules adopted previously to implement the Hearing Aid Compatibility Act, the Commission in March 1995 announced the formation of a federal advisory committee to spearhead a negotiated rulemaking.³ In a negotiated rulemaking, representatives of interested parties meet to discuss the issues involved, try to, in good faith, reach a consensus on these issues, and make formal recommendations to the Commission.⁴ The 19-member Hearing Aid Compatibility Negotiated Rulemaking Committee (the Committee) was comprised of all interested parties, including the Commission, telephone equipment manufacturers, employers, hospitals, nursing homes, hotels and motels, and persons with disabilities. Following completion of the Committee's work, it submitted a final report to the Commission in August 1995.⁵

The Notice we adopt today, which is largely based upon the Committee's recommendations, presents new rules, modifications to existing rules, and seeks comment on the proposals. First, the Notice asks for comment on the Committee's proposal to require hearing aid compatible telephones in: (1) the non-common areas of the workplace, such as individual employee offices; (2) the patient and residential rooms of confined settings, such

1 47 U.S.C. § 610.

2 Id. § 610(a).

3 See Notice of Advisory Committee Establishment, 60 Fed. Reg. 15,739 (March 27, 1995); see also Negotiated Rulemaking Act of 1990, codified at 5 U.S.C. § 561.

4 I support the negotiated rulemaking process as an effective mechanism for the formation and development of sound public policy. The collaborative effort of the members of an advisory committee can be replicated in the non-negotiated rulemaking process by parties with common interests and goals allying and forming coalitions. These coalitions are then able to present their positions in comments to the Commission.

5 Pursuant to the Negotiated Rulemaking Act, the Commission has largely used, to the maximum extent possible, the consensus of the Committee with respect to its recommended rules as the basis for this notice of proposed rulemaking.

as hospitals and nursing homes; and (3) the guest rooms of hotels and motels. Second, we seek comment on a proposal that all new and replacement telephones should be equipped with volume control. Third, we propose to modify our rules governing telephone equipment labelling requirements. Finally, the Notice proposes to implement additional recommendations of the Committee regarding consumer education.

I support the Commission's effort today to fully implement the provisions of the Hearing Aid Compatibility Act. By utilizing the negotiated rulemaking process, the Commission has gathered all of the interested parties together with a single goal -- to formulate and present to the Commission draft regulations that would ensure reasonable access to telephone service by persons with hearing disabilities. By using the negotiated rulemaking process in this case, the Commission has wisely avoided the "heavy lifting" associated with designing and improving regulation and, instead, the Commission has relied, in part, upon the entities and the people the proposed rules would directly affect. In my view, under these circumstances, the negotiated rulemaking has made the process more efficient. In addition, the proposed rules, because they have been formulated by consensus and not division, should be more effective than rules drafted solely by the Commission.

Substantively, the Committee's recommendations and the proposed rules appear to strike a reasonable balance between the interests of persons with hearing disabilities to have access to the telephone network and the interests of those responsible for providing the public with telephones -- employers, hospitals, nursing homes, and hotels and motels. Where appropriate, the Committee proposed exemptions to the general rule of providing hearing-aid compatible telephones. In addition, the Notice recognizes the fact that many businesses may have substantial inventories of telephones and that it would be unreasonable to render these inventories non-compliant.

The Notice covers several areas and environments and raises complex issues. The goal of this proceeding, however, is not elusive or difficult to understand -- to ensure that Americans with hearing disabilities have reasonable access to the wireline telephone network. In drafting comments, interested parties should keep this primary goal as the focal point of their submissions. I look forward to carefully examining the comments filed in response to this Notice.