

# Dropping Slugs in the Celestial Jukebox: Congressional Enabling of Digital Music Piracy Short-Changes Copyright Holders\*<sup>†</sup>

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<sup>†</sup> The use of something worthless to obtain something of value is as old as the hills, and remains a very real threat in the digital age. The term “celestial jukebox” was coined by Stanford Law Professor Paul Goldstein. See PAUL GOLDSTEIN, COPYRIGHT’S HIGHWAY: FROM GUTENBERG TO THE CELESTIAL JUKEBOX (1994). The phrase refers to the “vast libraries of films, sound recordings, and printed material . . . [available either via] a satellite orbiting above the earth or an earthbound network of fiber optic cables and telephone wires.” Robert Chow, Book Note, 10 HIGH TECH. L.J. 193, 193 (1995) (reviewing PAUL GOLDSTEIN, COPYRIGHT’S HIGHWAY: THE LAW AND LORE OF COPYRIGHT FROM GUTENBERG TO THE CELESTIAL JUKEBOX (1994)).

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## I. INTRODUCTION

In response to the myriad new methods of copying that are emerging from the ongoing digital revolution, Congress has enacted several amendments to copyright law.<sup>1</sup> These statutes have sought to protect copyright holders in the digital age without chilling the development of new technologies or interfering with consumer access to copyrighted works. Specifically, the Audio Home Recording Act of 1992 (“AHRA”)<sup>2</sup> recognized the tremendous potential for piracy created by consumer access to digital audio recording devices. The purpose of the AHRA is not only to prevent infringing acts, but also to compensate copyright holders for the inevitable instances of illicit musical copying which will result from the capability of these devices to make perfect copies from perfect copies of perfect copies.<sup>3</sup>

In drafting the AHRA, Congress deliberately excluded personal computers (“PCs”)<sup>4</sup> from its definition of “digital audio recording devices,”<sup>5</sup> in spite of the obvious fact (at least in hindsight) that PCs are, in reality, the ultimate digital audio recording devices. As a result, PC manufacturers are not required to contribute to the royalty fund created by the AHRA to effectuate the compensation element of that Act.

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1. *See, e.g.*, Audio Home Recording Act of 1992, 17 U.S.C. §§ 1001-1010 (1994); Digital Performance Right in Sound Recordings Act of 1995, Pub. L. No. 104-39, 109 Stat. 336 (codified as amended in scattered sections of 17 U.S.C.); Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C.).

2. 17 U.S.C. §§ 1001-1010.

3. *See infra* Part IV.A.

4. Throughout this Comment, the author uses the term “PC” to refer to personal computers of all types (i.e., not limited to machines utilizing the Windows operating system).

5. Audio Home Recording Act of 1992, 17 U.S.C. § 1001. *See infra* Part IV.A.3.

Hence, while the act of unauthorized copying may still be illegal, the AHRA's attempt at a practical solution (i.e., the royalty fund) to the loss suffered by musical copyright holders has been rendered somewhat ineffectual by this exemption. To the extent that PCs are used by consumers to perform illegal duplication of copyrighted musical works, copyright holders for those works will remain uncompensated for the resulting losses, in spite of the explicit intentions of the AHRA to the contrary.

This Comment argues that copyright law should be amended to end this exemption. As a result, PC manufacturers would have to (1) contribute a small percentage of their sales to the AHRA royalty fund, just as DVD, DAT, and CD-R manufacturers already do, and (2) ensure that their products comply with the AHRA's Serial Copying Management System requirement, which is aimed at thwarting the spread of illegal copies of digital recordings. This Comment demonstrates that this result is fair because PCs are used to copy, send, and receive digital audio recordings with alarmingly increasing frequency. As these products are used more and more for digital music piracy, the injustice of the AHRA's exemption for PCs will continue to grow unless this loophole is closed.

Part II briefly outlines the development of digital music piracy. Part III gives an overview of relevant technology. In Part IV, the author examines recent copyright legislation, focusing in particular on the AHRA's PC exemption. Part V discusses the only reported case dealing with the AHRA's PC exemption. The music industry's attempt to propose a self-regulatory solution to the problem of digital music piracy is summarized in Part VI. Finally, Part VII explores the probable results and consequences of ending the AHRA's PC exemption.

## II. BACKGROUND OF DIGITAL MUSIC PIRACY

Since the advent of the Apple IIe in the late 1970s, PCs have become a ubiquitous symbol of modern American life. Once a tool of the technological elite, PCs are now found in classrooms, farmhouses, offices, factories, and (perhaps most significantly) homes throughout the industrialized world. Coupled with the ease of consumer access to the virtually infinite amount of information embodied by the Internet and the World-Wide Web, this extremely high proportion of personal

computer ownership has created a population empowered beyond its own comprehension.<sup>6</sup>

Obviously, not all users of PCs and the Internet limit themselves to the legal applications of these technologies. Virtually any tool can be used for legitimate or illegitimate activities; some tools, however, beckon unscrupulous users to see what they can get away with.<sup>7</sup> PCs are such tools. The milieu created by blazing processor speeds, increasingly speedy connections to the Internet, a seemingly limitless amount of information (much of it copyright-protected), and a fundamental ambiance of under-regulation has resulted in widespread digital piracy of intellectual property of all types.

For a number of reasons, illegal copying of sound recordings represents one of the most glaring examples of computer-based copyright infringement today. Though the potential for piracy of literary works<sup>8</sup> or of other multimedia products<sup>9</sup> exists, popular music is an easy and attractive target for piracy.<sup>10</sup> The high proportion of relatively youthful Web surfers, many of whom have been cruising the information superhighway for years before being licensed to drive, has fueled both the supply and the demand for illegal copying of copyrighted music. The result is the availability of many thousands of illegal, yet virtually CD-quality, recordings on the Web.<sup>11</sup>

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6. The author recently spent an evening demonstrating the vastness of the Web to his 92-year-old grandmother. Her response alternated between exclamations of bewilderment at the extent of the information available ("But who puts it there?") and anxious demands for him to make the computer produce the definitive answer to some point of personal interest to her ("Try looking for the birthplace of Mozart!"). These polarized feelings of amazement and an impatient desire to harness the almost mystical powers contained by the "Celestial Jukebox" in order to accomplish personally satisfying and fulfilling goals typify the relationship among computers, the Internet, and the public at large: we may not understand how it works, but we quickly figure out exactly what we want it to do for us.

7. The oxymoronic sale of "street-legal" cars that are capable of exceeding 170 mph, although sold in places where the maximum legal speed is 70 mph, comes to mind.

8. Though one may first think of Shakespeare or Toni Morrison, computer software also falls into the "literary works" category. See 17 U.S.C. § 101 (1994); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1249 (3d Cir. 1983) (holding that "a computer program . . . is a 'literary work' and is protected from unauthorized copying . . ."). See also H.R. REP. 102-873, pt. 1, at 17 (1992).

9. For example, the author knows of at least one individual who downloaded (free of charge, of course) a copy of the film *THE BLAIR WITCH PROJECT* (Haxan Entertainment 1999) prior to the film's release.

10. Digitized sound files are smaller than other multimedia files (e.g., motion pictures), and hence can be copied, transferred, or transmitted in relatively shorter times. See *infra* notes 45-49 and accompanying text for more detailed discussion of the ease of downloading musical files.

11. See LUCAS GRAVES, *MEDIA DISTRIBUTION: CONFRONTING THE THREAT OF MUSIC PIRACY* 21 (Jupiter Communications 1999). Graves puts forth that "everyday music consumers casually posting copies of songs for barter pose a graver piracy threat

Congress is not oblivious to the increased risk of intellectual property copyright infringement posed by digital technology. Although it is fundamentally challenging to enact timely legislation that keeps pace with technological innovation,<sup>12</sup> Congress appears to be making an effort to do so.<sup>13</sup> Indeed, the last decade has seen several significant additions to and revisions of existing copyright law, many of which are specifically geared toward these issues.<sup>14</sup> The most important piece of legislation with respect to digital music piracy is the Audio Home Recording Act of 1992.<sup>15</sup> Unfortunately, the AHRA is fundamentally myopic<sup>16</sup> in its attempt to combat digital music piracy. Specifically, by exempting personal computers from the AHRA, Congress substantially eviscerated the Act's ability to accomplish its twin goals of

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than the organized interests that mass-produce illegal CDs in covert factories." *Id.* The potential for profitable professional piracy will not vanish from the Internet context; in fact, it is possible that "for-profit piracy will bring high-end resources to bear for defeating encryption or watermarking schemes." *Id.* This underscores the importance of developing a scheme of compensation for the copyright holders whose materials will be infringed, whether by everyday consumers or for-profit pirates. That is, because technological measures may always be defeated by other technological measures, the devaluation of the copyrighted materials that results from piracy will ultimately be adjusted for somewhere within the market: if not through a Congressional scheme, then perhaps through increased cost to the consumer. *See infra* Part VII.B.

12. Additionally, consider the difficulties faced by the judiciary in keeping up with rapidly evolving fact patterns in the world of high-tech law. *See* Stuart Minor Benjamin, *Stepping into the Same River Twice: Rapidly Changing Facts and the Appellate Process*, 78 TEX. L. REV. 269 (1999) (exploring the inherent complications arising when facts change between trial and appellate rulings).

13. In a sense, Congress is "damned if they do and damned if they don't" in this respect. If Congress errs on the side of underlegislating, then novel legal issues resulting from technological advances unanticipated by existing law will have to be dealt with in the context of antiquated statutes. If, on the other hand, they take a more proactive stance and attempt to specifically address novel technologies, the resulting legislation necessarily will be narrower in its scope and hence more prone to rapid obsolescence.

14. *See* Audio Home Recording Act of 1992, 17 U.S.C. §§ 1001-1010 (1994); Digital Performance Right in Sound Recordings Act of 1995, Pub. L. No. 104-39, 109 Stat. 336 (codified as amended in scattered sections of 17 U.S.C.); Digital Millennium Copyright Act, Pub. L. No. 105-304, 112 Stat. 2860 (1998) (codified as amended in scattered sections of 17 U.S.C.).

15. Pub. L. No. 102-563, 106 Stat. 4237 (codified as amended at 17 U.S.C. §§ 1001-1010 (1994)).

16. The short-sightedness which characterizes myopia may adequately represent Congress's failure to include personal computers in its definition of "digital audio recording device." 17 U.S.C. § 1001. However, a more accurate ophthalmologic metaphor might be that the AHRA suffers from a central scotoma, or blind spot in the middle of its visual field; that is, the omission of personal computers from the definitional schema of the AHRA may have resulted from Congress's inability to visualize the central component of the digital landscape before it.

compensation and prevention.

### III. THE RELEVANT TECHNOLOGY

#### A. *The Internet*

The word "Internet" still does not appear in most dictionaries.<sup>17</sup> This absence embodies the gap between rapidly accelerating technological advances and the more traditional modes of communication and language. Most Americans have a pretty good idea of what the Internet is, yet the word still does not appear in many standard dictionaries.

The Internet is a vast network of networks of computers, located throughout the world, linked together by telephone and cable lines. It is difficult to comprehend its size and power due to its fundamental lack of centralization and physically perceptible characteristics. Indeed, "[t]he Internet is not a physical or tangible entity, but rather a giant network which interconnects innumerable smaller groups of linked computer networks. It is thus a network of networks."<sup>18</sup> Because its original purpose was to enable government defense contractors and researchers to access and share data easily,<sup>19</sup> the lack of regulation regarding who may upload or download what sort of file at what time goes to its core:

From its inception, the [Internet] was designed to be a decentralized, self-maintaining series of redundant links between computers and computer networks, capable of rapidly transmitting communications without direct human involvement or control, and with the automatic ability to re-route communications if one or more individual links were damaged or otherwise unavailable. Among other goals, this redundant system of linked computers was designed to allow vital research and communications to continue even if portions of the network were damaged, say, in a war.<sup>20</sup>

There are varying estimates of how many mainframe computers currently compose the Internet and of how many individuals are connected to this network via personal computers.<sup>21</sup> There is no doubt, however, that the number has grown tremendously since Internet access

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17. See, e.g., WEBSTER'S NINTH NEW COLLEGIATE DICTIONARY (1989); WEBSTER'S ENCYCLOPEDIA UNABRIDGED DICTIONARY OF THE ENGLISH LANGUAGE (1989).

18. *ACLU v. Reno*, 929 F. Supp. 824, 830 (E.D. Pa. 1996), *aff'd*, 521 U.S. 844 (1997).

19. See *id.* at 831. See also Philip Elmer-Dewitt, *Battle for the Sole of the Internet*, TIME, July 25, 1994, at 50, 52.

20. *ACLU*, 929 F. Supp. at 831.

21. "The art of estimating how many are online throughout the world is an inexact one at best. Surveys abound, using all sorts of measurement parameters. However, from observing many of the published surveys over the last two years . . . an 'educated guess' as to how many are online worldwide as of March 2000 . . . is 304.36 million." *NUA Internet Surveys* (visited June 11, 2000) <[http://www.nua.ie/surveys/how\\_many\\_online/index.html](http://www.nua.ie/surveys/how_many_online/index.html)>.

became widely available to consumers in 1993.<sup>22</sup>

It is crucial to recognize that there are several ways that computers and the Internet can be used to make digital copies of sound recordings. First, with the appropriate software,<sup>23</sup> one can easily copy a recording from a compact disc to the hard drive of a personal computer.<sup>24</sup> Second, a sound file can be sent directly from one personal computer user to another by way of e-mail attachment; this type of transmission is classified in *ACLU v. Reno* as “one-to-one messaging.”<sup>25</sup> Third, sound files can be downloaded from the World-Wide Web; this method of “remote information retrieval” essentially constitutes copying the file to or from a third-party computer, the location of which may well be unknown to the PC user.<sup>26</sup>

### *B. Personal Computers and Their Connection to the Internet*

As a general rule, processor speeds and memory capacities of personal computers slip from cutting edge to mediocrity within a period of approximately eighteen months.<sup>27</sup> In late 1999, a new Apple iMac ran at

22. It is difficult to pinpoint the genesis of consumer Internet access. The World-Wide Web was “released” in 1991, but commercial access to it did not occur immediately. By 1994, however, it was possible to order a meal from Pizza Hut online. See Dave Kristula, *The History of the Internet* (visited Oct. 5, 2000) <<http://www.davesite.com/webstation/net-history.shtml>>.

23. For example, SoundJam, which can be either downloaded for a free 10-day trial or purchased, can convert songs from the “au” file format in which they are stored on a commercially released CD to the highly compressed “MP3” format commonly used to store and transmit sound files between computers and over the Internet. See *infra* notes 44-47 and accompanying text.

24. Due to the definitional schema laid out by the Audio Home Recording Act of 1992, 17 U.S.C. §§ 1001-1010 (1994), the Ninth Circuit has recently held that such a transfer does not constitute a “digital musical recording.” *Recording Indus. Ass’n of Am. v. Diamond Multimedia Sys., Inc.*, 180 F.3d 1072, 1076 (9th Cir. 1999). See *infra* Part IV.A.3.

25. *ACLU v. Reno*, 929 F. Supp. 824, 834 (E.D. Pa. 1996), *aff’d*, 521 U.S. 844 (1997).

26. See *id.* at 835-36.

27. The idea that high-tech capacities double approximately every 18 months comes from a principle known as “Moore’s Law.” For a historical overview of Moore’s Law, see *Processor Hall of Fame* (visited Sept. 9, 1999) <<http://www.intel.com/intel/museum/25anniv/Hof/moore.htm>>. Although Gordon Moore first noticed this trend in 1965 strictly in the context of memory chip performance, the concept has been applied more generally in recent years. See *id.* For a discussion of the sustainability of this trend in the coming decades, see *Can Moore’s Law Continue Indefinitely?* (visited Sept. 9, 1999) <<http://www2.computerworld.com/home/online9697.nsf/All/960722LEADSL9607lead>>.

333 MHz and was equipped 100 MB of RAM and a 6-GB hard drive.<sup>28</sup> However, the purchaser of such a computer must be aware that within one or two years, a similarly priced machine will be virtually twice as fast and boast twice as much memory capacity.<sup>29</sup>

Additionally, the rate at which personal computers can exchange information (i.e., send and receive files), both with other PCs and directly with servers, has increased tremendously since the advent of consumer Internet access. More consumers than ever are foregoing traditional modems in favor of connections provided by cable companies.<sup>30</sup> It seems inevitable that at some point in the near future the great majority of all Internet access will occur through such connections. At that point, the time required to transmit data between personal computers and servers will cease to be a factor for multimedia files such as digital sound recordings, leading potentially to increased use of the Internet to send and receive music files.<sup>31</sup>

This rate of technological change is highly relevant to the issue of digital music piracy: it begins to illuminate how difficult it is to anticipate the way in which copyrighted materials will be copied and transmitted within a period of just a few years.<sup>32</sup> Although processor speed and disk space do not currently represent the most significant rate-limiting steps in online music piracy, they are nevertheless key ingredients.<sup>33</sup>

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28. As of October, 2000, when this Comment was going to press, the latest iMac ran at 500 MHz and featured 128 MB of RAM and a 30-GB hard drive. *See The Apple Store* (visited Oct. 5, 2000) <<http://store.apple.com/1-800-MY-APPLE/WebObjects/AppleStore>>.

29. *See id.*

30. The number of "residential high-speed subscribers" (which includes both cable and digital subscriber line, or DSL) in the United States as of January 2000 is approximately two million, or roughly five percent of U.S. Internet users. *See Cable Companies Staking Claim in ISP Race* (visited June 8, 2000) <<http://www.statmarket.com/SM?c=stat042399>>. This number is expected to grow to approximately 11 million by 2002. *See id.* A "broadband" (i.e., cable or DSL) connection may be as much as 100 times faster than a "dial-up" (i.e., modem and phone line) connection. *See infra* note 42.

31. If the current rate of change continues, eventually there may be no perceptible delay between the moment a Web surfer begins to download a file and the moment that the process is complete; this instantaneous response, contrasted to the minutes currently required, should add to the appeal of this mode of copying.

32. This, in turn, illustrates the difficulties inherent in ensuring that copyright law strikes the proper balance between protection of proprietary ideas (which encourages inventors and authors to harness their creativity) and facilitation of consumer access to the "fair use" of those creations. *See* U.S. CONST. art. I, § 8, cl. 8; 17 U.S.C. §§ 107 (1994). It is difficult to legislate (or even articulate) the proper equilibrium point in this balancing act when the landscape of potential infringement methods is constantly morphing.

33. One thousand songs converted to MP3 format require approximately 3 GB of disk space. In 1999, a middle-of-the-road PC could not store this much information. In 2000, an average computer could easily store 1000 songs, but doing so would take up



C. *Audio Files and Compression Thereof:  
The Significance of MP3*

The potential to make an identical, illegal duplicate of a legally purchased audio recording has existed for years.<sup>34</sup> Digital audio tape (“DAT”) and recordable compact disk (“CD-R”) technologies have been commercially available since the late 1980s.<sup>35</sup> The potentially illegal use of these technologies was, of course, anticipated by entertainment industry groups, who were naturally fearful of decreasing sales as a result of digital piracy.<sup>36</sup> Copyright law has responded to the threat posed by DAT and CD-R,<sup>37</sup> but it has not directly confronted the device that has the greatest potential to be used for illegal copying of CDs: the personal computer.

In the “au” format, in which a song is stored on a standard music CD, a three-minute song contains approximately 35 MB of information. For an average personal computer today, 35 MB is not a hefty file; copying a file this size requires an insignificant amount of processor time.<sup>38</sup> Sending or receiving a 35-MB file over the Internet, however, may take quite a bit longer, depending on the nature of one’s connection.<sup>39</sup> When the Audio Home Recording Act<sup>40</sup> was enacted in 1992,<sup>41</sup> copying a 35-MB file would have been relatively time-consuming; sending it to another computer by way of modem and phone line would have been an

roughly half of the available memory. On the personal computers of next year and the year after that, 1000 songs will require a diminishing percentage of the total disk space. Hence, in the foreseeable future, the owner of an average personal computer will be able to store thousands of songs without worrying about disk space limitations. Similarly, faster processor speeds will allow a PC user to download or upload cyberspace information at faster speeds. The rate at which uploading and downloading can occur is dependent primarily on the speed of the modem being used to connect the personal computer to the Internet, and on the number of users competing for space on the particular telephone or cable lines at that time (i.e., “bandwidth”). See *infra* note 42.

34. See H.R. REP. NO. 102-873, pt. 1, at 12 (1992).

35. See *id.*

36. See Michael Gowan, *How MP3 Works* (visited June 8, 2000) <<http://www.cnn.com/2000/TECH/computing/02/03/mp3.works.idg/index.html>>.

37. See Audio Home Recording Act of 1992, 17 U.S.C. §§ 1001-1010.

38. Copying a 35-MB file on the author’s 333 MHz iMac takes about five seconds.

39. Using the author’s 56K modem on a busy night, it would take several hours to transmit a 35-MB file. Users with cable connections, on the other hand, could accomplish the same transfer in just a few minutes.

40. 17 U.S.C. §§ 1001-1010.

41. Eight years is virtually an eternity in terms of the amount of change occurring in consumer-grade (and industrial) computing. See *supra* note 27 and accompanying text.

astronomical endeavor.<sup>42</sup> This is probably one of the reasons that, at the time the AHRA was drafted, the threat of PC-based copying and transmission of digital recordings seemed remote.<sup>43</sup>

Since the AHRA was enacted, this distant threat has become an everyday occurrence, due not only to faster personal computers, but also to the advent of MP3 technology. MP3, which stands for MPEG-1, Layer 3,<sup>44</sup> is a nonproprietary compression algorithm<sup>45</sup> that can reduce the size of an audio file by a factor of approximately twelve<sup>46</sup> by filtering out unnecessary or redundant ones and zeroes.<sup>47</sup> It is not only possible, but downright *easy* to lift a song from a CD, convert it into MP3 format, and store it on a computer's hard drive, reducing it from 35 to only 3 MB in the process.<sup>48</sup> The resulting MP3 file sounds nearly identical to

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42. For example, downloading Tolstoy's *WAR AND PEACE* via 14.4K modem (the standard modem speed in 1993) would require nearly 30 minutes; using a high-speed cable modem, the same file (approximately 26 MB) could be downloaded in less than a minute and a half. See Kathryn Balint, *It Will Be a Brave New Interactive World*, SAN DIEGO UNION-TRIB., Jan. 16, 2000, at A1. Speed comparisons made by providers of high-speed Internet access often are much more optimistic; one such provider, Cox@Home, claims that "downstream speed" (the rate at which information can be downloaded) using their service may be "up to 100 times faster than a 28.8Kbps modem." *The Facts About Speed* (visited Jan. 17, 2000) <<http://www.home.com/speed/>>. Although this rate differential admittedly is dependent on network traffic and individual computer performance, the implications for digital music piracy are staggering; a 35-MB sound file that would require 20 minutes to download via a 28.8K modem could be transferred, theoretically, by cable modem in just 12 seconds.

43. See H.R. REP. 102-873, pt. 1, at 17 (1992). See also S. REP. No. 102-294, at 48 (1992).

44. See Gowan, *supra* note 36. MPEG, in turn, stands for Moving Picture Experts Group. See Naomi Graychase, *What Is MP3?* (visited Sept. 7, 2000) <<http://www.cnet.com/category/0-4004-7-294826.html?st.int.top10mp3.arrow.sw1>> (stating that the Moving Picture Experts Group is "a consortium that develops open standards for audio and video compression").

45. Put more simply, MP3 and its predecessors "filter[] out superfluous information from the original audio source, resulting in smaller audio files with no perceptible loss in quality." Graychase, *supra* note 44. Unlike other audio compression algorithms, both currently in existence and yet to be developed, MP3 technology is in the public domain, such that anyone may use it. See GRAVES, *supra* note 11, at 14. This public access "guarantees the widespread use of MP3 well into the next decade." *Id.*

46. This is the default compression ratio for an MP3 file. See Graychase, *supra* note 44 ("[T]he MP3 standard will take music from a CD and shrink it by a factor of 12, with no perceptible loss of quality."). At the expense of losing some of the original recording's fidelity, it is possible to compress the sound file by as much as a factor of 36. See Naomi Graychase, *Why Do Some MP3 Files Sound Garbled?* (visited Sept. 7, 2000) <[http://home.cnet.com/category/0-4004-7-294832.html?st.int.top10mp3.index\\_sw7.sw](http://home.cnet.com/category/0-4004-7-294832.html?st.int.top10mp3.index_sw7.sw)>. All copying, uploading, and downloading of such a file would be three times as fast as that of a "default" MP3 file. See *infra* note 49.

47. For an excellent overview of MP3 technology and use, see Naomi Graychase, *10 Questions About MP3* (visited June 16, 2000) <<http://home.cnet.com/category/0-4004-7-294825.html?st.int.top10mp3.back.sw>>. See also Gowan, *supra* note 36.

48. This process, known as "ripping," was completely unknown to the author until

the original recording,<sup>49</sup> and can be transferred, uploaded, or downloaded in one-twelfth the time that it would have taken to transfer the full “wav” file. Considering that the average popular recording has about twelve songs on it, the result of utilizing MP3 compression is that an entire album can be transferred in the time that it takes to transfer one song without this compression.<sup>50</sup>

The implication of the relative ease and speed of transferring audio files is the increased use of audio compression technology.<sup>51</sup> Taken together with the parallel increases in processor speeds and connection rates,<sup>52</sup> the logical conclusion is that more and more people will use their

he began research for this Comment. After consulting with a friend who knew how to “rip” CD’s, the author was able to acquire the necessary software and make his first MP3 in less than an hour. He ripped a song by his own band in order to avoid possible copyright infringement, though current law does not consider an MP3 file on a hard drive to be a “digital audio recording.” See *infra* Part IV.A.3.

49. It is possible to make an MP3 that is relatively more or relatively less compressed, depending on the bit rate selected when making the transfer; a 128-kbit rate is considered the standard, and correlates to the stated compression ratio of 12-1. See Graychase, *supra* note 46. At this level of compression, the author was able to notice a slight degradation of sound quality when comparing the MP3 file to the track on the CD; some of the higher frequencies appeared to have taken on a warbly, out-of-phase characteristic. If maintaining the full stereophonic glory of a recording is not a high priority, a ripper may choose to compress the file even more by transferring at only 32 or 64 kbit. The result is a compression rate of 36-1 or 24-1 rather than 12-1, but a noticeably diminished sound quality (i.e., the fidelity sounds more like AM radio than FM stereo). On the other hand, one may also choose to rip at up to 360 kbit. An MP3 of this variety has only been reduced in size by a factor of about four, but the sound quality is immaculate; only professionally trained ears will detect degradation of sound quality. See Gowan, *supra* note 36.

50. Naturally, future generations of audio compression technologies may be able to squash music files even more. In fact, some possible successors to MP3 technology, such as Advanced Audio Coding (AAC) and MPEG-4, already exist. See GRAVES, *supra* note 11, at 13.

51. Of course, the potential for legal use of this technology is tremendous. The legal channels of digital music distribution (for example, MP3.com, an online provider of legitimate, artist-authorized music files) are generally beyond the scope of this Comment. Recently, however, the line between legal and illegal digital music has become less clear; the Recording Industry Association of America (RIAA), which represents the interests of the major U.S. recording companies, filed suit against MP3.com, alleging copyright violation by MP3.com’s “Instant Listening” and “My.MP3.com” services. See Jennifer Davies, *Mainstream Proves Troublesome for MP3.com*, SAN DIEGO DAILY TRANSCRIPT, Feb. 2, 2000, at 1A; Mike Drummond, *Anirate Recording Industry Sues MP3.com*, SAN DIEGO UNION-TRIB., Jan. 22, 2000, at C1. Though four of the five major record labels settled with MP3.com for undisclosed amounts, U.S. District Judge Jed Rakoff ultimately ordered MP3.com “to pay as much as \$250 million to Universal Music Group for intentionally violating its copyrights.” *Copyright Ruling Slams MP3.com*, SAN DIEGO UNION-TRIB., Sept. 7, 2000, at A1.

52. See *supra* note 30.

PCs to copy, send, and receive digital music files in the coming years.<sup>53</sup>

#### IV. RECENT COPYRIGHT LEGISLATION

##### A. *Audio Home Recording Act of 1992*

Congress is not oblivious to the threat of digital music piracy. The Audio Home Recording Act of 1992 addressed the burgeoning conflict between new technologies and intellectual property law using a two-prong attack: (1) establishing a royalty fund to compensate copyright holders for anticipated digital infringement,<sup>54</sup> and (2) mandating the incorporation of copying controls into “digital audio recording device[s]” in order to prevent serial copying.<sup>55</sup> After discussing the legislative history of the AHRA, this Comment will examine each of these prongs in greater depth, discuss the crucial definitions in the Act which exempt PCs from its reach, and set forth the fundamental problem which results from this exemption.

##### 1. *Legislative History*

As audio recording devices became increasingly available to consumers throughout the 1960s, the conflict between technology manufacturers and the recording industry grew. Although the early analog home recording equipment ultimately posed no serious threat to copyright holders,<sup>56</sup> Congress established copyright protection for sound recordings with the Sound Recording Act of 1971.<sup>57</sup> Prior to that Act, sound recordings were afforded no copyright protection whatsoever.<sup>58</sup> The advent of digital recording technology<sup>59</sup> took this struggle to a much

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53. One indication of the mainstream popularity already enjoyed by Internet-based digital music piracy is the appearance of a “Top 10 Pirated Internet Tracks” chart on the last page of ROLLING STONE. See, e.g., *Charts*, ROLLING STONE, Oct. 28, 1999, at 120.

54. See 17 U.S.C. §§ 1003-1007 (1994 & Supp. IV 1998).

55. 17 U.S.C. § 1002 (1994).

56. Analog recordings degenerate noticeably with every generation of removal from the original. A copy of a copy of a copy may be virtually unlistenable; the threat of widespread high-quality piracy of sound recordings, therefore, was minor. Although the music industry may have perceived analog home recording technology as posing a great threat to copyright, such fears ultimately proved unfounded: small-scale analog-based bootlegging of copyrighted recordings may have been commonplace, but it did not threaten the viability of the industry to the degree that digital copying does.

57. Pub. L. No. 92-140, 85 Stat. 391 (codified as amended in scattered sections of 17 U.S.C.).

58. “Although musical works have long been copyrightable, sound recordings became copyrightable for the first time in February 1972 under the 1971 Sound Recording Act.” S. REP. NO. 102-294, at 30 (1992).

59. Digital recording technology was first used on a commercial level (i.e., in professional recording studios) in the early 1970s; consumer-grade digital recording

higher level; unlike reel-to-reel and cassette tape recorders, digital recording devices allow serial copying with virtually no resultant loss of sound quality.<sup>60</sup> Sound recording copyright holders now had something about which to be deeply concerned.

The direct origins of the AHRA date back to February 5, 1987, when (then) Senator Al Gore first introduced legislation to require digital audio recording equipment to incorporate copy protection measures.<sup>61</sup> At that point, the consumer electronics industry and the recording industry had already been in negotiations for several years<sup>62</sup> in an attempt to find a solution to the problems arising out of consumer access to digital recording technology.<sup>63</sup> It is interesting to note that the discussion surrounding this ancestor of the AHRA focused on the threat posed by DAT recorders being imported from Japan, and apparently did not consider the possible role of PCs in digital music copying.<sup>64</sup> During the late 1980s and early 1990s, PCs simply did not pose a significant threat to music copyright holders, especially compared to the very real threat posed by DAT machines. What started out as an omission arising from the technological limitations of the day ended up as a deliberate exemption in response to pressure by electronics manufacturers.<sup>65</sup>

By the time Senate Bill 1623 was being considered by the Senate,<sup>66</sup> Congress was no longer unaware of the potential for personal computers

technology (i.e., digital audio tape, which is also used commercially) did not surface until the mid-1980s.

60. Hence, a copy of a copy of a copy will be indistinguishable from the original recording, unless perhaps the listener has really good ears.

61. See S. REP. NO. 102-294, at 31.

62. The direct origins of this conflict date back to *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984). In that landmark case, the Supreme Court held that the home recording of publicly broadcast television programs for subsequent, non-commercial viewing (a process referred to as "time shifting") was a fair use of those copyrighted materials. See *id.* at 455. See also *infra* note 152 and accompanying text.

63. See S. REP. NO. 102-294, at 32-33.

64. See, e.g., 133 CONG. REC. S2622-01 (daily ed. Feb. 26, 1987) (statement of Sen. D'Amato). See also 133 CONG. REC. S1929 (daily ed. Feb. 5, 1987) (statement of Sen. Gore). The definition of "digital audio recording device" in the Digital Audio Recorder Act of 1987, as introduced by Senator Gore, was extremely broad: "A 'digital audio recording device' is any machine or device, now known, or hereafter developed, which can be used for making audio recordings in a digital format." *Id.* at S1930. Interestingly, this definition likely would have included PCs, even though the Act was aimed explicitly and exclusively at preventing DAT abuse. See *id.* at S1929.

65. See *Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys.*, 29 F. Supp. 2d 624, 629 (C.D. Cal. 1998).

66. S. 1623, the Senate's version of what became the Audio Home Recording Act, was first considered by that body on August 1, 1991. See S. REP. NO. 102-294, at 33.

to make digital audio recordings (DAR).<sup>67</sup> Indeed, the Report on Senate Bill 1623 contains the following key language: “[N]either a personal computer whose recording function is designed and marketed primarily for the recording of data and computer programs, nor a machine whose recording function is designed and marketed for the primary purpose of copying multimedia products, would qualify as a ‘digital audio recording device.’”<sup>68</sup> There is some reason to believe that this language resulted from political pressure applied by the Consumer Electronics Manufacturers Association,<sup>69</sup> which had a direct pecuniary interest in keeping their products out of the reach of the AHRA.<sup>70</sup> Congress may have been persuaded to incorporate this language in part because, at the time the AHRA was enacted, the potential for personal computers to be used extensively in digital music piracy was perceived (somewhat accurately) as no more than a distant threat. It is not surprising that, in 1992, it would have been relatively easy for computer manufacturers to convince Congress to exclude their products from the AHRA, simply because at that time their products were not practically useful for making home recordings. Today, however, that threat has become a reality, necessitating a change in the statute to reflect technology as it now exists.

## 2. *Practical Effects of the AHRA*

The AHRA attempted to balance the interests of two groups: consumers and copyright holders.<sup>71</sup>

The purpose of [the AHRA] is to ensure the right of consumers to make analog or digital audio recordings of copyrighted music for their private, noncommercial use. Moreover, [the AHRA] contains a royalty payment system that provides modest compensation to the various elements of the music industry for the digital home recordings of copyrighted music. In addition, the [AHRA] contains a serial copy management system that would prohibit the digital serial copying of copyrighted music.<sup>72</sup>

Hence, the rights of consumers are protected by (1) allowing digital audio recording devices to be bought and sold with minimal government regulation, and (2) allowing consumers to make a copy of an original recording for personal, noncommercial use.<sup>73</sup> The AHRA purports to

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67. *See id.* at 35.

68. *Id.* at 48. *See* 17 U.S.C. § 1001(5)(B)(ii) (1994) for the ultimate statutory embodiment of this sentiment.

69. *See Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d. at 629.

70. *See infra* Part IV.A.2.a.

71. *See* S. REP. NO. 102-294, at 32.

72. *Id.* at 30.

73. *See* 17 U.S.C. § 1008 (1994).

protect the rights of copyright holders, on the other hand, by (1) creating a royalty fund to compensate them for anticipated copying,<sup>74</sup> and (2) requiring that digital audio recording devices incorporate a serial copy management system in order to prevent them from making serial copies.<sup>75</sup> Hence, a consumer may make a copy of an original recording, but a DAR device must not be able to make a copy of a copy of an original recording.<sup>76</sup>

*a. The Royalty Fund*

The AHRA mandates that anyone manufacturing (or importing) and distributing a digital audio recording device (or medium)<sup>77</sup> shall pay a percentage of the transfer price of each such unit into a statutorily established royalty fund.<sup>78</sup> The royalty rate is two percent,<sup>79</sup> but may not exceed eight dollars per unit.<sup>80</sup> The monies that accrue in this fund are to be distributed between owners of sound recordings and owners of musical works.<sup>81</sup> The former group receives two-thirds of the proceeds, with the remaining one-third going to the latter group.<sup>82</sup>

Given that the purpose of this fund is “compensation to the various elements of the music industry for the digital home recordings of copyrighted music,”<sup>83</sup> one might logically assume that the sale of all devices commonly used to make digital home recordings would generate such royalties. However, due to the definitional framework of the AHRA,<sup>84</sup> PCs are exempt from this requirement. Although thousands<sup>85</sup>

74. See 17 U.S.C. § 1003 (1994).

75. See 17 U.S.C. § 1002 (1994).

76. “Serial copying” is defined by the AHRA as “the duplication in a digital format of a copyrighted musical work or sound recording from a digital reproduction of a digital musical recording.” 17 U.S.C. § 1001(11) (1994).

77. The analysis of this Comment is limited to the devices rather than the media.

78. See 17 U.S.C. § 1003(a).

79. See 17 U.S.C. § 1004(a)(1) (1994).

80. See 17 U.S.C. § 1004(a)(3) (1994). The maximum royalty amount for a “physically integrated unit containing more than 1 digital audio recording device” is \$12.  
*Id.*

81. See 17 U.S.C. § 1006 (1994 & Supp. IV 1998). See *infra* note 112 for a discussion of the distinction between sound recordings and musical works.

82. See 17 U.S.C. § 1006(b).

83. S. REP. NO. 102-294, at 30 (1992).

84. See 17 U.S.C. § 1001 (1994); *infra* Part IV.A.3.

85. Though it is impossible to quantify with any precision the number of such recordings that are created, copied, downloaded, etc., “thousands” represents a conservative estimate. The immensity of the number of MP3 files online has resulted in

of digital home recordings are made and exchanged using PCs on a daily basis, the “various elements of the music industry”<sup>86</sup> intended to be compensated for such copying receive no such compensation.

### b. *The Serial Copy Management System*

The Serial Copy Management System provision prevents the importation, manufacture, and distribution of DAR devices that are unlimited in their ability to make digital copies of digital copies.<sup>87</sup> That is, under the AHRA all DAR devices must incorporate specific measures geared toward preventing the copying of a copy.<sup>88</sup> The technical requirements of the SCMS were set forth in a separate document which was incorporated by reference into Senate Report 294 on the AHRA.<sup>89</sup> The AHRA also explicitly prohibits circumventing the requirements of the SCMS,<sup>90</sup> as well as the encoding of inaccurate information.<sup>91</sup>

### 3. *Important AHRA Definitions*

Although, as discussed above, personal computers are entirely capable of copying digital recordings,<sup>92</sup> the AHRA deliberately exempted PCs.<sup>93</sup> This exemption is found in two distinct provisions, which this Comment refers to as the “primary purpose” provision<sup>94</sup> and the “material object”

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the creation of a Web service geared expressly toward helping MP3 users locate, download, and trade the particular files (i.e., songs) that they are seeking. This service, Napster, describes itself as “an application that takes the hassle out of searching for MP3s.” Napster, *So, What the Heck is Napster?* (visited June 19, 2000) <<http://www.napster.com/whatsnapster.html>>. The service goes on to promise, “No more broken links, no more slow downloads, and no more busy, disorganized FTP sites. With Napster, you can locate and download your favorite music in MP3 format from one convenient, easy-to-use interface.” *Id.* Napster has been sued by the Recording Industry Association of America for enabling and encouraging the copying of copyright-protected recordings. *See infra* note 185. *See also* DONALD S. PASSMAN, ALL YOU NEED TO KNOW ABOUT THE MUSIC BUSINESS 385-86 (2000).

86. S. REP. NO. 102-294, at 32.

87. *See* 17 U.S.C. § 1002 (1994).

88. *See id.* For example, through digital encoding, which identifies copyright and generation status, a DAR device must be unable to make a copy of a digital audio recording that it perceives already to have been copied from an original. *See* GRAVES, *supra* note 11, at 9.

89. *See* S. REP. NO. 102-294, at 17-30. A detailed exploration of the specific technical measures necessitated by the AHRA’s SCMS requirement is not necessary for the purposes of this Comment. Suffice it to say that whatever these requirements may be, they need not be incorporated into personal computers.

90. *See* 17 U.S.C. § 1002(c).

91. *See* 17 U.S.C. § 1002(d)(1).

92. *See supra* note 48.

93. *See supra* Part IV.A.1.

94. *See* 17 U.S.C. § 1001(3) (1994).



provision.<sup>95</sup>

*a. The Primary Purpose Provision*

The first part of the AHRA's exemption of PCs is the "primary purpose" element of the definition of DAR devices:

A 'digital audio recording device' is any machine or device of a type commonly distributed to individuals for use by individuals, whether or not included with or as part of some other machine or device, the digital recording function of which is designed or marketed for the primary purpose of, and that is capable of, making a digital audio copied recording for private use . . .<sup>96</sup>

This language clearly excludes PCs from the definition of DAR devices, due to the fact that no personal computer is distributed with the "primary purpose"<sup>97</sup> of making "digital audio copied recordings."<sup>98</sup> Even if an individual purchased a PC with the intention of using it solely to make copies of compact discs, the resulting copies would not be "digital audio copied recordings" under the AHRA.<sup>99</sup>

*b. The Material Object Provision*

The second facet of the AHRA's personal computer exemption arises from the definition of a "digital musical recording" as "a material object . . . in which are fixed, in a digital recording format, only sounds, and material, statements, or instructions incidental to those fixed

95. See 17 U.S.C. § 1001(5)(B)(ii) (1994).

96. 17 U.S.C. § 1001(3).

97. This term is defined in Senate Report 294 as "a purpose that exceeds 50 percent of all purposes." S. REP. NO. 102-294, at 47 (1992).

98. A "digital audio copied recording" is defined as "a reproduction in a digital recording format of a digital musical recording." 17 U.S.C. § 1001(1) (1994). Senate Report 294 gives an example: "[A] digital audio recording made from a commercially released compact disc or audio cassette, or from a radio broadcast of a commercially released compact disc or audio cassette, would be a 'digital audio copied recording.'" S. REP. NO. 102-294, at 47.

99. This conclusion rests on the assumption that the PC in question was not designed or marketed for the primary purpose of copying CDs. If a PC did have such a primary purpose, then one may question whether it would still be a PC, or whether perhaps it would be a new class of machine. Indeed, it seems to be a fundamental characteristic of PCs that they lack any primary purpose at all, being inherently versatile tools. The U.S. District Court for the Central District of California recognized (and struggled with) a version of this illogical result of the AHRA's PC exemption, only to be reversed by the Ninth Circuit Court of Appeals. See *infra* Part V.B.

sounds.”<sup>100</sup> This suggests that a song which exists on the hard drive of a personal computer, which certainly contains more than just “material . . . incidental to those fixed sounds,”<sup>101</sup> will not be considered to be a digital musical recording. This impression is confirmed by the subsequent lines of the AHRA, which clarify that a “‘digital music recording’ does not include a *material object* . . . in which one or more computer programs are fixed.”<sup>102</sup> Hence, once a song finds its way onto the hard drive of a PC, it is no longer a “digital music recording,” and is therefore exempt from the restrictions of the AHRA.

Through the AHRA, Congress sought to compensate music copyright holders for digital music piracy. Nevertheless, the AHRA doubly<sup>103</sup> exempts personal computers from this attempt, in spite of the fact that PCs have become the ultimate digital audio recording device: (1) PCs are exempt because it is not their “primary purpose” to make digital audio copied recordings, and (2) PCs are exempt because their hard drives, on which songs ripped from a CD exist, also happen to contain materials unrelated to those songs. Thus, it is by virtue of the versatility of their products that the manufacturers and distributors of today’s PCs are not required to (1) contribute to the compensatory royalty fund of the AHRA or (2) incorporate the SCMS systems mandated by the AHRA.

#### *B. Digital Performance Right in Sound Recordings Act of 1995*

The Digital Performance Right in Sound Recordings Act of 1995<sup>104</sup> has immediate implications for the realm of digital music piracy, but is limited in its scope to digital copying by the “uploader,”<sup>105</sup> not by the “downloaders”<sup>106</sup> who represent the main focus of this Comment.<sup>107</sup> Outlining the basic purview of this amendment to the Copyright Act will allow a more complete understanding of the current status of this issue.

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100. 17 U.S.C. § 1001(5)(A)(i) (1994).

101. *Id.*

102. 17 U.S.C. § 1001(5)(B)(ii) (emphasis added).

103. The primary purpose provision and the material object provision appear to accomplish the same goal: exempting personal computers from the AHRA. The reason for the existence of both provisions is unclear.

104. Pub. L. No. 104-39, 109 Stat. 336 (1995) (codified as amended in scattered sections of 17 U.S.C.).

105. The term uploading refers to transferring a digital file onto a server or Web site; hence, the effect (whether brought about by a commercial Web site host or by a private user posting a file to a bulletin board) is to make the file available to others.

106. Conversely, downloading occurs when an end user copies or takes a digital file onto their own (personal) computer.

107. The distinction between uploaders and downloaders is, of course, somewhat artificial; a downloader may become an uploader at a moment’s notice, thereby taking his actions out of the realm of home recording and into the realm of Internet copyright infringement.

The bundle of rights granted to a musical work's copyright holder has long included the exclusive rights "to perform the copyrighted work publicly"<sup>108</sup> and "to display the copyrighted work publicly."<sup>109</sup> The Digital Performance Right in Sound Recordings Act of 1995 expanded upon this by adding an exclusive right "to perform [sound recordings] publicly by means of a digital audio transmission."<sup>110</sup> This new right applies "in the case of sound recordings,"<sup>111</sup> and hence may belong to someone other than the owner of the copyrights to the underlying musical work.<sup>112</sup> Essentially, the effect of the Act is that Web site owners (and other non-exempted<sup>113</sup> digital music transmitters) wishing to "webcast" recorded music via the Internet "should obtain a license authorizing the public performance of the recording from the owner of the copyright in the sound recording"<sup>114</sup> in addition to obtaining a license from the owner of the copyright in the underlying musical work.<sup>115</sup>

A brief look at the legislative intent behind this Act reveals its orientation toward online content providers rather than individual Web surfers.<sup>116</sup>

108. 17 U.S.C. § 106(4) (1994 & Supp. IV 1998).

109. 17 U.S.C. § 106(5).

110. 17 U.S.C. § 106(6) (Supp. IV 1998).

111. *Id.*

112. The distinction between musical works and sound recordings is not complex: the term "musical work" refers to the song itself, in its most abstract form, whereas the "sound recording" (or "master") is the embodiment or fixation of that work onto a recorded medium. *See* definitions in 17 U.S.C. § 101 (1994). Typically, a songwriter owns the copyright for the musical works that she composes (unless, of course, it is a "work for hire" or is otherwise assigned to a third party) while the recording company that pays for the production, manufacturing, and distribution of the phonorecords containing those songs owns the rights to exploit those sound recordings. *See* PASSMAN, *supra* note 85, at 197. Before 1995, the rights to license the performance of a song belonged exclusively to the owner of the underlying composition. Hence, radio stations that broadcast *Stairway to Heaven* must pay performance royalties to Jimmy Page and Robert Plant, the song's composers, even though Atlantic Records owned the sound recording that was being "performed." LED ZEPPELIN, *Stairway to Heaven*, on LED ZEPPELIN IV (Atlantic Records 1971).

113. For a complete list of the rather complicated exemptions afforded by the Digital Performance Right in Sound Recordings Act, see 17 U.S.C. § 114(d) (1994 & Supp. IV 1998).

114. Heather D. Rafter et al., *Streaming into the Future: Music and Video on the Internet*, 547 PLL/PAT. 605, 618 (1999).

115. *See id.* at 617-18.

116. *See* H.R. REP. NO. 104-274, at 10-11 (1995). Although Web surfing is often a passive exercise, it may also involve the active steps of posting files to bulletin boards; in the case of e-mail, it is increasingly common to send attachment files which may incorporate copyrighted materials.

Congress began to recognize the vitality and growth of digital transmission services like "music-on-demand" and "pay-per-listen." Congress predicted that interactive services are most likely to have a significant impact on traditional record sales and therefore pose the greatest threat to the livelihood of those whose income depends on revenues derived from traditional record sales. In recognition of this potential for impact on revenues, Congress specifically excluded interactive services from the limitations placed on the new exclusive performance rights in sound recordings.<sup>117</sup>

Practically speaking, it is much easier to identify, and collect damages from, commercial service providers and Web hosts than it is to ascertain which (potentially anonymous) individual may have posted an infringing file. Hence, "so far the trend has been to ignore the direct infringers and sue the bulletin board and/or the on-line server."<sup>118</sup> Moreover, the online provider is also in a much better position to prevent infringement by self-policing its sites for illegally posted materials.<sup>119</sup>

Thus, the Digital Performance Right in Sound Recordings Act of 1995 is geared toward recognition of a new type of right held by copyright owners.<sup>120</sup> The resulting need for Web hosts to acquire a license prior to webcasting copyrighted sound recordings will generate additional revenues for copyright holders (generally, in this instance, recording companies).<sup>121</sup> This Act does not have a direct impact on the issue of whether a PC should be considered a "digital audio recording device,"<sup>122</sup> and thus does not directly affect the problem of AHRA-sanctioned digital music piracy.

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117. Andrew Hartman, *Don't Worry, Be Happy! Music Performance and Distribution on the Internet is Protected After the Digital Performance Rights in Sound Recordings Act of 1995*, 7 DEPAUL-LCA J. ART & ENT. L. 37, 59-60 (1996) (citations omitted).

118. Adam P. Segal, *Dissemination of Digitized Music on the Internet: A Challenge to the Copyright Act*, 12 SANTA CLARA COMPUTER & HIGH TECH. L.J. 97, 126 (1996). Segal points to an early example of this trend in the case of *Frank Music v. CompuServe*, No. 93 Civ. 8153 (S.D.N.Y. filed Nov. 29, 1993), in which CompuServe (who settled) was targeted for contributory infringement based in part on the plaintiff's perception of their "deep pocket[s]." *Id.* Although Segal distinguishes between direct infringers (i.e., personal computer users who make copies of protected materials) and on-line providers (who are infringing indirectly, by making the copyrighted materials available for others to copy), the traditional division of infringers into "direct" and "indirect" may not apply completely in the Internet context. That is, the online provider must have made a copy in the first place, and hence is both a direct and an indirect infringer.

119. See Jonathan Gilbert, Note, *Computer Bulletin Board Operator Liability for User Misuse*, 54 FORDHAM L. REV. 439, 441 (1985-1986).

120. 17 U.S.C. § 106(6) (Supp. IV 1998).

121. See *supra* note 112.

122. 17 U.S.C. § 1001(3) (1994).

C. *No Electronic Theft Act of 1997*

Enacted in December of 1997, the No Electronic Theft (“NET”) Act<sup>123</sup> made a number of changes to titles 17 and 18 of the U.S. Code, “providing enhanced [copyright and trademark] protection in the digital age.”<sup>124</sup> Essentially, the focus of the NET Act was on criminalizing certain willful reproductions and distributions of protected works.<sup>125</sup> Although this Act does not have a direct impact on the central issue of this Comment (i.e., the PC exemption of the AHRA), the general relevance of the NET Act to the subject of digital music piracy merits a brief overview.

The NET Act added a definition of the term “financial gain”<sup>126</sup> to 17 U.S.C. § 101: “The term ‘financial gain’ includes receipt, or expectation of receipt, of anything of value, including the receipt of other copyrighted works.”<sup>127</sup> The explicit inclusion of “anything of value, including the receipt of other copyrighted works” clearly brings barter-oriented acts of infringement into the realm of punishable Copyright Act violations; hence, infringers whose profit is derived from trading illegal copies, rather than directly selling them for cash, may not avoid liability.<sup>128</sup>

The NET Act next amended 17 U.S.C. § 506(a) so that individuals willfully reproducing or distributing copyrighted works, “including by electronic means,”<sup>129</sup> are *criminally* liable (under 18 U.S.C. § 2319) for such infringements only if the retail value of the infringed works exceeds \$1000,<sup>130</sup> hence, small-time operators are now exempt from criminal liability for copyright infringement.<sup>131</sup>

123. Pub. L. No. 105-147, 111 Stat. 2678 (1997).

124. Computer Crime and Intellectual Property Section, U.S. Dep’t of Justice, *The No Electronic Theft (“NET”) Act: Summary of Changes to the Criminal Copyright and Trademark Laws* (visited June 14, 2000) <<http://www.usdoj.gov/criminal/cybercrime/netsum.htm>> (summarizing recent changes in federal law) [hereinafter *NET Act: Summary of Changes*].

125. *See id.*

126. Pub. L. No. 105-147, § 2, 111 Stat. 2678.

127. 17 U.S.C. § 101 (Supp. IV 1998).

128. *See NET Act: Summary of Changes, supra* note 124.

129. Pub. L. No. 105-147, § 2, 111 Stat. 2678.

130. *See id.*

131. In August, 1999, a 22-year-old college student in Portland, Oregon, was convicted of “illegally distributing movies, music and software programs from his Web site in what federal prosecutors said was the first Internet piracy conviction under [the NET Act].” William McCall, *Student, 22, Pleads Guilty in Internet Piracy Case*, SAN DIEGO UNION-TRIB., Aug. 21, 1999, at A3. Even though this individual was not charging

#### D. *Digital Millennium Copyright Act of 1998*

Enacted in October, 1998, the Digital Millennium Copyright Act (“DMCA”)<sup>132</sup> is a complex package of amendments and additions geared toward bringing copyright law up to date with the explosion of digital modes of expression, communication, and (of course) copying.<sup>133</sup> On its face, the primary objective of the DMCA is to implement two World Intellectual Property Organization (“WIPO”) treaties.<sup>134</sup> It also includes the Online Copyright Infringement Liability Limitation Act,<sup>135</sup> the Computer Maintenance Competition Assurance Act,<sup>136</sup> and various other provisions “relating to the functions of the Copyright Office, distance education, the exceptions in the Copyright Act for libraries and for making ephemeral recordings, [and] ‘webcasting’ of sound recordings on the Internet.”<sup>137</sup> Due to its great magnitude and the fact that only bits and pieces of it relate to the issue of digital piracy, this Comment discusses only the relevant portions of the DMCA.

The two WIPO treaties implemented by the DMCA are the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty.<sup>138</sup> The fundamental purpose of these treaties, which were agreed upon in Geneva, Switzerland, in December, 1996,<sup>139</sup> is to ensure that each member country adequately provides for the protection (in digital media) of copyrights held lawfully in the other member countries.<sup>140</sup> This goal is achieved in the United States by the addition of a new chapter to Title 17 of the U.S. Code.<sup>141</sup> Primarily, the new chapter, entitled Copyright Protection and Management Systems,<sup>142</sup> proscribes “circumvent[ion of] a technological measure that effectively controls

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for the pirated works that he distributed through his Web site, he was convicted of criminal copyright infringement: the NET Act “makes it illegal to reproduce or distribute copyrighted works, even if they are distributed without charge.” *Id.* Hence, because thousands of copyrighted works were involved, the \$1000 threshold was exceeded, resulting in criminal liability even in the absence of a profit motive.

132. Pub. L. No. 105-304, 112 Stat. 2860 (1998).

133. For an excellent (and relatively brief) analysis of the scope of changes effected by the DMCA, see Mark Radcliffe, *Digital Millennium Copyright Act Forging the Copyright Framework for the Internet: First Steps*, 557 PLIPAT. 365 (1999).

134. See Pub. L. No. 105-304, 112 Stat. 2860.

135. *Id.*

136. *Id.*

137. U.S. Copyright Office, *The Digital Millennium Copyright Act of 1998: U.S. Copyright Office Summary*, at 1 (December 1998) <<http://lcweb.loc.gov/copyright>> [hereinafter *DMCA Summary*]. This wonderful 18-page document makes it possible to get the gist of the DMCA relatively quickly and painlessly.

138. Pub. L. No. 105-304, § 102, 112 Stat. 2860, 2861-62.

139. See *id.* at 2862.

140. See *DMCA Summary*, *supra* note 137, at 2.

141. See *id.*

142. 17 U.S.C. §§ 1201-1205 (Supp. IV 1998).

access to a work protected under this title.”<sup>143</sup> Moreover, Chapter 12 states that “[n]o person shall manufacture [or] import . . . any technology, product, service, [or] device . . . primarily designed or produced for the purpose of circumventing protection afforded by a technological measure that effectively protects a right of a copyright owner under this title . . . .”<sup>144</sup> Hence, both the importation of devices that circumvent copyright protection measures and the act itself of circumventing such technology are targeted by chapter 12 of 17 U.S.C.<sup>145</sup> It must be noted, however, that nothing in the DMCA requires the implementation of any particular technological copyright control measures,<sup>146</sup> rather, the focus of the Act is on preventing the circumvention of any such measures as are voluntarily adopted by manufacturers.<sup>147</sup>

The DMCA also proscribes the tampering with or alteration of copyright management information (“CMI”), whether printed visibly on the packaging of a product or encoded digitally within the underlying file.<sup>148</sup> Currently, the existence of digitally encoded copyright information (i.e., digital watermarking systems) is the exception rather than the rule,<sup>149</sup> hence, at least for the moment, the effect of 17 U.S.C. § 1202 is generally limited to the non-digital types of CMI (i.e., the title and author of the work and other information which may appear externally).<sup>150</sup>

143. 17 U.S.C. § 1201(a)(1)(A) (Supp. IV 1998).

144. 17 U.S.C. § 1201(b)(1) (Supp. IV 1998). This anti-circumvention portion of the DMCA, generally referred to as the “black box” provision, is “meant to protect the emerging class of technical methods (frequently referred to as ‘digital envelopes’ or ‘digital objects’) which are being used to protect digital works both on the Internet and on other media.” Radcliffe, *supra* note 133, at 385-86.

145. 17 U.S.C. §§ 1201-1205.

146. See *DMCA Summary*, *supra* note 137, at 4.

147. See *id.* See also *infra* Part VI (discussing the Secure Digital Music Initiative).

148. See 17 U.S.C. § 1202.

149. A digital watermark “imprints a unique identifier into a song file.” GRAVES, *supra* note 11, at 9. “As a result, a watermark survives most types of copying, and permits anti-piracy authorities to determine the source of a particular file no matter how many times it has been copied . . . .” *Id.* Most compact discs currently in existence, however, were manufactured before the threat of digital piracy necessitated such measures, and hence will be forever vulnerable. In the future, it is likely that CMI systems such as those foreseen by the DMCA will be increasingly common, as “the recording industry is developing a standardized watermark system that [will be encoded] into all new songs during the mastering process.” *Id.* At that point, the anti-CMI tampering measures of the DMCA will perhaps have a significant impact on digital music piracy.

150. See 17 U.S.C. § 1202(c).

Because personal computers are exempt from the AHRA, they do not need to incorporate the serial copying prevention mechanisms that are otherwise mandated by that act.<sup>151</sup> To some extent, this may be incongruous with the intentions of the DMCA; although the DMCA proscribes tampering with such systems, the AHRA explicitly excludes PCs from the group of devices that must incorporate these measures. If the PC exemption were eliminated, the AHRA and DMCA would work synergistically toward furthering copyright protection in the digital age.

Although there is no clear reason for the existence of this anomaly, there are at least two possible explanations. First, it is possible that the full effect of the AHRA's PC exemption had not yet been realized at the time of the DMCA's passage. The advent of MP3 technology, which became popular in this context only after the enactment of the DMCA, illuminated the negative implications of that exemption. Hence, the conflict between the AHRA and the DMCA may be the result of a congressional oversight. Second, one may speculate that Congress was aware of this conflict but chose not to end the AHRA's PC exemption due to pressure from the computer manufacturing industry.

## V. JUDICIAL INTERPRETATION OF RELEVANT LEGISLATION

### A. *Sony Corp. of America v. Universal City Studios, Inc.*

In 1983, the Supreme Court heard arguments, by copyright holders and technology manufacturers, that resemble the issues raised today by digital music piracy.<sup>152</sup> This case truly set the stage for judicial interpretation of the new generation of copyright law. The subject matter of the case was home taping of television shows using video tape recorders (VTRs, now known as video cassette recorders or VCRs).<sup>153</sup> The original plaintiffs (Universal et al.) were copyright holders of television shows and films who believed that Sony's new technology would lead to infringement of these copyrights.<sup>154</sup> That is, Universal argued that consumers were using Sony's Betamax VTRs "to record some of [Universal's] copyrighted works . . . thereby infring[ing] Universal's] copyrights."<sup>155</sup> Universal believed that the manufacturers of devices used by consumers to make copies of protected works should be responsible for compensating the copyright holders for their lost

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151. See 17 U.S.C. § 1002 (1994).

152. See *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417 (1984).

153. See *id.* at 420.

154. See *id.*

155. *Id.* at 420.



royalties;<sup>156</sup> Universal did not seek relief from the consumer.<sup>157</sup>

Although the Ninth Circuit Court of Appeals held that Sony's manufacture and sale of Betamax machines did constitute contributory infringement,<sup>158</sup> the Supreme Court reversed.<sup>159</sup> The key language of the decision came in the Court's recognition that, for the majority of Betamax users, the primary use of the machine was "time-shifting," which is:

the practice of recording a program to view it once at a later time, and thereafter erasing it. Time-shifting enables viewers to see programs they otherwise would miss because they are not at home, are occupied with other tasks, or are viewing a program on another station at the time of a broadcast that they desire to watch.<sup>160</sup>

The television programs at issue were initially broadcast to be viewed free of charge. Following the district court's findings,<sup>161</sup> the Supreme Court reasoned that a device that allowed a consumer to view such a show at the time of his or her choosing did not represent a significant negative impact on licensing revenues.<sup>162</sup> That is, there was no convincing evidence that time-shifting would result in less television viewing, so that the advertisement-based revenue scheme underlying the licensing of the protected works faced no obvious threat as a result of the sale of Betamax units.<sup>163</sup>

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156. See *id.* The same position was taken by the copyright holders in *Recording Indus. Ass'n of Am. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998). See *infra* Part V.B.

157. See *Sony Corp.*, 464 U.S. at 420. In *Recording Indus. Ass'n of Am.*, 29 F. Supp. 2d at 625, the suit arose before the product hit the market; nevertheless, it is safe to assume that even if the timing had been different, the plaintiffs would have recognized the futility (not to mention the public relations nightmare) of going after consumers rather than the manufacturer of the device.

158. See *Universal City Studios, Inc., v. Sony Corp. of Am.*, 659 F.2d 963, 975 (9th Cir. 1981). The infringement was contributory for the obvious reason that Sony was not accused of directly making the offending copies themselves; rather, they provided consumers (the direct infringers) with the tools necessary to infringe Universal's copyrights.

159. See *Sony Corp.*, 464 U.S. at 421.

160. *Id.* at 423.

161. See *Universal City Studios*, 480 F. Supp. at 469 (C.D. Cal. 1979).

162. See *Sony Corp.*, 464 U.S. at 456.

163. See *id.*

B. *Recording Industry Ass'n of America v. Diamond Multimedia Systems*

In 1998, Diamond Multimedia Systems (“Diamond”) was on the verge of manufacturing and distributing a portable device (the “Rio”) capable of recording and playing back MP3 files.<sup>164</sup> Weighing only ounces, the Rio connects to a PC, receives copies of MP3 files from the hard drive, and then (after disconnecting from the PC) allows the user to listen to the recordings via headphones.<sup>165</sup> The Recording Industry Association of America (“RIAA”), an association representing the major U.S. recording companies, became aware of this product; fearing that it would lead to significant illicit copying of the copyrighted music owned in large part by the major recording companies, RIAA sought a preliminary injunction preventing Diamond from releasing the Rio.<sup>166</sup>

The district court denied the motion for the injunction,<sup>167</sup> but made some interesting comments along the way. Having acknowledged the deliberate PC exemption of the AHRA,<sup>168</sup> the court then considered Diamond’s argument that because the songs played by a Rio come from a PC, and because a PC is not a “digital audio recording device,” the Rio does not make copies of “digital audio recordings.”<sup>169</sup> Essentially, Diamond argued that the Rio cannot be considered a digital audio recording device, and hence should be exempt from the auspices of the AHRA.<sup>170</sup> The court noted that this result could not be what Congress intended, because it would basically nullify the AHRA due to the fact that “[a]ny recording device could evade AHRA regulation simply by passing the music through a computer and ensuring that the MP3 file resided momentarily on the hard drive.”<sup>171</sup>

In the end, the district court denied RIAA’s request for a temporary

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164. See *Recording Indus. Ass’n of Am. v. Diamond Multimedia Sys., Inc.*, 29 F. Supp. 2d 624 (C.D. Cal. 1998). MP3 files, as discussed previously, are compact, digitized sound recordings that can be copied and transmitted easily and quickly between personal computers and over the Internet. See *supra* Part III.C.

165. See *Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d at 625. The Recording Industry Association of America chose to seek injunctive relief under the AHRA rather than pursuing a traditional copyright infringement claim because the AHRA forces this choice; that is, the AHRA explicitly prohibits copyright infringement claims. See 17 U.S.C. § 1008 (1994). Hence, rather than attack the Rio preemptively for contributory infringement, RIAA sought to receive a judgment that the device was in violation of the AHRA and therefore could not be released commercially. See *Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d at 625-26.

166. See *Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d at 625-26.

167. See *id.* at 625.

168. See *supra* Part IV.A.3.

169. See *Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d at 628.

170. See *id.*

171. *Id.* at 630.

injunction in spite of its conclusion that the Rio probably *is* a DAR device.<sup>172</sup> The court found that RIAA “established a probability that the Rio is a ‘digital audio recording device,’”<sup>173</sup> but that granting an injunction preventing the release of the Rio would be pointless, noting that “incorporating SCMS into the Rio appears an exercise in futility.”<sup>174</sup> Continuing, the court stated that “[b]ecause a Rio with SCMS would not violate [the SCMS requirement of the AHRA], and because a Rio without SCMS is functionally equivalent to a Rio with SCMS,”<sup>175</sup> the Rio did not presumptively violate the AHRA.<sup>176</sup> Nevertheless, the court recognized “the Rio’s [potential] contribution to the traffic in illegal MP3 files,”<sup>177</sup> opining that “[t]his type of injury is precisely why the AHRA provides for royalties.”<sup>178</sup>

The Ninth Circuit Court of Appeals approved of the district court’s assessment that the Rio did not violate the AHRA’s SCMS requirement<sup>179</sup> and agreed that the Rio should not be blocked from entering the market.<sup>180</sup> However, while the district court had rejected Diamond’s argument that the Rio is not a DAR device,<sup>181</sup> the Ninth Circuit reached the opposite conclusion.<sup>182</sup> The Ninth Circuit noted that

the [AHRA] seems designed to allow files to be “laundered” by passage through a computer, because even a device with SCMS would be able to download MP3 files lacking SCMS codes from a computer hard drive, for the simple reason that there would be no codes to prevent the copying.<sup>183</sup>

Finally, the Ninth Circuit acknowledged the district court’s recognition

172. *See id.* at 633.

173. *Id.* at 632.

174. *Id.*

175. *Id.* Because the Rio lacks the capacity to output its MP3 files to other devices, it technically meets the SCMS requirement of the AHRA, which essentially mandates that a DAR device be incapable of allowing further downstream copying. *See* 17 U.S.C. § 1002(a)(3) (1994).

176. *See Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d at 632.

177. *Id.* at 627.

178. *Id.* The basic requirement of the AHRA (other than the SCMS element) is its compensation (royalty fund) element; thus, the district court reasoned that if the Rio were a DAR device, then the appropriate result would be for Diamond to pay into the AHRA royalty fund, not for the court to enjoin the commercial release of the product. *See id.*

179. *See Recording Indus. Ass’n of Am. v. Diamond Multimedia Sys., Inc.*, 180 F.3d 1072, 1078-79 (9th Cir. 1999).

180. *See id.* at 1081.

181. *See Recording Indus. Ass’n of Am.*, 29 F. Supp. 2d at 628.

182. *See Recording Indus. Ass’n of Am.*, 180 F.3d at 1081.

183. *Id.* at 1079.

of the PC exemption as essentially eviscerating the AHRA, but concluded that “[w]hile this may be true, the Act seems to have been expressly designed to create this loophole.”<sup>184</sup>

This case is distinguishable from the larger issue of digital music piracy enabled by the AHRA’s PC exemption because of the Rio’s lack of downstream capability. That is, although the Rio cannot output the digital sound files that it contains (hence making any concern about serial copying using a Rio moot), a computer (or network of computers, whether Internet or Intranet) is capable of infinite output. A PC not only can output DARs to other particular PCs, but also can output them to the whole world by uploading them to a Web site or bulletin board.<sup>185</sup> Although such uploading may be considered an infringement of copyright under the DMCA,<sup>186</sup> the Digital Performance Right in Sound Recordings Act,<sup>187</sup> or the NET Act,<sup>188</sup> it seems frivolous to allow these acts of copying to evade the AHRA due to its PC exemption. Moreover, the purpose of the AHRA is distinct from that of traditional copyright law; while the latter is geared toward deterring and punishing infringing behavior, the former seeks (1) to implement technical measures to prevent infringing behavior, and (2) to compensate copyright holders for instances of infringing behavior that cannot be prevented.<sup>189</sup> Thus, though acts of copying that take advantage of the AHRA’s PC exemption may be punishable by other copyright provisions, the avoidance of the AHRA does constitute a separate set of negative

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184. *Id.* at 1078.

185. Additionally, the online service Napster, which erupted after the Rio litigation, allows MP3 users to share their files directly with one another, without needing to utilize a bulletin board or a Web site. *See supra* note 85. “Napster ensures the availability of every song online by connecting you live with millions of songs found in other MP3 listeners’ music collections. With Napster, you’ll never come up empty handed when searching for your favorite music again!” *Napster* (visited Nov. 14, 1999) <<http://www.napster.com>>. Napster’s copyright policy explicitly claims to be in compliance with the DMCA due to its lack of control over the content which may be accessed through it. *See Napster Copyright Policy* (visited June 17, 2000) <<http://www.napster.com/dmca.html>>. Moreover, it encourages users to “download Napster now to start building your MP3 collection today—faster and easier than you ever dreamed possible!” *So, What the Heck is Napster?* (visited June 17, 2000) <<http://www.napster.com/whatisnapster.html>>. Of course, copying the aforementioned MP3 files will generate no royalties for the copyright holder due to the fact that they are not made by a “digital audio recording device” under the AHRA’s definitions. *See* 17 U.S.C. § 1001 (1994); *see also supra* Part IV.A.3. The emergence of Napster therefore illustrates both the ease and speed with which a PC user may build a library of illegal recordings, and the failure of current copyright law to discourage such piracy or to compensate copyright holders in the manner intended by the AHRA.

186. Pub. L. No. 105-134, 112 Stat. 1860 (1998). *See supra* Part IV.D.

187. Pub. L. No. 104-39, 109 Stat. 336 (1995) (codified as amended in scattered sections of 17 U.S.C.). *See supra* Part IV.B.

188. Pub. L. No. 105-147, 111 Stat. 2678 (1997). *See supra* Part IV.C.

189. *See supra* Part IV.A.2.

consequences. Congress should close down this exemption and accept the obvious: PCs make digital audio recordings and will be increasingly instrumental in digital music piracy in the coming years unless it is made absolutely clear that this will not be tolerated. The DMCA and the NET Act do not accomplish this goal directly, and the existence of the AHRA in its presently eviscerated condition may do more harm than good. By providing an illogical loophole through which current and future generations of digital audio pirates can skirt the AHRA, Congress is sending a mixed message. Rules that are inconsistent are inherently weak and confusing; allowing some instances of illegal copying (i.e., those made using a PC) to be nonviolative of the AHRA will have a legitimizing effect on that infringing behavior, which in turn will undermine the broader goal of discouraging such behavior.

## VI. THE SECURE DIGITAL MUSIC INITIATIVE

The Secure Digital Music Initiative ("SDMI") represents the music industry's attempt to get together and find a way to prevent digital music piracy.<sup>190</sup> The focus is on getting the necessary technology in place so that digital music piracy will become a non-issue, or at least very difficult to accomplish.<sup>191</sup> The key technologies being explored are "digital watermarking" and encryption.<sup>192</sup> Watermarking is an old technology, having been used for centuries on paper currency. Digital watermarking involves encoding CDs (and any other form of sound files) with information about the copyright status of the recording, and whether or not it can be copied.<sup>193</sup> There is some skepticism about whether technological measures could ever adequately prevent digital music piracy from occurring.<sup>194</sup> Even if such technologies were

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190. See Recording Indus. Ass'n of Am., *SDMI: Overview* (visited Aug. 28, 2000) <<http://www.riaa.com/Music-SDMI-1.cfm>>.

191. See *id.*

192. See GRAVES, *supra* note 11, at 8.

193. See *id.* at 9.

194. See *id.* at 8-11. Also, consider the recent emergence of software capable of cracking the encryption of all DVDs. See Bloomberg News, *Hollywood Studios Allege DVD Piracy in Suit* (visited Jan. 17, 2000) <<http://news.cnet.com/news/0-1006-202-1523695.html>>. The software, which was made available by three New Yorkers via the World-Wide Web (who, as a result, are being sued by eight major film studios), "unscrambles a security code on DVDs that is supposed to prevent their duplication." *Id.* On the offending Web site, one of the defendants allegedly encouraged DVD piracy, stating, "Yes, you can trade DVD files over the Internet. You can break the encryption on any DVD." *Id.*

implemented, they would affect only new releases. The recording industry may be willing to write off their entire back catalogs (in terms of digital piracy) due to the reality that they cannot go back and put watermarks on all the CDs that are already out there.<sup>195</sup> Hence, though the SDMI may in the future increase the difficulty of copying from CDs (as well as from other digital formats), it does not represent a complete solution to this problem.<sup>196</sup>

## VII. DISCUSSION

Fueled both by the omnipresence in modern society of high-speed computers with high-speed connections to each other and by the popularity of MP3 audio compression technology, digital music piracy is "rampant."<sup>197</sup> Unlike the music pirates of previous decades, today's music pirates are predominately consumers seeking to acquire personal use of copyrighted recordings for free or in exchange for providing access to recordings that they already possess. Current copyright law does not provide the tools necessary to combat this trend; bringing infringement actions against consumers involves problems of proof, judicial economy, and public relations. The drafters of the Audio Home Recording Act recognized the danger of serial digital copying, and the AHRA represents a positive step toward addressing the unique problem posed by consumer access to digital audio recording devices. The exemption of PCs from the AHRA, though perhaps of minor practical significance in 1992, has developed into a major loophole which will prevent the Act from having any meaningful impact on this problem in the coming years. This statutory loophole should be closed, resulting in the following primary effects: (1) PC manufacturers will be required to incorporate Serial Copying Management Systems (SCMS), in order to thwart the serial copyability of digital music files via their products; (2) PC manufacturers will be required to contribute a percentage of their sales revenues into the AHRA's royalty fund, in order to compensate copyright holders for the lost revenues which will inevitably occur as some degree of digital music piracy continues; and (3) a legal absurdism will end.

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195. Telephone Interview with Mark Mooradian, Senior Analyst, Jupiter Communications (Aug. 4, 1999).

196. Skepticism about the SDMI's ability to thwart digital music piracy abounds: "Any system that can be invented to tag music can be hacked to remove the tags." Wendy M. Grossman, *Cyber View: Putting the Squeeze on Music*, SCI. AM., May 1999, at 38.

197. Sara Robinson, *MP3.com Plans Net Service for Music Swapping*, SAN DIEGO UNION-TRIB., Jan. 12, 2000, at C1.

### A. Incorporation of Serial Copying Management Systems

The logic behind the SCMS requirement is strong: those who introduce into the marketplace a product capable of making infinite, perfect copies of copyright-protected materials should make a strong effort not to enable would-be pirates to use that product for illegal copying. The emphasis of the AHRA's SCMS requirement is therefore on prevention of *serial* copying. As was decided in *Sony Corp. of America v. Universal City Studios, Inc.*,<sup>198</sup> a single copy for personal use may be presumed to be a non-infringing fair use.<sup>199</sup> Rather, it is the copying of a copy (with no concurrent loss of fidelity) that the SCMS requirement seeks to prevent.

Certainly, some technology products might not be able to prevent their own illicit use. Photocopiers, for example, may be fundamentally incapable of identifying a piece of paper containing a protected image. Personal computers, on the other hand, are inherently "smart" machines that are eminently trainable. PC manufacturers could implement some unobtrusive method of identifying illegitimate music files. All PCs (or, perhaps more accurately, their operating systems) already identify countless file characteristics (e.g., Windows versus Macintosh, software of origin) as part of their regular operations. By working in conjunction with the programmers of the system software packages used by their machines, or with the researchers currently at work on the SDMI project, an industry standard for identifying illegitimate audio files could be achieved.

The truly forward-thinking computer manufacturing industries might incorporate SCMS measures on their own initiative, perhaps working with the recording<sup>200</sup> and music publishing<sup>201</sup> industries to develop the best possible standards of encryption and digital watermarking.<sup>202</sup> By doing so, manufacturers could attempt to negotiate their way into an optimal position with respect to the royalty fund requirement of the AHRA, while simultaneously reining in the infringing activities that

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198. 464 U.S. 417, 433 (1984).

199. See 17 U.S.C. § 106 (1994).

200. The RIAA is the logical representative of the recording industry as a whole.

201. Broadcast Music Incorporated (BMI) and the American Society of Composers, Authors, and Publishers (ASCAP) are the two entities responsible for collecting and distributing performance-related royalties to musical copyright holders. See PASSMAN, *supra* note 85, at 233-37.

202. The SDMI does represent an attempt at this, but appears to lack momentum.

their products are enabling.

The astute critic of this scheme should point out that MP3 files contain no SCMS information, thus rendering any requirement for PCs to incorporate SCMS technology useless. That is, how can my PC ascertain the legitimacy of an MP3 file if MP3 files by their nature contain no SCMS information? The best counterargument is that there will always be instances of technological evasion, and the AHRA-mandated royalty fund is a valid way of addressing the inequities created by such instances of illegal copying. Based in part on the likelihood that future generations of MP3-like files will incorporate SCMS information,<sup>203</sup> it makes sense to require personal computers to be SCMS compliant. Of course, if such actions were purely voluntary, then those PCs that did not incorporate SCMS systems would potentially be more marketable than their SCMS-compliant competitors. By requiring all PCs to comply with the AHRA's SCMS requirement, any potential advantage for makers of noncompliant machines would be eliminated.

### *B. Payments to the AHRA-Mandated Royalty Fund*

Requiring manufacturers of consumer goods to bear the cost of the externalities resulting from their products is not a novel concept. Indeed, the rise of PCs resembles the development of the railroads in the 19th century. In its infancy, society was well-served by allowing both industries to move forward freely, unimpeded by burdensome regulation. But just as the railroads eventually were forced to take full responsibility for all the results (i.e., accidents and destruction) of their actions once the underlying industry was firmly established, so too should computer manufacturers and related industries bear the costs associated with their businesses. Holding PC makers accountable under the same system in which manufacturers of other digital recording devices are held responsible represents a significant step toward this logical goal.

It is true that, unlike DAT and CD-R machines, PCs are not used exclusively for making digital audio recordings. It would seem fair to allow some type of proration to take this into account. The important thing to recognize is that, one way or another, the consumer will inevitably end up bearing part of the cost associated with lost copyright

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203. Although MP3 files, which will likely be in existence for years to come, lack generation status and other digitally watermarked information necessary to prevent illegal copying, the next generations of digitally compressed audio files are already appearing. See GRAVES, *supra* note 11, at 13-15. Advanced Audio Coding (AAC) and MPEG-4 are two examples of such future improvements on MP3 compression, and are favored by recording companies, not only for their superior sound quality but also because of their encryption potential. See *id.*



value. Whether or not the manufacturers are required to pay into the AHRA fund, the net result, to some degree, will be increased price to the consumer.<sup>204</sup> Nevertheless, this is a more just result than allowing computer manufacturers and consumer freeloaders to profit at the expense of music copyright holders.

The royalty fund component of the AHRA is purely anticipatory. It requires manufacturers of devices that will inevitably be used for illegal copying to share a percentage of their revenues with the copyright holders whose intellectual property drives, in part, the demand for those devices. In a perfectly efficient economy, this cost will be passed on to the consumer. Because all manufacturers of digital audio recording devices are required to participate in the AHRA, theoretically they will all raise the price of their goods to defray the royalty fund requirement. Thus, consumers (some of whom are the source of the lost royalties which necessitate the fund in the first place) will ultimately pay their own way. In the event that PC manufacturers continue to be exempt from the AHRA's royalty fund, the cost of acquiring legitimate copyrighted materials will rise.<sup>205</sup> Hence, the loss caused by the piracy will still be borne by the consumer. The strongest argument for passing the loss on to the consumer by way of the AHRA royalty fund rather than by way of natural (i.e., nonregulatory) economics is one of consistency: the AHRA exists and is a manifestation of Congress' attempt to address legislatively a recognized problem. As such, it makes sense for that solution to be applied in all contexts in which the problem occurs. The use of the royalty fund to remedy the loss of DAT-based piracy but not of PC-based piracy is undesirable for its inconsistency, if nothing else.

Arguably, the same result could be achieved by deregulating digital audio recording devices altogether. Record companies could charge thirty dollars for a single compact disc, thereby passing the loss caused by digital music piracy on to the consumer, who has to pay more for the

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204. Consider, for example, the price of a new piece of software, which may range from \$30 to \$300 or more for a single CD. Compared to the price of a music CD, roughly \$15, software is expensive. This may reflect the fact that software companies, who have grown accustomed to piracy of their wares, have increased the price of their product to reflect the lost revenues resulting from that inevitable piracy. Software is designed to be "loaded" onto a computer's hard drive, thus lending itself to a relatively high level of "loading" by users other than the purchaser. This phenomenon has only recently spread to digital music piracy, and therefore music recording companies are still coming to grips with its financial implications.

205. See *supra* note 204.

CD, and the PC manufacturers, who will sell fewer machines due to the higher cost of associated products. The logic of closing the AHRA's PC exemption seems stronger, however. If nothing else, it at least sends the message that Congress will not turn a blind eye to the illegal degradation of copyright. Though one may argue that a legislative solution is inherently more cumbersome than other possible solutions (i.e., letting the price naturally reach the equilibrium which reflects all related externalities, such as the loss caused by piracy), in this case the legislative machinery of the AHRA is already in place. In this respect, closing the loophole represents a highly efficient solution inasmuch as it merely extends existing law to the full extent of its logical reach.

### *C. Ending the PC Exemption Will End a Legal Absurdism*

It is difficult to respect, or perhaps even to obey, laws that create legal absurdisms or are internally inconsistent. Fundamentally, a law that says that "X is not X" cheapens those who follow it, those who drafted it, and the system that supports it. By defining "digital audio recording devices" so as not to include PCs, Congress has created just such an absurdism. Though it was not so obviously the case at the time the AHRA was drafted, it is absolutely obvious now that personal computers are in fact the ultimate digital audio recording devices. Thousands (perhaps millions) of digital audio recordings are copied, shared, and transmitted every day.

In addition to benefiting the general purposes of truth and logic, ending the legal absurdism of the AHRA PC exemption will also have a more practical result: it will end the potential for PCs to be used to launder music files in evasion of the AHRA. As the Ninth Circuit Court of Appeals recognized in *Recording Industry Ass'n of America v. Diamond Multimedia Systems*,<sup>206</sup> this potential remains very real as a result of the fact that any musical file which resides even momentarily on a PC's hard drive is effectively removed from the auspices of the AHRA for the rest of its existence.

### *D. The Weakness of Alternative Approaches*

Some people may recoil at the thought of a regulatory solution to a problem such as digital music piracy. Indeed, why not just let the market price of copyrighted goods naturally adjust itself to reflect the losses created by piracy?<sup>207</sup> Hasn't this approach worked reasonably

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206. 180 F.3d 1072, 1079 (9th Cir. 1999).

207. See *supra* note 204.

well in the case of software?<sup>208</sup> While this may be a valid point in and of itself, it fails in this context simply because the AHRA exists; given that the AHRA represents Congress' solution to the problem of digital music piracy, this legislation should be updated as necessary to allow it to achieve its intended goal. Ending the PC exemption certainly represents a less dramatic way of addressing the problem of PC-based music piracy than scrapping the entire AHRA, although that too would at least produce a consistent result.

The argument can also be made that it is the obligation of copyright holders, not hardware and software manufacturers, to protect their own materials. Why not require record companies to make commercially released recordings harder to copy? The answer is that PCs are fundamentally versatile tools, and that methods of de-encryption will always arise.<sup>209</sup> For this reason, the AHRA's royalty fund is a sensible way of addressing the problem of digital music piracy. Notwithstanding the current AHRA definition, PCs *are* digital audio recording devices, and therefore should not be exempt from this fund.

It is possible to question the wisdom of having extensive copyright protection. For those individuals who believe that intellectual property belongs in the public domain and should not receive such strong statutory protection, the ability of consumers to make perfect serial copies may seem like a desirable result. However, it is beyond the scope of this Comment to entertain such a fundamental evaluation of American copyright law. Rather, this Comment recognizes that the current system is based on providing such protection for intellectual property and that the AHRA, as a recent attempt to allow that system to function efficiently in the digital age, is an inconsistent and flawed measure in its present form. Thus, rather than engage in a "law and economics" analysis of whether society might experience a net benefit through a reduction in the amount of copyright protection given to music,<sup>210</sup> this Comment relies on the assumption that the current level of protection is efficient.

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208. *See id.*

209. *See GRAVES, supra* note 11, at 10.

210. For example, it is possible that a musician's incentive to create music stems from the intrinsic need of an artist to create, as opposed to the more pecuniary motivations underlying, say, pharmaceutical research and development. Hence, it may be that decreased copyright protection for musical works would reduce the cost of consumer access to those works without significantly chilling the underlying creative behavior.

Those who would oppose ending the AHRA's PC exemption may argue that computers are fundamentally different than other digital audio recording devices, and that Congress acted correctly in exempting them from the Act's reach. Indeed, PCs are different than other digital audio recording devices: they are much more powerful and versatile than dedicated digital audio recording devices. But this difference actually argues in favor of ending the exemption. PCs are so much more powerful and versatile that they may someday drive other digital audio recording devices into total obsolescence.<sup>211</sup>

In this author's opinion, a primary reason for the existence of the PC exemption is that at the time the AHRA was written, PCs were not, practically speaking, functional as digital audio recording devices. Today, as a result of advances in the machines themselves and the growing popularity of MP3 files, they are. Ending the AHRA's PC exemption is the easiest and the most effective, logical, and consistent solution to the growing problem of PC-based digital music piracy.

### *E. Conclusion*

When the AHRA was drafted, computers were limited in their ability to copy and transfer large multimedia files; this is no longer the case. In just a few more years, using your PC and the Internet to copy CDs will be even faster and easier than it is today. Just five years ago, advertising on the Web was unheard of, forbidden by an unwritten law of netiquette.<sup>212</sup> Today, Web advertising is big business, illustrating the metamorphosis of the Internet from a mode of communication to a major commercial enterprise zone. The time has come to increase industry accountability for the hotbed of digital music piracy that it has created. Eliminating the personal computer exemption of the AHRA is an appropriate step to take to accomplish this goal. Ultimately, all parties—consumers, computer manufacturers, artists, and recording companies—may benefit from an environment in which non-serial digital copying for personal use is tolerated, commercial distribution of music online is enabled, and digital music piracy is thwarted.

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211. Why bother having a DAT or a DVD player if your PC can perform the same functions?

212. See Joshua A. Marcus, Note, *Commercial Speech on the Internet: Spam and the First Amendment*, 16 CARDOZO ARTS & ENT. L.J. 245, 246-47 (1998).