

Before the
Library of Congress
Copyright Office
Washington, D.C.

In The Matter of)
)
Exemption to Prohibition on Circumvention)
Of Copyright Protection Systems for)
Access Control Technology)

Docket No. RM 2005-11

COMMENTS OF
THE INTERNET ARCHIVE

December 1, 2005

Re: RM 2005-11 –17 USC §1201 Exemptions Notice of Inquiry

Proposed classes of works:

- 1) *Computer programs and video games distributed in formats that have become obsolete and that require the original media or hardware as a condition of access.*
- 2) *Computer programs and video games distributed in formats that require obsolete operating systems or obsolete hardware as a condition of access.*

Thank you for this opportunity to request the renewal of the exemption from Section 1201 of the Digital Millennium Copyright Act that we secured in the 2003 rulemaking. Thanks to the previous exemption of 2003, the Internet Archive has successfully been able to archive numerous computer programs and video games in obsolete formats without violating the anti-circumvention provisions of 17 U.S.C. §1201. These computer programs and video games have now been safely stored in our digital archive for the benefit of generations to come. We would like to take this opportunity to explain once again why this exemption is imperative for our archiving activities. We would also like to request a second exemption for a class of works

which requires obsolete operating systems or obsolete hardware as a condition of access, for reasons discussed below.

The Internet Archive is a 501(c)(3) nonprofit archive that preserves digital works in order to provide a historical record to future generations. Since 1996, the Internet Archive has been diligently preserving digital artifacts for the benefit of scholars, historians, and the general public. Without preserving these digital works, future generations will have no concrete record of the progress of the digital revolution. Our culture now produces more and more artifacts in digital form. The Archive's mission is to help preserve those artifacts and create an Internet resource for researchers. Among other things, the Archive includes an enormous collection of historic computer programs and video. The Internet Archive does not make copyrighted works generally available to the public if the copyright is still valid. As a result of this policy, we restrict access to the computer programs or video games we archive unless we have received permission from the copyright owner.

The purpose of this Comment is to demonstrate three things: (1) that the Internet Archive has successfully used the previous exemption to legally archive valuable content for the past three years, (2) that the Internet Archive needs this same exemption to continue preserving content for the next three years, and (3) that the Internet Archive also would benefit from an exemption covering works distributed in formats that require obsolete operating systems or hardware as a condition of access, if in fact such practical restrictions on access constitute "technological protection measures" within the meaning of the Digital Millennium Copyright Act.

Generally speaking, it is important to preserve old computer programs and video games because the formats have become obsolete and because the recording media are deteriorating.

For example, years ago floppy disks tended to be the primary medium used to store computer programs and video games. These disks, such as 8 inch and 5 ¼ inch floppy disks, are now obsolete formats. Additionally, these floppy disks, which are essentially polymers with magnetic coatings housed in flexible casings, easily can degrade when become exposed to the elements. This exposure can result in significant data loss. Additionally, there is always the possibility of data loss when magnetic media, such as floppy disks, come into contact with magnetic fields.¹

Floppy disks also encounter other problems.² Particles which retain the coded information in the tape layer can become unstable, leading to a loss of signal quality and eventually all information. Temperature and humidity fluctuations may cause the magnetic and base layers to separate.³ However, as an archive, we are doing our best to fight against the degrading of these media in order to preserve these works in their working format. We are working hard to ensure that the explosion of digital creativity is not lost to history.

1) Computer programs and video games distributed in formats that have become obsolete and that require the original media or hardware as a condition of access.

1. Summary of Argument

The Internet Archive has been given large collections of copyrighted computer programs and video games in formats that are degrading and have become obsolete. We first try to preserve these works by archiving them in modern storage systems that are more stable for preservation purposes. Once a work has been copied, the Internet Archive must be able to gain access to the reproduction to verify the accuracy, completeness, and functionality of the copied work. However, these copyrighted works often are equipped with 'original only' access controls

¹ <http://www.hatii.arts.gla.ac.uk/research/BrLibrary/rosgowrt.pdf>

² These degradation problems apply to other devices as well: Audio cassettes, reel-to-reel tapes, videotapes, computer tapes, and any other recording media using magnetic tape are all at risk.

³ <http://www.naa.gov.au/recordkeeping/rkpubs/advices/advice5.html>

that can make verification impossible without circumvention. It is absolutely critical that the Internet Archive can verify the accuracy of archived copies by circumventing access control measures where necessary. Without this verification, the very purpose of the Archive as a cultural resource for future generations is defeated. An archive's purpose is to accurately preserve artifacts for the benefit of generations to come.

The same problem may arise when we periodically "migrate" previously archived works. Even after these works are initially archived from an obsolete format to a modern storage system, these works still need to be periodically migrated to ensure that the digital artifacts are properly preserved.⁴ To assure it has been successful, migration requires verification. Verification, in turn, may require circumvention of the access control measures. We therefore need an exemption not only to archive materials in the first instance, but to conduct future migrations of archived materials.

Obtaining consent from the original copyright owners of digital works is often impossible, or at the very least, highly impractical. For many works in obsolete formats, it is impossible to identify the owner of the copyright, and therefore, impossible to get permission to access the copyrighted work. Furthermore, due to the tremendous scope of the Internet Archive's archiving activity, it would also be highly impractical to get permission or negotiate licenses from all of the original copyright owners. Therefore, an exemption is the only way for the Internet Archive to realistically archive these important digital works before they deteriorate or fade into obsolescence and are lost forever.

The Internet Archive's archiving activities constitute non-infringing use under sections 108, 117(a)(2) and 107 of the Copyright Act.

⁴ The Internet Archive has been conducting this migration once every three years.

As discussed below, since the DMCA's prohibition on circumvention adversely affects the Internet Archive's non-infringing archival use of computer programs and video games that are currently stuck in an obsolete format, circumvention of access controls on works in obsolete formats should be exempted from §1201 liability.

2. "Original Only" Access Controls Adversely Effect our Non-Infringing Use

a) "Original-Only" Access Control

The Internet Archive receives generous donations of software works and video games that contain persistent technological measures which bar access to archivally preserved copies of the software. Many of these software works are equipped with "original-only" access controls. These access controls are designed to prevent users from being able to access the contents of a disk unless the original disk is available to be accessed by means of hardware. For example, in the case of a work stored on a 5 ¼ inch floppy disk (or its hardware equivalent), this means that the user of the floppy disk has to find an original 5 ¼ inch floppy disk drive in order to run the disk and access its contents. This may be difficult or impossible in practice.

As an archive, it is critical that we not only copy these digital works, but that we also verify the accuracy, completeness, and functionality of our copy. We do so by developing and using "emulators" to circumvent the "original-only" access control measures. But for the prior exemption we secured in 2003, the anti-circumvention provision of 17 U.S.C. §1201(a) would have prevented us from verifying the works that we preserved.

b) Access control adversely affects our archiving activity

As previously mentioned, the primary goal of the Internet Archive is to accurately preserve digital copyrighted works before the media in which they are recorded deteriorate. Thanks to the last exemption, we were able to verify the accuracy of preserved copies of

computer programs and video games without triggering §1201(a) liability. Without this exemption, our continuing efforts to archive will be frustrated.

For instance, we set up the Classic Software Preservation Project (the “CLASP Project”) in January 2004 to permanently archive classic, obsolete software from the late 1970s through the early 1990s. These works were stored on fragile magnetic media, which have a life of anywhere between 10 and 30 years. Many of these works were therefore on the brink of slipping away. In order to preserve these classic pieces of works, we have made perfect digital copies of these rapidly decaying floppy disks. These disks were then locked away in our vaults for safekeeping. One example of a work that we archived under the CLASP project is “Block Out,” which one reviewer has described as “the cleanest and most entertaining game.”⁵ Along with “Block Out,” we have preserved many other historically significant computer games in obsolete formats.⁶ There remain tens of thousands of videogames, utilities and other programs stored on fragile magnetic media that have not yet been archived.⁷

Our archiving effort has not been limited to the CLASP Project. The Internet Archive is currently collaborating with the Classic Amiga Preservation Society, a technical collective making an effort to archive the Commodore Amiga’s classic software collection, and to institute universal standards for software archiving, both with regard to XML metadata and actual disk image formats. The launching of this important, ongoing, long-term project is a good example of how the Internet Archive has used the previous exemption and of why its renewal is so critical to our activities: clearly, some of the Internet Archive’s projects take longer to complete than the three-year period covered in each exemption cycle.

⁵ <http://www.archive.org/details/block-out-amiga>

⁶ For instance, some of the games that we have archived include: Gauntlet II, Block Out, Hacker II, Dungeon Master, Leisure Suit Larry II, Blood Money, and Leisure Suit Larry 3. For further information, please see our website at <http://www.archive.org/details/clasp>

⁷ Id.

We also are in the process of archiving some of the earliest spreadsheet database computer programs, including Visicalc and Lotus123. These programs are examples of the thousands of computer programs that the Internet Archive is working on preserving. These programs have significant historical value and it is important that the Internet Archive be able to continue to archive them.⁸

Moreover, a renewed exemption is necessary for the periodic migration that the Internet Archive conducts every three years, as described above. Migration is crucial in preserving the integrity of digital objects and retaining the ability to retrieve, display and otherwise use these digital objects in the face of constantly changing technology. When access control measures such as “original-only” access controls are built into digital works, these measures effectively prevent us from verifying the archived copy unless we can engage in circumvention where necessary.

c) The prevented activity is a non-infringing use under current law

The Internet Archive’s reproduction and access to the works in its collection are non-infringing uses pursuant to section 108, 117 and 107 of the Copyright Act.

1. Section 108(a)

The Internet Archive’s preservation activities are non-infringing uses pursuant to section 108(a) of the Copyright Act, which provides that a library or archive may reproduce no more than one copy or phonorecord of a work if (1) the reproduction is made strictly for noncommercial purposes, (2) the collections are open to the public or available to persons doing research in a specialized field, and (3) the reproduction or distribution of the work includes a notice of copyright.

⁸ <http://dssresources.com/history/sshistory.html>

The Internet Archive's reproduction for preservation satisfies all three criteria. First, the Archive, as a 501(c)(3) non-profit organization, does not seek commercial gain in reproducing and archiving the works. Second, the Internet Archive's collections are open to the general public, as well as to researchers and scholars, to the extent that we legally can make them available.⁹ Third, the Internet Archive provides explicit notice that works in the archives may be copyrighted.

Therefore, the Internet Archive's preservation activities are not infringing uses under section 108(a) of the Copyright Act.

2. Section 117(a)(2)

Section 117(a)(2) explicitly provides that owners of a copy of a computer program can make or authorize the making of another copy if the new copy is for archival purposes only and all archival copies are destroyed if the owner loses rightful possession of the original software.

The Internet Archive is the rightful owner of the copies of computer programs in its collections, makes reproductions for archival use, and preserves rightful possession of the original at all times. Pursuant to express language of the section 117(a)(2), the Internet Archive's reproduction of computer programs is a non-infringing use.

3. Section 107

In addition, the Internet Archive's preservation activities also constitute fair use pursuant to section 107 of the Copyright Act.

First, the Internet Archive's use activities are geared toward strictly non-commercial preservation of computer programs and video games that are in danger of deterioration. Copying

⁹ Works that are currently protected by copyright are not made fully accessible to the public, although they are identified on our website as an archived work. For instance, we identify the archived version of the video game "Dungeon Master" on our website, but visitors cannot actually download the copyrighted game. www.archive.org/details/dungeon-master-amiga

and verifying those works through access is done for archival purposes only, and not for commercial gain.

Second, the nature of the copyrighted works is such that they will likely have enormous historical and cultural significance in the near future. The Internet Archive's very purpose is to archive digital artifacts before they deteriorate. These artifacts will be invaluable to scholars and historians in the near future and generations from now, in much the same way that early Charlie Chaplin films are invaluable to film scholars and cultural historians today. Unless archives have the ability to accurately preserve these fragile digital works, the public may very likely lose a wealth of information about our culture.

Third, for archive preservation purposes, it is imperative for us to copy the work in its entirety. Therefore, the amount and substantiality of the portion used in relation to the copyrighted work as a whole does not weigh against the conclusion that the Internet Archive's uses are fair ones.

Finally, the effect of the use upon the potential market for the archived works is nonexistent. First, the copyrighted works included in the archive are not made generally available to the public. Second, this exemption only applies to generally outdated computer programs and video games, for which no contemporary market, real or potential, is likely to exist.

3. Further statutory considerations under section 1201(a)(1)(C)

Section 1201(a)(1)(C) provides further considerations that the Librarian of Congress shall consider in this rulemaking proceeding. The analysis of these statutory factors strengthens the reason why the Librarian of Congress should grant the requested exemptions. The exemption increases the availability of copyrighted works; ensures their availability for non-profit preservation, education, scholarship and research; allows a more accurate historical record to be

preserved; does not harm the market for copyrighted works; and protects against the irreparable harm of their loss. For each of these reasons, it should be adopted.

a) The availability for use of copyrighted works

Many copyrighted computer programs and video games have extremely short time periods of availability. If the Internet Archive does not preserve these digital works, they will soon become obsolete and unavailable for any possible use.

b) The availability for use of works for nonprofit archival, preservation, and educational purposes

The proposed exemption of this class of works is directed at improving the availability of works for use for nonprofit archival and preservation purposes. Without the ability to access the archived work, no archive can be created to preserve computer programs and video games embodied in obsolete formats. Absent this exemption, many of these works will not be preserved.

c) The impact that the prohibition on the circumvention of technological measures applied to copyrighted works has on criticism, comment, news reporting, teaching, scholarship, or research.

Lack of access to preserved copies of digital works will thwart the public from using archived materials in a wide range of journalistic, educational, and academic purposes. The historical record of these works will be limited to whatever contemporaneous commentary they inspired. Works that did not attract contemporary notice and comment will simply vanish from the historical record. Thus, without an exemption, the negative impact on commentary, scholarship and research will be strong and irreversible.

d) The Effect of circumvention of technological measures on the market for or value of copyrighted works

This exemption will have no adverse effect on the market for copyrighted works because the Copyright Act will continue to prohibit the creation and distribution of illegitimate copies of any works archived pursuant to this exemption. Likewise, Section 1201(a)(2) will continue to prohibit the distribution to the general public of the means to accomplish the circumvention authorized by the exemption. This exemption will not affect the right of copyright owners, but will grant the public access to legitimately preserved copies under 1201(a)(1) when the copyrights have expired.

To the extent the value of a work to the public is considered under this criterion, the proposed exemption increases that value by allowing archivists to assure the availability of a work in perpetuity. This public value is dramatically increased upon a work's eventual entry into the public domain at the expiration of its copyright.

e) Other factors

To the extent that section 1201(a)(1) currently is doing irreparable harm that cannot be cured by the subsequent granting of an exemption to it, an exemption should be granted in the current rulemaking cycle. Similarly, to the extent that any potential harm a 1201(a)(1) exemption might cause can be reversed in a future rulemaking by declining to extend the exemption in the future, the exemption should be granted.

The proposed exemption meets both criteria. Without it, the damage done to the Internet Archive's ability to preserve these works will be irreparable. Once a format is no longer supported, or a medium degenerates so that it is no longer accessible, the later grant of an

exemption cannot rescue the works embodied in it. Whatever works have not been archived never will be.

On the other hand, any potential negative consequences from the proposed exemption can be ended by a decision not to renew it in the next §1201(a)(1) rulemaking. Since each proposed exemption is reviewed *de novo* every three years, the Copyright Office can choose not to renew this exemption if it finds that there have been negative consequences. Due to the irreparable nature of the harm of non-exemption and the short duration of the exemption, the proposed exemption should be renewed.

Finally, if the Internet Archive cannot accurately archive these digital copyrighted works now, the effect of §1201(a) will be to frustrate the Constitutional purpose of Art. 1, §8, cl. 8. The purpose of our copyright system is to grant a limited right to the copyright owner in exchange for the work eventually entering the public domain. If we cannot preserve these copyrighted works until the copyrights expire, then the public has simply not benefited fully from the system.

2) *Computer programs and video games distributed in formats that require obsolete operating systems or obsolete hardware as a condition of access*

1. Summary of Argument

As we have previously stated, the Internet Archive seeks to preserve digital works by archiving those works. This proposed exemption is intended to address computer programs and video games that are not necessarily stored on an obsolete format but require an obsolete operating system or obsolete hardware for proper functionality. This class is a modest expansion from a class of works previously exempted in 2003, “computer programs protected by dongles

that prevent access due to malfunction or damage and which are obsolete.”¹⁰ This new proposed class is only slightly broader than the previously exempted class granted in 2003. This exemption will allow the Internet Archive to rescue a broader range of historic digital works from potential oblivion. However, it should lead to no additional risk to the interests of copyright owners because the exemption is intended only to permit archival activities and there is no consumer market for such works.

It is not clear whether works that require an obsolete operating system or obsolete hardware as a condition to operate, and thus whether §1201(a) applies to such works. To the extent that an obsolete operating system or obsolete hardware is an “access control,” and therefore triggers §1201(a) liability when it is circumvented, we propose an exemption for this class of works. Therefore we are requesting an exemption of the proposed class of work only to the extent that the requirement of an obsolete operating system or obsolete hardware is deemed to be such a technological measure. Based on the similarity between this class and the first proposed class in this Comment, this argument will incorporate by reference many of the arguments used in support of the first proposed class.

2. If An Obsolete Operating System Or Obsolete Hardware Is An Access Control, Then It Adversely Affects our Non-Infringing Use

a) Obsolete Operating System Or Obsolete Hardware As A Condition Of Access

The purpose of the Internet Archive, as explained above, is to archive digital works. Many digital works, such as computer programs and video games, require a specific operating system or specific hardware in order to be accessed. In order to verify the accuracy, completeness, and functionality of a reproduced digital work, the Internet Archive needs to access the reproduced work. Therefore, as an archive, it is essential that we have the capability

¹⁰ <http://www.copyright.gov/1201/2003/index.html>

to use the proper operating system or proper hardware in order to access the digital works which require that specific operating system as a condition of access.

In a situation where the operating system or hardware is obsolete, we need to circumvent the operating system or hardware by “emulating” the operating system or hardware. To the extent that an obsolete operating system or obsolete piece of hardware is a technological protection measure, emulating it might be considered circumventing it and might trigger liability.

b) Access control adversely affects our archiving activity

For example, in the course of our archiving activities, we were archiving Robocop 3, a video game for the personal computer. Robocop 3 was designed to be exclusively compatible with the Commodore Amiga operating system and used a dongle protection system. The Commodore Amiga operating system and dongle hardware have both become obsolete.

To verify that we accurately preserved a copy of Robocop 3, we needed to emulate the Commodore Amiga operating system and we also needed some way to emulate the physical dongle, because the computer we were conducting the emulation on did not have the same connection ports to operate the dongle. If this operating system or hardware is considered to be a technological protection measure that we have to emulate to verify the integrity of the reproduced work, circumvention might trigger DMCA liability in an absence of an exemption.

c) The prevented activity is a non-infringing use under current law

The Internet Archive’s reproduction and access to the works in its collection are non-infringing uses pursuant to section 108, 117 and 107 of the Copyright Act for the same reasons discussed above.

d) Further statutory considerations under section 1201(a)(1)(C)

The five statutory considerations also favor an exemption for the same reasons discussed above.

Conclusion

Section 1201(a)(1) prevents archivists from archiving computer programs and video games where access controls prohibit verification of preserved copies, thereby crippling the most fundamental function of archives. The proposed exemptions offer narrow solutions that do not damage copyright holders' interests and protect important non-infringing uses of these works. The Copyright Office should grant the requested exemptions: renewing the exemption for the first proposed class of works, and grant a new exemption for the second proposed class of works.

Respectfully submitted.

/s/ Brewster Kahle

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