

REPLY COMMENTS OF THE MUSEUM OF ART AND DIGITAL ENTERTAINMENT

Item A. Commenter Information

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The Museum of Art and Digital Entertainment (the “**MADE**”) is a 501(c)(3) non-profit organization in Oakland, California dedicated to the preservation of video game history. The MADE supports the technical preservation of video games, presents exhibitions concerning historically significant games, and hosts lectures, tournaments, and community events. The MADE has personal knowledge and experience regarding this exemption through past participation in the sixth triennial rulemaking relating to access controls on video games.

The MADE is represented by the Samuelson Law, Technology & Public Policy Clinic at the University of California, Berkeley, School of Law (“**Samuelson Clinic**”). The Samuelson Clinic is the leading clinical program in technology and public interest law, dedicated to training law and graduate students in public interest work on emerging technologies, privacy, intellectual property, free speech, and other information policy issues.

ITEM B. PROPOSED CLASS ADDRESSED

Proposed Class 8: Computer Programs—Video Game Preservation

ITEM C. OVERVIEW

1. Introduction

From 1912 to 1929 “filmmakers established the language of cinema, and the motion pictures they created reached a height of artistic sophistication.”¹ This era of silent film was critical to the development of cinema yet, due to poor preservation, as little as 14% of films from this period survive.² Without immediate and widespread preservation efforts, video games face a similar fate.³

To avoid this outcome, we ask the Register of Copyrights to recommend a modest expansion (the “**Proposed Exemption**”)⁴ to the circumvention exemption for video game preservation granted in the 2015 rulemaking (the “**Current Exemption**”)⁵ to allow for the preservation of abandoned online games. The Current Exemption permits circumvention for preservation and continued play of video games where a lack of access to “an external computer server necessary to facilitate an authentication process to enable local gameplay” makes games unplayable.⁶

Since it was promulgated the Current Exemption has worked well. In fact, the commenters that opposed the rule in 2015⁷ now support it.⁸ The Proposed Exemption, therefore, modestly builds on the successes of the Current Exemption. The fundamental goal of the Proposed Exemption is to further the public benefits derived from preservation of our shared cultural heritage. To this end, the Proposed Exemption aims to improve video game preservation efforts by allowing the

¹ DAVID PIERCE, *THE SURVIVAL OF AMERICAN SILENT FEATURE FILMS: 1912-1929* at 1 (2013), https://www.loc.gov/programs/static/national-film-preservation-board/documents/pub158.final_version_sept_2013.pdf.

² *See id.*

³ *See, e.g.,* Devin Monnens et al., *Before It’s Too Late: A Digital Game Preservation White Paper*, 2 AM. J. OF PLAY 139 (Henry Lowood, ed., 2009), http://digitalcommons.calpoly.edu/lib_fac/107; Allison M. Hudgins, *Preservation of the Video Game*, 29 PROVENANCE, J. OF THE SOC’Y OF GA. ARCHIVISTS 32 (2011).

⁴ *See* Museum of Art and Digital Entertainment, Comment Letter Regarding a Proposed Exemption Under 17 U.S.C. § 1201 at 6–8 (Dec. 19, 2017) [hereinafter MADE Comments], <https://www.regulations.gov/document?D=COLC-2017-0007-0082> (text of Proposed Exemption).

⁵ 37 C.F.R. § 201.40(b)(8) (text of Current Exemption).

⁶ U.S. COPYRIGHT OFFICE, SECTION 1201 RULEMAKING: SIXTH TRIENNIAL PROCEEDING TO DETERMINE EXEMPTIONS TO THE PROHIBITION ON CIRCUMVENTION, RECOMMENDATION OF THE REGISTER OF COPYRIGHTS 350–53 (2015) [hereinafter Register’s Recommendation 2015].

⁷ *See* Entertainment Software Association, Comment Letter regarding a Proposed Exemption under 17 U.S.C. § 1201 (2015) [hereinafter ESA Comments 2015], https://www.copyright.gov/1201/2015/comments-032715/class%2023/Entertainment_Software_Association_Class23_1201_2014.pdf; Entertainment Software Association et al., Comment Letter Regarding a Proposed Exemption Under 17 U.S.C. 1201: Proposed Class #23 (2015) [Hereinafter Joint Creators Comments 2015], https://www.copyright.gov/1201/2015/comments-032715/class%2023/Joint_Creators_and_Copyright_Owners_Class23_1201_2014.pdf.

⁸ *See* Entertainment Software Association, Comment Letter Regarding a Proposed Exemption Under 17 U.S.C. § 1201 at 7 (Feb. 13, 2018) [hereinafter ESA Comments], <https://www.regulations.gov/document?D=COLC-2017-0007-0149>; Motion Picture Association of America et al., Comment Letter Regarding a Proposed Exemption Under 17 U.S.C. § 1201 at 8 (Feb. 13, 2018) [hereinafter Joint Creators Comments], <https://www.regulations.gov/document?D=COLC-2017-0007-0169> (“The Existing Exemption’s Limitations Are Sound And Necessary”).

preservation of a class of games excluded from consideration in 2015⁹: online multiplayer games that depend on external servers to function and that are no longer operable because their copyright owners have ceased to provide access to such servers (i.e., “**abandoned**” online video games).¹⁰ Additionally, the Proposed Exemption adds to the Current Exemption’s user class individuals who can lawfully assist institutions in preserving abandoned online video games by “lending their talents and expertise” (“**Affiliate Archivists**”).¹¹

The Proposed Exemption should be granted because the preservation of technologically fragile, but culturally valuable, online video games is a fair use that aligns with 17 U.S.C. § 108’s principles for preservation by libraries and archives. Such preservation is currently impeded by technological protection measures (“**TPMs**”) imbedded in the architecture of online games.¹² The Proposed Exemption also satisfies 17 U.S.C. § 1201(a)(1)(C)’s five statutory factors.¹³

“**Opponents**” of the Proposed Exemption offer two central arguments.¹⁴ First, Opponents accuse the Proposed Exemption of not having meaningful restrictions that would prevent infringement.¹⁵ Second, they claim current preservation efforts under their control are sufficient and the Proposed Exemption is unnecessary.¹⁶ Opponents do not substantiate these claims.¹⁷ As will be explained, the Proposed Exemption contains reasonable restrictions on preservation activities, and would facilitate better archival practices than could be accomplished by game publishers alone.

On February 28, 2018, the online servers for the video game *Demon’s Souls* shut down after eight years.¹⁸ As one journalist eulogized: “[T]he curtains fell over one of the best, wildly experimental video game online systems. A pretty unceremonious end that could be mistaken for a temporary

⁹ See Register’s Recommendation 2015, *supra* note 6, at 323 (noting that in 2015 proponents of the Current Exemption “exclude[d] massively multiplayer online roleplaying games”).

¹⁰ Games are defined as abandoned when “server support for the video game has ended,” and the lack of support has been confirmed by an affirmative statement of the copyright owner or its authorized representative, or “server support has been discontinued for a period of at least six months,” and has not since been restored. MADE Comments, *supra* note 4, at 6–8. This definition is derived from the Register’s definition of “cease to provide access” in the prior rulemaking. See Register’s Recommendation 2015, *supra* note 6, at 352–53.

¹¹ Register’s Recommendation, *supra* note 6, at 351.

¹² See *id.* at 9–12 (discussing the technical aspects of video game architecture and TPMs).

¹³ See *infra* Item E-3.

¹⁴ The Entertainment Software Association (“**ESA**”) submitted two comments in opposition, joined in one by the Motion Picture Association of America (“**MPAA**”), the Recording Industry Association of America (“**RIAA**”), and the Association of American Publishers (“**AAP**”). Joint Creators Comments, *supra* note 8, at 1. The MPAA, the RIAA, and the AAP “fully support the separate comments concurrently submitted by the ESA in opposition.” *Id.* at 3.

¹⁵ See *infra* nn.45, 51.

¹⁶ See ESA Comments, *supra* note 8, at 7, 15–22, 39. For the MADE’s response, see *infra* Item C-3.

¹⁷ See *infra* Items C-2, C-3.

¹⁸ See Rachel Kaser, *Demon’s Souls is a Perfect Example of Why Preserving Online Games Is So Important*, THE NEXT WEB (Feb. 28, 2018), <https://thenextweb.com/gaming/2018/02/28/demons-souls-perfect-example-preserving-online-games-important>.

server issue.”¹⁹ The Proposed Exemption should be granted to ensure that the cultural and historical value of such games is not lost merely because the publishers no longer supports them.

Item C-2 of these Comments describes how the plain language of the Proposed Exemption crafts a narrow rule with clear restrictions to prevent unlawful uses unrelated to preservation. Item C-3 addresses how publisher control over preservation of online games would lead to an incomplete historical record and would create a risk of revisionism. Item D explains why circumvention is necessary to preserve online video games and why such circumvention will not enable infringement. Item E-1 demonstrates that the Affiliate Archivist class is critical to the success of online game preservation efforts. Item E-2 explains why the use of copyrighted material via the Proposed Exemption is a fair use that aligns with § 108’s guidance on preservation practice. Lastly, Item E-3 demonstrates that all five statutory factors of § 1201(a)(1)(C) support the Proposed Exemption.

2. The plain language of the Proposed Exemption is a narrow expansion of the Current Exemption that is necessary for the preservation of important online video games.

a. The Proposed Exemption maintains the limitations of the Current Exemption concerning distribution of preserved video games.

The Current Exemption (for which Opponents have expressed support)²⁰ permits TPM circumvention “to allow copying and modification of the computer program”²¹ to preserve a game in “playable form by an eligible library, archives, or museum.”²² Such preservation must be done without a “purpose of direct or indirect commercial advantage,”²³ and preserved games may not be “distributed or made available outside of the physical premises”²⁴ of eligible institutions.²⁵ These limits resulted from the Register taking guidance from § 108 on “Congress’s intent regarding the nature and scope of legitimate preservation activities.”²⁶ Further, based on the record established in the 2015 rulemaking,²⁷ preservation is only allowed under the Current Exemption to “enable local gameplay” of “complete games,” meaning videos games that can be “played by users without accessing or reproducing copyrightable content stored or previously stored on an external computer server.”²⁸

¹⁹ Matt Kim, *Watch the Sad, Final Minutes of Demon’s Souls Before the Servers Die*, US GAMER (Mar. 2, 2018), <https://www.usgamer.net/articles/watch-sad-final-minutes-of-demons-souls-before-servers-die>.

²⁰ See ESA Comments, *supra* note 8, at 7 (“The existing exemption, together with preservation efforts by ESA and its members, is sufficient to preserve important games . . .”).

²¹ 37 C.F.R. § 201.40(b)(8)(i)(B).

²² *Id.*

²³ *Id.*

²⁴ *Id.*

²⁵ *Id.*

²⁶ Register’s Recommendation 2015, *supra* note 6, at 342.

²⁷ The exemption proposed in 2015 specifically excluded online games from the class of works under consideration. *See id.* at 323.

²⁸ 37 C.F.R. § 201.40(b)(8).

We propose to modify the Current Exemption so that online games may be preserved using the same set of rules that currently apply. To this end, the Proposed Exemption makes only two reasonable extensions of the Current Exemption. First, the Proposed Exemption would allow for preservation of online games that require “an external computer server” to function.²⁹ Second, the Proposed Exemption permits lawful preservation to be undertaken by “[a]n affiliate of a library, archives or museum.”³⁰ The Proposed Exemption only permits circumvention of an online game’s TPMs for the purpose of preserving the game, *not* for continued play by individuals.³¹

The Proposed Exemption also adopts the same § 108-inspired limits as the Current Exemption³² to ensure compliance with Congressional intent regarding preservation.³³ Under the Proposed Exemption, preservation must be carried out by “preservation-oriented” groups, namely libraries, archives, museums and Affiliate Archivists.³⁴ To be eligible, institutions must make their collections “open to the public and/or routinely available for researchers who are not affiliated with the library, archives, or museum.”³⁵ Additionally, preservation under the Proposed Exemption must be “without any purpose of direct or indirect commercial advantage.”³⁶ The Proposed Exemption disallows distribution of preserved games to the general public “outside of the physical premises of the eligible library, archives, or museum.”³⁷ And, finally, the Proposed Exemption only permits copying and modification of video game software to “allow preservation of the game in a playable form.”³⁸

The Proposed Exemption would allow eligible institutions to preserve online video games through replication and modification of a game’s original online client-protocol-server architecture to make the game functional in a closed-network environment.³⁹ Preserved games would be housed on a physically-isolated server at an eligible library, archives, or museum where they

²⁹ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

³⁰ *Id.* The Register supported involving individuals in preservation work in 2015: “The Register notes . . . that interested individuals may be able to contribute to valuable preservation efforts by lending their talents and expertise to qualified institutions.” See Register’s Recommendation 2015, *supra* note 6, at 351.

³¹ The Current Exemption allows for the circumvention of TPMs on certain kinds of games for the purpose of continued play as well as preservation. See 37 C.F.R. § 201.40(b)(8)(i)(A), (B). As detailed in our initial Comments, the Proposed Exemption only expands the class of video games to include abandoned online video games for purposes of preservation.

³² See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

³³ See Register’s Recommendation 2015, *supra* note 6, at 342. See also MADE Comments, *supra* note 4, at 9 (defining preservation to mean “the repair, modification, replication, or replacement of the game architecture of an abandoned video game to restore it to playable form, including, but not limited to, the creation of new, interoperable protocols and servers”).

³⁴ See Register’s Recommendation 2015, *supra* note 6, at 341–42.

³⁵ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

³⁶ *Id.*

³⁷ *Id.*

³⁸ *Id.*

³⁹ See *id.* at 9–12 (discussing game architecture and LANs).

could be accessed by “researchers who are not affiliated with the library, archives or museum.”⁴⁰ These games would *not* be accessible outside the premises of the preserving institution. In other words, preservationists would construct “an online multiplayer ecosystem accessible only by scholars within the confines of an eligible institution.”⁴¹

Preservation of this type was contemplated by the Current Exemption, which allows for preservation of multiplayer games that may be played through a local area network (“LAN”).⁴² As noted in our initial Comments, native play capability for online video games is rare, and in many instances game clients located on the same network must still access external servers to play.⁴³ Therefore, the architecture of many online video games must be modified to make them function in a LAN-only environment.⁴⁴

b. Opponents wrongly assert the Proposed Exemption expands the public use of preserved games.

Opponents make numerous claims that the Proposed Exemption will result in wide, piratical public uses of video games.⁴⁵ For example, Opponents claim that the Proposed Exemption would “make the video game[s] available for play by a public audience,”⁴⁶ and that “the [Proposed Exemption] would allow eligible organizations to provide an online arcade for affiliates.”⁴⁷ Such claims are baseless. The Proposed Exemption—just like the Current Exemption—limits use of online games to preservation activities at eligible libraries, archives, and museums, and specifically requires that video games not be “distributed or made available to the public outside of the

⁴⁰ 36 C.F.R. § 201.40(b)(8)(iii)(D).

⁴¹ ESA Comments, *supra* note 8, at 20–21.

⁴² See 37 C.F.R. § 201.40(b)(8)(iii)(C) (defining “local gameplay” to mean “gameplay conducted on a personal computer or video game console, or locally connected personal computers or consoles, and not through an online server or facility”).

⁴³ See MADE Comments, *supra* note 4, at 3.

⁴⁴ See *id.* at 9–12 (discussing game architecture and LANs).

⁴⁵ See *e.g.*, ESA Comments, *supra* note 8, at 3 (“play by a public audience”); *id.* at 3, n.10 (“Any belated attempts to extend the proposed expansion to personal gameplay should be rejected.”); *id.* at 8 (“[T]he proponents’ real goal is to allow a public audience—and not just serious scholars—to play online video games.”); *id.* at 10–11 (“[W]hen the proponents of the expansion propose making a substitute game server available to allow the public to play online video games, they are talking about providing an online service that would replace a service for which video game companies frequently charge.”); *id.* at 20–21 (“While it is theoretically possible to construct an online multiplayer ecosystem accessible only by scholars within the confines of an eligible institution, like the Library of Congress, proponents have shown no inclination to so limit their activities.”); *id.* at 24 (“make the video game[s] available for play by a public audience”); *id.* at 27 (“[T]heir vision is not to allow a university faculty member and her graduate student to play an online game from a reading room populated by scholars.”); *id.* at 35 (“persistent public performance and display”); *id.* at 37 (“[I]n addition to seeking to provide an on-premises arcade where a public audience will be able to play online video games, the Proposed Exemption would allow eligible organizations to provide an online arcade for affiliates”); Joint Creators Comments, *supra* note 8, at 11 (“[P]ublic video game play is distinct from preservation”).

⁴⁶ ESA Comments, *supra* note 8, at 24.

⁴⁷ *Id.* at 37.

physical premises of the eligible library, archives or museum.”⁴⁸ The Proposed Exemption does not authorize public performance or display of preserved online games,⁴⁹ nor any distribution of these games to the public.⁵⁰

c. Expansion of the Current Exemption to include Affiliate Archivists would not increase piracy because the affiliate class is restricted by both the plain language of the Proposed Exemption and by copyright law generally.

Opponents repeatedly claim that the Proposed Exemption’s expansion of the Current Exemption to include Affiliate Archivist would result in increased piracy of copyrighted works.⁵¹ For instance, Opponents allege that “substantial mischief” could result should a “legion” of volunteers be permitted to assist in the preservation of online video games.⁵² Such conjectures are unfounded, as the Proposed Exemption places reasonable restrictions on Affiliate Archivists’ activities that would protect against infringement.

⁴⁸ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

⁴⁹ See Register’s Recommendation 2015, *supra* note 6, at 342 (“The performance and display of a video game for visitors in a public space is a markedly different activity than efforts to preserve or study the game in a dedicated archival or research setting.”).

⁵⁰ The only distribution of preserved games that might be allowable under the Register’s § 108 analysis is the “limited distribution of copies to other libraries and archives.” See Register’s Recommendation 2015, *supra* note 6, at 341. See also 17 U.S.C. § 108(b)–(c).

⁵¹ See *e.g.*, ESA Comments, *supra* note 8, at 4 (“[T]he request would dissolve any meaningful distinction between preservationists and recreational gamers, and invite substantial mischief.”); *id.* (“[P]ermitting preservation by affiliates may involve and promote a wide range of infringing activity”); *id.* at 9 (“[P]roponents have not explained how each of the many institutions potentially eligible for the preservation exemption could effectively supervise a legion of affiliates.”); *id.* at 24 (“Worse yet, proponents seek permission to deputize a legion of affiliates to assist in their activities.”) (quotations omitted); *id.* at 29 (“It is not hard to imagine an organization opening up affiliation to anyone who volunteers through completion of an online form, without any meaningful verification of the affiliates identities or intentions.”) (quotations omitted); *id.* (“[I]t should be assumed that any individual who wants to claim the benefit of the exemption could affiliate with some eligible organization and operate without any meaningful supervision.”); *id.* (“[I]f the Proposed Exemption were adopted, potentially thousands of organizations could deputize vast numbers of affiliates”) (quotations omitted); *id.* (“It is reasonable to expect that, if this proposal were adopted, affiliates would be gamers who want to play video games.”); *id.* at 30 (“to provide tools for circumvention and video games under restoration to a large and poorly supervised group of affiliates”) (quotations omitted); *id.* at 32 (“It also is likely that a broadened exemption would result in distribution of video games to or by affiliates that are drawn from the public and not supervised to an extent that would make them agents of the relevant organization.”) (quotations omitted); *id.* at 34 (“[D]istribution, performance, and display of video games to remote affiliates for purposes of recreational gameplay, or unauthorized redistribution of copyrighted material by affiliates, is by no means a transformative use.”); *id.* at 37 (“[I]n addition to seeking to provide an on-premises arcade where a public audience will be able to play online video games, the Proposed Exemption would allow eligible organizations to provide an online arcade for affiliates”); *id.* (“The proposal would facilitate this [affiliate jailbreaking] without requiring the institutions to engage in any meaningful supervision”); *id.* at 38 (“by deputizing a legion of affiliates to assist in their activities”) (quotations omitted); *id.* at 40 (“to a legion of affiliates”) (quotations omitted).

⁵² See *id.* at 4, 9.

First, The Proposed Exemption limits the activities of Affiliate Archivists to “lawful preservation” of video games under the supervision of a sponsoring “eligible” institution.⁵³ Opponents claim⁵⁴ that under the Proposed Exemption there would be no “meaningful distinction between preservationists and recreational gamers,”⁵⁵ but this is untrue: preserving a game is not the same thing as playing it, and only the former is permitted here.⁵⁶ The distinction between play and preservation is expressed in the definition offered in our initial Comments: preservation “means the repair, modification, replication, or replacement of the game architecture of an abandoned video game to restore it to playable form, including, but not limited to, the creation of new, interoperable protocols and servers.”⁵⁷ Hence, any actions taken by Affiliate Archivists that were not lawful preservation activities would not be permitted under the Proposed Exemption and would be subject to the full weight of the Copyright Act, including the DMCA. Most—if not all—of the hypothetical activities that Opponents allege fall into this category.⁵⁸

Second, the Proposed Exemption specifically prohibits online video games from being “distributed or made available to the public outside of the physical premises of the eligible library, archives or museum.”⁵⁹ This means that even if Affiliate Archivists are working remotely, preserved games must be stored on the physical premises of the archival institution and unauthorized copies cannot be distributed.⁶⁰

Third, as discussed in Item E-1 below, Affiliate Archivists would be constrained by the policies of their institutional sponsors.⁶¹ By their nature, libraries and archives “tend to be risk-averse” in dealing with copyrighted works.⁶² This tendency would naturally constrain the activities of Affiliate Archivists to be within the bounds of what copyright law allows.

In sum, Opponents characterizations of Affiliate Archivists ignore the clear restrictions placed on their conduct by the Proposed Exemption’s language. Again, Affiliate Archivists would only be eligible when “engaged in lawful preservation” under “supervision” by a qualified institution.⁶³ Any other uses of copyrighted works are outside the scope of the Proposed Exemption.

⁵³ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language subsection (F)).

⁵⁴ See, e.g., *id.* at 29–30 (“Proponents fail to explain how they would . . . prevent widespread online gameplay and infringement . . .”); *id.* at 34 (“[T]he proponents want to make online video games playable for recreational purposes by a public audience . . .”).

⁵⁵ See *id.* at 4.

⁵⁶ See Additional Statement of the Museum of Art and Digital Entertainment *infra* p. A-2 [hereinafter MADE Supplementary Statement].

⁵⁷ *Id.* at 9.

⁵⁸ See *supra* notes 45, 51.

⁵⁹ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language subsection (i)(B)).

⁶⁰ See MADE Supplementary Statement *infra* p. A-2.

⁶¹ See *infra* Item E-1.

⁶² UNITED STATES COPYRIGHT OFFICE, FEDERAL COPYRIGHT PROTECTION FOR PRE-1972 SOUND RECORDINGS 63 (2011) [hereinafter Pre-1972 Sound Recording Report].

⁶³ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

d. The Proposed Exemption does not alter the Current Exemption’s restrictions on console jailbreaking.

In their comments, Opponents continually assert that jailbreaking of video game consoles⁶⁴ will result in increased infringement.⁶⁵ Yet, the Proposed Exemption does not enable jailbreaking beyond what is permitted under the Current Exemption, and Opponents “did not oppose continuation of the existing exemption for video game preservation.”⁶⁶ Nor do they offer any evidence of infringement resulting from preservation-related jailbreaking during the three years that the Current Exemption has been in force. As the Register made clear in 2015, console jailbreaking is often a necessary tool for archivists and carries little risk: “In the case of preservation, since the risks of piracy appear greatly diminished in that context, the exemption should also extend to TPMs controlling access to computer programs used to operate video game consoles, assuming such circumvention is necessary to maintain a console game in playable form.”⁶⁷ This fact is not altered by the type of game being preserved, and so applies equally here.

3. The Proposed Exemption enables essential preservation practices.

All the commenters in this proceeding wholeheartedly agree that video game preservation is a worthy cause.⁶⁸ In addition, we commend the ESA’s member companies on the preservation work they have undertaken, and we hope that such efforts continue in the future.⁶⁹ However, we disagree with Opponents’ contention that preservation efforts are sufficient,⁷⁰ or that online video game preservation should be solely controlled by copyright holders and subject to the “normal business judgments that copyright owners make about how to commercialize the works in their catalogues.”⁷¹ This approach to preservation is inadequate for at least two reasons: (a) it does nothing to preserve online games that were developed by companies that are “defunct, unknown, or do not have the ability to preserve their older games;”⁷² and (b) it raises serious concerns about how games might be selected for preservation. In contrast, the Proposed Exemption will improve preservation of online video games both quantitatively and qualitatively.

⁶⁴ Unchanged from the Current Exemption, jailbreaking here refers to altering “computer programs used to operate video game consoles” as necessary for preservation only. See 37 C.F.R. § 201.40(b)(8)(ii).

⁶⁵ See e.g., ESA Comments, *supra* note 8, at 4–5 (“enabling members of the public to ‘jailbreak’ video game consoles”); *id.* at 11 (describing console jailbreaking); *id.* at 12 (discussing the harm of Jailbreaking); *id.* at 37 (describing the harm of jailbreaking); Joint Creators Comments, *supra* note 8, at 6 (describing the exemption as involving jailbreaking); *id.* at 14 (arguing jailbreaking leads to infringement).

⁶⁶ ESA Comments, *supra* note 8, at 3.

⁶⁷ Register’s Recommendation 2015, *supra* note 6, at 351.

⁶⁸ See MADE Comments, *supra* note 4, at 1–2; ESA Comments, *supra* note 8, at 7; Joint Creator Comments, *supra* note 8, at 4.

⁶⁹ See MADE Comments, *supra* note 4, at A-3 (MADE Statement).

⁷⁰ ESA Comments, *supra* note 8, at 7.

⁷¹ *Id.* at 16.

⁷² Statement of Gregory Fischbach *infra* p. A-1 [hereinafter Fischbach Statement]. See also List of Defunct Game Publishers *infra* p. A-4.

a. Leaving online video game preservation to game publishers will result in an incomplete historical record.

- i. A large number of online video games will not be preserved if archival institutions are not involved.*

No online video game should be categorically excluded from historical preservation, yet this would be the effect of relying solely on copyright owners to preserve these works.⁷³ Opponents assert: “The existing exemption, together with preservation efforts by ESA and its members, is sufficient to preserve important games.”⁷⁴ This is untrue, because there are numerous important games that are neither owned by ESA member companies nor subject to the Current Exemption, and thus will not be preserved.⁷⁵ Because the Current Exemption does not apply to online video games,⁷⁶ Opponents effectively claim that they should be the sole arbiters of which online games are preserved in the future. If adopted, this view would lead to an incomplete historical archive that would not include titles developed by companies that are no longer in existence or that do not have the ability (or desire) to preserve their older titles.⁷⁷ Furthermore, even if copyright holders preserved every game in their back catalogues, many games would still be excluded from preservation.⁷⁸ “Simply, no single company or organization has the resources, time, or incentives to preserve all culturally significant video games.”⁷⁹ There are a “large number of ‘orphan works’ in the field of computer games,” and it is often difficult to “track intellectual property rights ownership in an industry as volatile as the game software industry.”⁸⁰ Hence, the idea that current industry preservation efforts are sufficient to preserve important games⁸¹ is inaccurate when the instability of the video game industry is considered.⁸²

⁷³ See *id.* (“Simply, no single company or organization has the resources, time, or incentives to preserve all culturally significant video games.”); TONY BENNETT, *THE BIRTH OF THE MUSEUM* 90 (1995) (describing how museums should adequately represent the subject matter they preserve).

⁷⁴ ESA Comments, *supra* note 8, at 7.

⁷⁵ See, e.g., MADE Comments, *supra* note 4, at A-16 (providing a partial list of abandoned MMOs that need to be preserved; it is unclear which, if any, of these games would be preserved by ESA member companies).

⁷⁶ See 37 C.F.R. § 201.40(b)(8); Register’s Recommendation 2015, *supra* note 6, at 350.

⁷⁷ See Fischbach Statement *infra* p. A-1.

⁷⁸ See JEROME McDONOUGH, ET AL., *PRESERVING VIRTUAL WORLDS FINAL REPORT* 6 (2010), <https://www.ideals.illinois.edu/handle/2142/17097> (discussing technical and legal challenges to preservation of online video games); Luke Plunkett, *Every Game Studio That’s Closed Down Since 2006*, KOTAKU (Jan. 16, 2012), <https://kotaku.com/5876693/every-game-studio-thats-closed-down-since-2006>. See also *Category: Defunct Video Game Companies*, WIKIPEDIA, https://en.wikipedia.org/wiki/Category:Defunct_video_game_companies (last visited Mar. 11, 2018).

⁷⁹ See Fischbach Statement *infra* p. A-1.

⁸⁰ McDONOUGH ET AL., *supra* note 78, at 6. See also Nathan Grayson, *The Crazy Journey to Save Grim Fandango*, KOTAKU (Nov. 5, 2014), <https://kotaku.com/the-crazy-journey-to-save-grim-fandango-1655133550> (“The gaming industry is rife with personnel changes and layoffs . . .”).

⁸¹ ESA Comments, *supra* note 8, at 7.

⁸² Additionally, most video game publishers are not associated with the ESA, and several have cut ties with the trade organization. *Compare Membership*, ENTERTAINMENT SOFTWARE ASSOCIATION, <http://www.theesa.com/about->

In contrast, the Proposed Exemption will ensure that libraries, museums, and archives can preserve all online video games that publishers either cannot—or will not—preserve. Libraries, museums, and archives have different goals than publishers and will make different archival decisions. Opponents only contemplate preservation based on “economic motivations.”⁸³ For copyright holders, preservation is a matter of “business judgment.”⁸⁴ In fact, one Opponent (the RIAA) previously explained to the Copyright Office that “its members focus on earning a return on their investment in deciding whether and what to preserve.”⁸⁵ As a result, Opponents do not appear to contemplate preservation of online video games with little market value, even if those games have substantial cultural or historical worth. Libraries, museums, and archives are different: they make preservation decisions based on cultural significance, not market considerations.⁸⁶ Such institutions are “uniquely situated to preserve games that are of great cultural, historical, and technical significance but that may not be preserved by their publishers due to economic considerations or other concerns.”⁸⁷

Further, Opponents acknowledge the importance of the Current Exemption in enabling preservation of single-player or LAN-enabled games,⁸⁸ but they do not adequately explain how they distinguish this support from their disapproval of the Proposed Exemption. In fact, Opponents previously argued that the difference between “persistent world” online video games and the local multiplayer video games (which may be preserved under the Current Exemption) was a “false distinction.”⁸⁹ If this distinction is indeed false, it is unclear then why Opponents oppose including online video games into the Current Exemption-created system, a system which Opponents have deemed “sufficient to preserve important games.”⁹⁰

The Proposed Exemption does nothing to prevent video game publishers from maintaining their own archives; its function is to supplement, not replace, existing preservation activities. Under the Proposed Exemption, preservation of online video games is only permitted when a publisher has ceased to provide access to a functionally necessary server.⁹¹ If a game is still supported by

esa/members/ (last visited Mar. 11, 2018) (listing 34 members), with *List of Video Game Publishers*, WIKIPEDIA, https://en.wikipedia.org/wiki/List_of_video_game_publishers (last visited Mar. 11, 2018). See also Leigh Alexander, *Id Software Exits ESA, Too*, KOTAKU (May 23, 2008), <https://kotaku.com/5010787/id-software-exits-esa-too>. As such, the ESA’s argument that preservation efforts undertaken by museums, libraries, and archives “would add little or nothing” to preservation efforts is incorrect: the Proposed Exemption enables archival of online video games that are outside Opponents’ purview. See ESA Comments, *supra* note 8, at 7, 19.

⁸³ ESA Comments, *supra* note 8, at 15. See generally *id.* at 15–18.

⁸⁴ See *id.* at 16.

⁸⁵ Pre-1972 Sound Recording Report, *supra* note 62, at 63.

⁸⁶ See MADE Supplementary Statement *infra* p. A-2; Fischbach Statement *infra* p. A-1.

⁸⁷ Fischbach Statement *infra* p. A-1.

⁸⁸ See ESA Comments, *supra* note 8, at 3, 7.

⁸⁹ See ESA Comments 2015, *supra* note 7, at 7.

⁹⁰ See ESA Comments, *supra* note 8, at 7.

⁹¹ Specifically, the Proposed Exemption permits preservation when “server support for the video game has ended,” and the lack of support has been confirmed by an affirmative statement of the copyright owner or its authorized

its publisher, there is no current need for preservation,⁹² and the Proposed Exemption would not apply. As such, it is always within a publisher's power to choose to preserve its titles. The Proposed Exemption would only apply when a publisher's "business judgment" determines that an online game is not worth preserving.⁹³

ii. *Game publishers cannot be relied upon to follow preservation best-practices.*

Opponents argue that "important" games are being preserved by publishers, and that video game companies "do *not* routinely discard works that in many cases they paid millions of dollars to create."⁹⁴ Sadly, this is often not true: "When a [video game] company moves offices, or even closes down, tons of really valuable material gets tossed, forever, that they don't necessarily know is valuable."⁹⁵ For example, beloved noir adventure game *Grim Fandango*—considered one of the best games of all time by critics⁹⁶—was almost lost due to inadequate preservation by the game's developers, which became evident when the publisher tried to remaster the game years later.⁹⁷ According to Tim Schafer, project lead on the original *Grim Fandango* release and its remaster: "It's frustrating because if we had just saved the right files, it'd be so much easier."⁹⁸ Because so much material was lost, remastering the game required developers to go through "unofficial channels" to retrieve important game elements, and in some instances they had to rely on reverse-engineering work done by longtime fans.⁹⁹ The Proposed Exemption would help curb the risk of inadvertent loss by developers by allowing preservation work separate from publishers' efforts to maintain their back catalogues.

Another pertinent example of the risks of limiting preservation to publisher-controlled activities arose during the 2017 Northern California wildfires. In Santa Rosa, the Tubbs Fire completely

representative, or "server support has been discontinued for a period of at least six months," and has not since been restored. See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

⁹² See *id.* at A-3 (MADE Statement explaining that "Xbox games are now at the absolute bottom of our [preservation] priority list" because Microsoft has been bringing old games back into its online store).

⁹³ Less than 0.2% of games released before 2014 have been remade for current-generation consoles. See Joe Juba, *The Definitive (But Evolving) List of Current-Gen Remasters*, GAMEINFORMER (Dec. 23 2017) (listing 70 remasters), <http://www.gameinformer.com/b/features/archive/2016/05/16/definitive-evolving-list-new-gen-remaster-hd-re-make-.aspx>; Owen S. Good, *A List of Every Video Game Ever Made: 43,806 Names, and Counting*, POLYGON (Apr. 20, 2014), <https://www.polygon.com/2014/4/20/5633602/list-of-every-video-game-all-time>. While this statistic is imperfect empirically, it nevertheless shows that the remakes Opponents refer to are exceedingly rare.

⁹⁴ See ESA Comments, *supra* note 8, at 15.

⁹⁵ Jonathan Ore, *Preserving Video Game History Is About More Than Nostalgia*, CBC NEWS (Jan. 17, 2017), <http://www.cbc.ca/news/entertainment/video-game-preservation-movement-1.3937421>.

⁹⁶ See *Grim Fandango: Awards*, WIKIPEDIA, https://en.wikipedia.org/wiki/Grim_Fandango#Awards (last visited Mar. 11, 2018).

⁹⁷ See generally Grayson, *supra* note 80.

⁹⁸ *Id.*

⁹⁹ See *id.* The need for even publishers to rely on these third parties further supports the inclusion of affiliate archivists in the Proposed Exemption. See *supra* Item C-2(c); *infra* Item E-1.

destroyed Hewlett Packard’s irreplaceable archive of the company’s early history.¹⁰⁰ Prior to its destruction, the company had declined to digitize the archive and had rejected calls by in-house archivists to donate the files to Stanford University.¹⁰¹ The destruction of Hewlett Packard’s archive demonstrates the risk of housing valuable artifacts in a single location. The Proposed Exemption limits this risk by permitting more archivists to be involved in the preservation of online games.

In sum, the Proposed Exemption will ensure that it is possible to preserve all online video games, not just those valued by their publishers’ “business judgment.”¹⁰² Archival efforts facilitated by the Proposed Exemption and preservation already undertaken by publishers are complementary, not incompatible.

b. Publisher-controlled preservation could distort the historical record through revisionism.

If copyright owners exclusively control preservation of online video games—as Opponents urge¹⁰³—they may *intentionally* exclude games with offensive or embarrassing content from archives, distorting the historical record. The fact that a game is distasteful does not mean it is unworthy of preservation; often, the opposite is true.¹⁰⁴ Just as it is unlikely that creators “will license critical reviews or lampoons of their own productions,”¹⁰⁵ there are few incentives for publishers to preserve video games that could damage their reputations or potentially harm their revenues¹⁰⁶—particularly if these games have little market value.¹⁰⁷

This danger is not hypothetical. When Electronic Arts acquired the assets of Virgin Interactive Entertainment in 1998, it cancelled the game *Thrill Kill* right before its release and decided against

¹⁰⁰ See Benny Evangelista, *Silicon Valley Historians Saddened Over Loss of Hewlett Packard Archive in Fire*, SFGATE (Oct. 30, 2017), <https://www.sfgate.com/business/article/Silicon-Valley-historians-saddened-over-loss-of-12318337.php>.

¹⁰¹ See *id.*

¹⁰² ESA Comments, *supra* note 8, at 15.

¹⁰³ See *id.* at 7 (stating that the existing exemption—which does not cover online video games—and the ESA’s preservation efforts are “sufficient to preserve important games for serious scholarly purposes”).

¹⁰⁴ See Fischbach Statement *infra* p. A-1. See also BENNETT, *supra* note 73, at 181 (defining the purpose of art museums as illustrating “not only the successive phases in the intellectual progress of . . . man, their sentiments, passions and morals, but also their habits and customs”). Examples of controversial and offensive video games abound. See, e.g., *A Timeline of Video Game Controversies*, NATIONAL COALITION AGAINST CENSORSHIP, <http://ncac.org/resource/a-timeline-of-video-game-controversies> (last visited Mar. 11, 2018).

¹⁰⁵ See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 568, 592 (1994).

¹⁰⁶ See, e.g., HAIDEE WASSON, MUSEUM MOVIES: THE MUSEUM OF MODERN ART AND THE BIRTH OF ART CINEMA 137 (2005) (describing the MOMA’s efforts in the 1930s to preserve feature films: “Barry [the first curator of MOMA’s Film Library] recognized that the bulk of control of feature films rested with studio lawyers in New York, primarily concerned with maximizing profit by treating films as legal abstractions rather than complex cultural ones.”).

¹⁰⁷ For instance, one Opponent (the RIAA) has previously explained to the Copyright Office that “its members focus on earning a return on their investment in deciding whether and what to preserve.” See Pre-1972 Sound Recording Report, *supra* note 62, at 63.

selling the game to another company.¹⁰⁸ EA justified this decision by arguing that the game “was not the kind of title that we wanted to see in the market.”¹⁰⁹ Atari in the 1980s threatened to sue the publisher of *Custer’s Revenge*—one of the most controversial games ever made—in an attempt to keep the game off of its platform because of potential damage to Atari’s brand.¹¹⁰ Microsoft pulled its game *Kakuto Chojin: Back Alley Brutal* from shelves after a formal protest from Saudi Arabia regarding the inclusion of verses from the Qur’an in the game’s music.¹¹¹ Microsoft subsequently destroyed all the copies of the game in their possession.¹¹² As these incidents suggest, if rights holders completely control preservation of online games, there is a risk that they will use video game archives as a means to burnish their reputations by omitting historically important yet controversial games. In contrast, libraries, museums, and archives are not incentivized to selectively exclude culturally significant works due to a publisher’s reputational or financial concerns.¹¹³ As such, involving these organizations in online game preservation negates the risks of publisher-driven revisionism of the historical record.

ITEM D. TECHNOLOGICAL PROTECTION MEASURES AND METHODS OF CIRCUMVENTION

Circumvention of TPMs is necessary to preserve culturally important online games in playable form for research and study. As discussed in our initial Comments, online game clients generally cannot function without a connection to external servers through a game-specific protocol.¹¹⁴ “Online video games are unplayable without the server software that embodies interactions among players and their environment.”¹¹⁵ As such, it is often necessary for preservationists to repair or recreate game protocols and servers to make abandoned online game clients functional.¹¹⁶ This work requires circumvention, as game servers and protocols are often protected by TPMs, or may themselves function as TPMs.¹¹⁷ “Many (if not all) game client-server protocols

¹⁰⁸ Steven Kent, *EA Kills ‘Thrill Kill’ Game Before Release*, ZDNET (Oct. 16, 1998), <http://www.zdnet.com/article/ea-kills-thrill-kill-game-before-release/>.

¹⁰⁹ *Id.*

¹¹⁰ See Luke Plunkett, *Rape, Racism & Repetition: This Is Probably the Worst Game Ever Made*, KOTAKU (Oct. 7, 2011), <https://kotaku.com/5847507/rape-racism--repetition-this-is-probably-the-worst-game-ever-made>.

¹¹¹ Paul Brown, *Microsoft Pays Dear for Insults Through Ignorance*, THE GUARDIAN (Aug. 19, 2004), <https://www.theguardian.com/technology/2004/aug/19/microsoft.business>.

¹¹² Stuart Bishop, *Kakuto Chojin Pulled in US and Japan*, COMPUTERANDVIDEOGAMES.COM (Feb. 7, 2003), <https://web.archive.org/web/20121019071449/http://www.computerandvideogames.com/86952/kakuto-chojin-pulled-in-us-and-japan>.

¹¹³ See Fischbach Statement *infra* p. A-1.

¹¹⁴ MADE Comments, *supra* note 4, at 9–11.

¹¹⁵ ESA Comments, *supra* note 8, at 35.

¹¹⁶ MADE Comments, *supra* note 4, at 12.

¹¹⁷ See, e.g., *id.* at A-6 (Lowood Statement) (“[P]rocesses such as authentication will block access [to the game for] researchers, and they will be unable to activate the software.”); Electronic Frontier Foundation, Comment Letter on Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, Class 23 at 4 (2015) (“Because replicating a server protocol requires applying secret information in order to access game functionality, or bypassing or removing cryptographic verification, server protocols may be technical measures that effectively control access to the work.”). Cf. *MDY Industrial, LLC v. Blizzard Entertainment, Inc.*, 629 F.3d 928, 954

probably qualify as TPMs, because they supply information or effectuate some other process needed to access copyrighted works.”¹¹⁸ With online games, the entirety of the client-protocol-server architecture must be operational for the game to function.¹¹⁹ Thus, it is impossible to preserve most online games in playable form without circumvention.¹²⁰ As a result, Opponents’ argument that the adverse effects inhibiting preservation of online video games are not caused by TPMs, but by the decision of the copyright owner to discontinue online services, is incorrect.¹²¹

The Proposed Exemption is necessary to enable the substantial, noninfringing work of preserving important online games.¹²²

ITEM E. ASSERTED ADVERSE EFFECTS ON NONINFRINGING USES

1. Affiliate Archivists are necessary participants in the game preservation process, and would be adequately supervised by eligible libraries, museums, and archives.

In order to accommodate the practical needs of game-preservation organizations,¹²³ the class of users for the Proposed Exemption should include supervised, third-party participants—i.e., Affiliate Archivists.¹²⁴ Soliciting assistance from Affiliate Archivists is often the only way to preserve video games. For example, as discussed in Item C-3(a)(ii) above, the remastering of the classic noir game *Grim Fandango* would not have been possible without the extensive involvement of outside participants.¹²⁵ Similarly, when the publisher Beamdog launched its preservation efforts for *Neverwinter Nights*,¹²⁶ they organized highly skilled community members into an “Advisory Council” to help steer the game’s preservation.¹²⁷ According to Beamdog CEO Trent Oster, “We went to the community even before we had the license.”¹²⁸

(9th Cir. 2010) (finding that a game server protocol that required client software to report on the contents of the computer’s memory was a TPM because it required the application of information to gain access to the work).

¹¹⁸ ESA Comments, *supra* note 8, at 41.

¹¹⁹ See MADE Comments, *supra* note 4, at 9–12 (discussing video game architecture and TPMs).

¹²⁰ See *id.*

¹²¹ See, e.g., ESA Comments, *supra* note 8, at 3 (“This [Proposed Exemption] does not address harms allegedly caused by technological protection measures (“TPMs”) that are the subject of this proceeding, but instead addresses harms created by the termination of online game services.”); *id.* at 13 (“[P]roponents have not even established that their proposed expansion addresses a problem caused by TPMs, as opposed to the discontinuation of a video game service.”); *id.* at 14–15 (generally comparing TPMs with the discontinuation of server support).

¹²² See MADE Comments, *supra* note 4, at 9–12.

¹²³ See *id.* at 4–5, 27–29 (discussing the necessary involvement of affiliates in game preservation projects).

¹²⁴ See *id.* at 7–8, 27–28.

¹²⁵ See Grayson, *supra* note 80; *supra* Item C-3(a).

¹²⁶ *Neverwinter Nights* being preserved by Beamdog is a different game from the similarly named title that the MADE is currently preserving.

¹²⁷ Eric Watson, *How Devs and Fans are Coming Together to Rebuild Neverwinter Nights*, PC GAMER (Jan. 3, 2018), <http://www.pcgamer.com/how-devs-and-fans-are-coming-together-to-rebuild-neverwinter-nights>.

¹²⁸ *Id.*

There is growing agreement that third parties are essential to modern preservation efforts.¹²⁹ The Copyright Office-sponsored Section 108 Study Group advocated for permitting libraries and archives to use third-parties under certain modest restrictions, and recognized that institutions already actively use outside help for their § 108 activities.¹³⁰ In 2016, the Copyright Office noted these recommendations favorably in its ongoing § 108 inquiry.¹³¹ Moreover, in recommending the Current Exemption, the Register noted the usefulness of skilled individuals in preservation work, finding that “interested individuals may be able to contribute to valuable preservation efforts by lending their talents and expertise to qualified institutions.”¹³²

In addition to the explicit restrictions found in the Proposed Exemption discussed in Item C-2(c), Affiliate Archivists would also be limited by the policies of their institutional sponsors. In general, “[l]ibraries and archives tend to be risk-averse” concerning copyright issues,¹³³ and so are likely to invest significant time and resources into ensuring that their Affiliate Archivists do not violate copyright law. For instance, the “risk” of continued play by Affiliate Archivists that Opponents raise would likely be impossible due to institutional restrictions on the use of preserved games.¹³⁴ For instance, at the MADE, “[r]estored servers are located in a closed-loop, off-network system inside the museum. . . . Server access would not even be available via the MADE’s internal network.”¹³⁵ Hence, institutions such as the MADE have already created “an online multiplayer ecosystem accessible only by scholars.”¹³⁶ Risk-averse institutions would also be quick to dismiss Affiliate Archivists that attempt to evade their internal procedures: “[I]f preservation materials were ever publicly released by an affiliate without the copyright owner’s permission, [the MADE] would terminate affiliate status immediately.”¹³⁷

Further, libraries, museums, or archives have the ability to properly supervise Affiliate Archivists. Opponents allege that “if the [P]roposed [E]xemption were adopted, potentially thousands of organizations could deputize vast numbers of affiliates to circumvent TPMs and distribute copies of video games to them without authorization.”¹³⁸ The ESA provides no evidence for such claims. In truth, the actual number of individuals that have the technical ability to engage in preservation

¹²⁹ See, e.g., Richard S. Whitt, “Through a Glass Darkly” *Technical, Policy, and Financial Actions to Avert the Coming Digital Dark Ages*, 33 SANTA CLARA HIGH TECH L.J. 117, 215 (2017) (recent academic study of digital preservation supporting the participation of outside authorities).

¹³⁰ See LAURA N. GASAWAY ET AL., SECTION 108 STUDY GROUP, THE SECTION 108 STUDY GROUP REPORT 40 (2008) [hereinafter Section 108 Study Group Report], <http://www.section108.gov/docs/Sec108StudyGroupReport.pdf>.

¹³¹ See Section 108: Draft Revisions of the Library and Archives Exceptions in U.S. Copyright Law, 81 Fed. Reg. 36594, 36598 (June 7, 2016) (recommending the “outsourcing of certain section 108 activities to third-party contractors”).

¹³² Register’s Recommendation 2015, *supra* note 6, at 351.

¹³³ See MADE Supplementary Statement *infra* pp. A-2; Pre-1972 Sound Recording Report, *supra* note 62, at 70 (stating that “libraries and archives tend to be risk-averse” in the context of copyright law).

¹³⁴ See *supra* n.54 (noting several times where Opponents voiced concern about continued play); *supra* Item C-2(c) (describing how the plain language of the exemption would prohibit the continued play Opponents fear).

¹³⁵ See MADE Supplementary Statement *infra* p. A-2.

¹³⁶ See ESA Comments, *supra* note 8, at 20–21, 27.

¹³⁷ MADE Supplementary Statement *infra* pp. A-2.

¹³⁸ ESA Comments, *supra* note 8, at 29 (quotations omitted).

under the Proposed Exemption is small, and certainly not a “legion.”¹³⁹ Rather, to be included in a preservation project as Affiliate Archivists, persons need to have a high level of technical skill and deep knowledge of the game being preserved. “Affiliates would need to be intimately familiar with the systems, environments and the game they are working on. . . . [T]o consider someone as an [Affiliate Archivist] we’d need to see a level of competence and dedication on the order of a few years of work already done.”¹⁴⁰

The MADE largely supports the § 108 Study Group’s conclusion that reasonable conditions should be placed on the activities of third-party archivists.¹⁴¹ However, we disagree with Opponents’ mischaracterization of this report as establishing strict guidelines for third-parties instead of providing general recommendations.¹⁴² Extensive, *ex ante* regulation is not recommended by the § 108 Study Group and is unnecessary here.

Permitting Affiliate Archivists to utilize the Proposed Exemption recognizes the importance of the broader video game community to the preservation process. The Affiliate Archivist class is not a gateway to piracy and misuse as opponents have warned. Instead, it is a pragmatic way to harness the “talent and expertise” of third parties in the pursuit of saving important online video games at risk of being lost.¹⁴³

2. Maintaining the abandoned online games for the purpose of preservation is a fair use.

In recommending the Current Exemption in 2015, the Register found that preservation of single-player and LAN-connected video games by libraries, museums, or archives was likely fair use.¹⁴⁴ The same holds true for the preservation of online video games under the Proposed Exemption,¹⁴⁵ which places identical restraints on use of preserved material as the Current

¹³⁹ *Id.* at 9, 24, 38, 40.

¹⁴⁰ See MADE Supplementary Statement *infra* p. A-2.

¹⁴¹ See SECTION 108 STUDY GROUP REPORT, *supra* note 130, at 40. Nevertheless, the Study Group offered little analysis on some of its more controversial proposals, such as the suggestion that state institutions waive their sovereign immunity. See *id.* at 42.

¹⁴² See *id.* at 41 (noting that the members “did not agree” on the specifics of one of the three recommended conditions).

¹⁴³ Register’s Recommendation 2015, *supra* note 6, at 351.

¹⁴⁴ See Register’s Recommendation 2015, *supra* note 6, at 340–44 (“[T]he reproduction and modification of functional aspects of video game and console software to enable noncommercial preservation and research activities at qualified institutions are likely to be fair uses”). The Register also noted preservation based on, though not allowed by, § 108, would likely be fair use. *Id.* at 341–42. This Proposed Exemption meets that requirement.

¹⁴⁵ It is worth reiterating the differences between the Proposed Exemption and the 2015 proposal by EFF/Albert. In 2015, proponents sought an exemption that would cover both “continued play” as well as preservation, and that covered both game architecture as well as related matchmaking services. See Register’s Recommendation 2015, *supra* note 6, at 321–22. The 2015 exemption explicitly did *not* include online games. See *id.* at 323. Therefore, the Register’s finding that matchmaking services were non-essential to game functionality, and thus did not need to be preserved along with the game itself, does not mean that *essential* components of an online game’s client-protocol-server architecture need not be preserved. See *id.* at 346–47. Again, the Register’s 2015 analysis explicitly does not concern preservation of online video games. See *id.* at 323.

Exemption.¹⁴⁶ Indeed, as Opponents argued in 2015, the distinction between online games and other games is not meaningful and amounts to a “false distinction.”¹⁴⁷ Therefore, despite Opponents current protestations to the contrary,¹⁴⁸ the type of game being preserved does not alter the fair use analysis. “False distinctions” should not determine what parts of game history are preserved and which will be forgotten.

a. The purpose and character of the uses enabled by the Proposed Exemption favors a finding of fair use.

The first factor, the purpose and character of the use,¹⁴⁹ favors the Proposed Exemption because: (i) video game preservation fits squarely within the exemplary purposes of 17 U.S.C. § 107; (ii) the use is transformative; and (iii) the use is noncommercial.¹⁵⁰

i. Uses of copyrighted works under the Proposed Exemption fit squarely within the examples of fair use provided in the preamble to § 107.

Section 107 explicitly identifies criticism, comment, news reporting, teaching, scholarship, and research as examples of fair use.¹⁵¹ In her recommendation for the Current Exemption, the Register concluded that video game preservation for research and study is a statutorily favored use.¹⁵² Opponents agree: “[P]reservation, research, and study sometimes may qualify as fair uses.”¹⁵³ As courts have repeatedly noted, “assessment of the first fair use factor should be at an end” when a use fits within one of the statutory examples.¹⁵⁴

Here, the Proposed Exemption facilitates preservation of online video games to support criticism, comment, teaching, scholarship, and research.¹⁵⁵ To do so, the Proposed Exemption adopts

¹⁴⁶ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language); 37 C.F.R. § 201.40(b)(8)(B); *supra* Item C-2(a).

¹⁴⁷ ESA Comments 2015, *supra* note 7, at 7 (stating most persistent world game content is stored locally on a user’s machine to improve gameplay and noting that “modern video games include a broad spectrum of local and online content, making it nearly impossible to define the contours of the proposed exemption in practice”).

¹⁴⁸ See ESA Comments, *supra* note 8, at 31–38 (erroneously arguing that preservation is not a fair use); MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

¹⁴⁹ See 17 U.S.C. § 107(1).

¹⁵⁰ See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 578–79 (1994).

¹⁵¹ 17 U.S.C. § 107.

¹⁵² Register’s Recommendation 2015, *supra* note 6, at 343.

¹⁵³ ESA Comments, *supra* note 8, at 33.

¹⁵⁴ *New Era Publications International v. Carol Publishing Group*, 904 F.2d 152, 156 (2d Cir. 1990) (quoting *New Era Publications International v. Henry Holt, Co.*, 884 F.2d 659, 661 (2d Cir. 1989)). See also *Campbell*, 510 U.S. at 578–79 (stating courts may be guided by the preamble); *Wright v. Warner Books, Inc.*, 953 F.2d 731, 736 (2d Cir. 1991) (fitting within the statutory examples is a strong presumption that the first factor favors the defendant).

¹⁵⁵ See *supra* Item C-2; MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption Language).

§ 108-inspired limitations on preservation activities, just as the Current Exemption does.¹⁵⁶ Specifically, the Proposed Exemption only allows “copying and modification of the computer program to restore access to the game . . . when necessary to allow preservation of the game in a playable form.”¹⁵⁷ It also places important restrictions on how, where, and by whom such preservation work can be done. Circumvention must be done by “preservation-oriented” institutions—libraries, archives, or museums.¹⁵⁸ To be eligible, these institutions must make their collections “open to the public and/or routinely available for researchers who are not affiliated with the library, archives, or museum.”¹⁵⁹ Video games must be preserved “without any purpose of direct or indirect commercial advantage.”¹⁶⁰ Additionally, preserving institutions cannot distribute preserved games to the general public “outside of the physical premises of the eligible library, archives or museum.”¹⁶¹ Lastly, the Proposed Exemption only permits copying and modification of video game software “to allow preservation of the game in a playable form,” and does not authorize public performances or public displays of preserved games.¹⁶²

Opponents argue that the Proposed Exemption would, among other things, allow for expanded public display, public performance, and the broad distribution of copyrighted works to (and by) Affiliate Archivists.¹⁶³ The Proposed Exemption does no such thing. It explicitly restricts public access to preserved works, just as the Current Exemption does: “[T]he video game [may not be] distributed or made available to the public outside of the physical premises of the eligible library, archives or museum.”¹⁶⁴ Similarly, Affiliate Archivists must be both supervised by an eligible institution and are forbidden from engaging in infringing activity: “An affiliate of a library, archives, or museum is considered ‘eligible’ when engaged in the lawful preservation of video games under the supervision of an eligible library, archives, or museum.”¹⁶⁵ These restrictions are directly in line with the Register’s 2015 Recommendation and the Current Exemption, which is strongly indicative that the purpose and character of the use of copyrighted works under the Proposed Exemption is fair.

¹⁵⁶ See *supra* Item C-2(a). According to the Register’s 2015 Recommendation, “section 108 provides useful and important guidance as to Congress’s intent regarding the nature and scope of legitimate preservation activities, and hence the types of uses that are most likely to qualify as fair in this area.” Register’s Recommendation 2015, *supra* note 6, at 342.

¹⁵⁷ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption Language). See also 37 C.F.R. § 201.40(b)(8)(i)(B).

¹⁵⁸ See Register’s Recommendation 2015, *supra* note 6, at 341–42; MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

¹⁵⁹ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

¹⁶⁰ *Id.*

¹⁶¹ *Id.*

¹⁶² *Id.*

¹⁶³ See ESA Comments, *supra* note 8, at 32–33.

¹⁶⁴ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language). See also *supra* Item C-2(a).

¹⁶⁵ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language). See also *supra* Item C-2(b), Item E-1.

ii. *The recreation and redesign of essential protocols and servers during the preservation process is transformative.*

The Proposed Exemption supports criticism, comment, teaching, scholarship, and research by making online games that would otherwise be unusable available to scholars. To achieve this, archivists must modify functionally necessary components of a game’s client-protocol-server architecture to make these components work with modern operating systems, programming languages, and hardware.¹⁶⁶ This use is transformative insofar as it imbues preserved games with new meaning and message (by turning games into objects for scholarly attention)¹⁶⁷ and it adds new expression (in the form of new software code).

A use is transformative when it “adds something new, with a further purpose or different character, altering the [copyrighted work] with new expression, meaning, or message.”¹⁶⁸ Courts have long recognized that even complete recreations of a copyrighted work for a different purpose can be transformative. For example, in *Perfect 10, Inc. v. Amazon.com, Inc.*, the Ninth Circuit recognized that Google’s reuse of whole, copyrighted images for the new purpose of directing users to information via a search engine was transformative.¹⁶⁹ Similarly, in *Authors Guild, Inc. v. HathiTrust*, the Second Circuit found digitizing books to enable full text search, thus increasing research access, to be a “quintessentially transformative” use.¹⁷⁰ The contemplated preservation here is similarly transformative because it treats online video games not just as fantastical works of popular entertainment but also as artifacts and “living laboratories”¹⁷¹ for serious scholarship and research.¹⁷² “Multiplayer games have . . . become vehicles for serious academic research in a surprising range of fields.”¹⁷³ Such uses, like those in *HathiTrust* and *Perfect 10*,¹⁷⁴ are not the

¹⁶⁶ See MADE Comments, *supra* note 4, at A-1 (MADE Statement describing the massive efforts to redesign the Habitat server and complexities involved in a potential redesign of *Neverwinter Nights*).

¹⁶⁷ Cf. *Perfect 10, Inc. v. Amazon.com, Inc.*, 508 F.3d 1146, 1165 (9th Cir. 2007) (“although an image may have been created originally to serve an entertainment, aesthetic, or informative function,” it may latter serve a different, transformative purpose as a “source of information”).

¹⁶⁸ *Campbell*, 510 U.S. at 579.

¹⁶⁹ *Perfect 10, Inc.*, 508 F.3d at 1165–66.

¹⁷⁰ *Authors Guild, Inc. v. HathiTrust*, 755 F.3d 87, 97 (2d Cir. 2014).

¹⁷¹ Public Knowledge, Comment Letter Regarding a Proposed Exemption Under 17 U.S.C. § 1201 at 7 (Dec. 19, 2017) [hereinafter Public Knowledge Comments], <https://www.regulations.gov/document?D=COLC-2017-0007-0092>.

¹⁷² See *HathiTrust*, 755 F.3d at 97 (copying of books to create a full-text searchable database “adds to the original something new with a different purpose and a different character,” and thus the use was transformative). See also *Bill Graham Archives v. Dorling Kindersley Ltd.*, 448 F.3d 605, 610 (2d Cir. 2006) (concluding that defendant’s “transformative purpose of enhancing the biographical information in [the work at issue was] a purpose separate and distinct from the original artistic and promotional purpose for which the images were created”).

¹⁷³ Public Knowledge Comments, *supra* note 171, at 6.

¹⁷⁴ See *HathiTrust*, 755 F.3d at 97 (“There is no evidence that the Authors write with the purpose of enabling text searches of their books.”); *Perfect 10*, 508 F.3d at 1165–66 (arguing that using a work for a different purpose is transformative, and that use beneficial to the public weighs in favor of fair use).

original uses contemplated by the games' creators,¹⁷⁵ but instead add "something new, with a further purpose or different character."¹⁷⁶

In addition, game preservation often requires extensively rewriting and reengineering of a game's architecture.¹⁷⁷ In doing so, preservationists add additional functional and expressive elements to a game (i.e., new software code)¹⁷⁸ to allow it to work with modern operating systems and hardware and to stabilize the game's original code against future degradation and rot.¹⁷⁹ As a result, a significant amount of new expression must be added to the original architecture to make a game playable again.¹⁸⁰

Opponents argue that game preservation is not transformative because it seeks to reproduce the original game experience in order to "make online video games playable for recreational purposes by a public audience."¹⁸¹ This argument mischaracterizes the Proposed Exemption by claiming that it authorizes recreational play by the general public,¹⁸² which it explicitly does not. Rather, the Proposed Exemption closely tracks the restrictive language of the Current Exemption and § 108 in limiting distribution and use of preserved games to the premises of an eligible institution.¹⁸³ Furthermore, Opponents ignore the substantial difference between scholarship and entertainment, and the public benefits that accrue from the former.¹⁸⁴ Lastly, Opponents disregard that, incident to preservation, an online game's architecture must be modified to work with

¹⁷⁵ See Michelle M. Wu, *Piece-by-Piece Review of Digitize-and-Lend Projects Through the Lens of Copyright and Fair Use*, 36 LEGAL REFERENCES SERVS. Q. 51, 60 (2017) ("[A]n author does not weave a whimsical tale to preserve it but rather to communicate the content."). Cf. *Hathitrust*, 755 F.3d at 97; *Perfect 10*, 508 F.3d at 1165–66.

¹⁷⁶ *Campbell*, 510 U.S. at 579.

¹⁷⁷ See MADE Comments, *supra* note 4, at A-1–3 (Describing the new code and person hours needed to resurrect *Habitat*). Transformative use creates "new information, new aesthetics, new insights and understandings." *Blanch v. Koons*, 467 F.3d 244, 251–52 (2d Cir. 2006) (quoting *Castle Rock Entertainment, Inc. v. Carol Publishing Group, Inc.*, 150 F.3d 132, 142 (2d Cir. 1998)).

¹⁷⁸ See *Oracle America, Inc. v. Google Inc.*, 750 F.3d 1339, 1363 (Fed. Cir. 2014) (explaining software code is copyrightable expression).

¹⁷⁹ ESA Comments, *supra* note 8, at 35.

¹⁸⁰ See MADE Comments, *supra* note 4, at 17–19 (discussing transformative uses of online video games).

¹⁸¹ ESA Comments, *supra* note 8, at 33–34.

¹⁸² See *id.*

¹⁸³ See *supra* Item C-2; MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language); 37 C.F.R. § 201.40(b)(8)(i)(B). See also Register's Recommendation 2015, *supra* note 6, at 340–44 ("the reproduction and modification of functional aspects of video game and console software to enable noncommercial preservation and research activities at qualified institutions are likely to be fair uses"). The Register also noted a preservation measure based on, though not allowed by § 108, would support fair use. See Register's Recommendation 2015, *supra* note 6, at 342. This Proposed Exemption meets that requirement.

¹⁸⁴ See *Hathitrust*, 755 F.3d at 97; *Perfect 10*, 508 F.3d at 1165–66.

new operating systems and hardware, making the preserved game substantially different from the original: same game, different code.¹⁸⁵

Therefore, because the proposed uses alter the meaning and message of online video games and add new copyrightable expression in the form of new, interoperable software code, they are transformative.

iii. The preservation activities enabled by the Proposed Exemption are non-commercial.

Here, as elsewhere, Opponents argue against the specter of an exemption that has not been proposed.¹⁸⁶ Opponents claim that the MADE seeks to derive commercial benefit from the Proposed Exemption, because the MADE charges an admission fee to its galleries; thus, it intends to commercially exploit online video games by making them “playable for recreational purposes by a public audience.”¹⁸⁷ The only evidence that Opponents offer to substantiate this claim are screenshots from the MADE’s website describing its public exhibitions.¹⁸⁸ However, Opponents ignore other important facets of the MADE’s educational and archival mission, such as the free programming classes it offers to students¹⁸⁹ and the guest speaker series it hosts.¹⁹⁰ Opponents also ignore the fact that many (if not most) museums charge admission fees as a way to offset their operating costs, and that doing so does not compromise their philanthropic missions. For example, the Strong National Museum of Play charges a \$15 admission fee and offers playable exhibits,¹⁹¹ yet Opponents still herald the Strong as a being a “reputable institution[] with the professional staff and facilities necessary for archival storage of important materials.”¹⁹²

Similarly, in alleging commercial use, Opponents again disregard the specific language of the Proposed Exemption.¹⁹³ To ensure that online game preservation is done for “nonprofit educational purposes” only,¹⁹⁴ the Proposed Exemption explicitly requires that the preservation of abandoned online games be “carried out without any purpose of direct or indirect commercial

¹⁸⁵ For example, reproducing *Habitat* required creating entirely new server architecture even though much of the original code was available to the preservationists. See MADE Comments, *supra* note 4, at A-1 (MADE Statement describing how *Habitat* required very different, redesigned, new architecture).

¹⁸⁶ See *supra* Item C-2.

¹⁸⁷ ESA Comments, *supra* note 8, at 33–34.

¹⁸⁸ See *id.* Exhibit A.

¹⁸⁹ See *Scratch Programming Workshop for Kids*, THE MADE, <https://www.themade.org/scratch/> (last visited Mar. 12, 2018).

¹⁹⁰ See *Events and Speakers*, THE MADE, <https://www.themade.org/gallery/> (last visited Mar. 12, 2018).

¹⁹¹ *Hours and Advanced General Admission Fees*, THE STRONG NATIONAL MUSEUM OF PLAY, <http://www.museumofplay.org/visit/hours-admission-fees> (last visited Mar. 11, 2018).

¹⁹² See ESA Comments, *supra* note 8, at 18–19.

¹⁹³ See *id.* at 32–33; MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption Language).

¹⁹⁴ See 17 U.S.C. § 107.

advantage” by museums, archives, libraries, and Affiliate Archivists, and that the collections of such organizations must be “open to the public and/or routinely made available to researchers who are not affiliated with the library, archives or museum.”¹⁹⁵ As such, the preservation of abandoned online video games will serve a noncommercial, educational mission.

Therefore, the uses enabled by the Proposed Exemption are favored by statute, transformative, and noncommercial. Thus, the first factor weighs heavily in favor of fair use.

b. The second factor supports fair use because copying will focus on functional elements and the games in question are “out of print.”

The second factor of fair use considers the nature of the work copied.¹⁹⁶ In the previous rulemaking, the Register noted that the second factor would likely not weigh against fair use when the copying was focused on functional elements.¹⁹⁷ “[T]he works at issue include highly expressive elements, but the focus of the copying is on functional aspects of those works. . . . [Therefore] this factor does not weigh heavily against fair use.”¹⁹⁸ Further, when functional aspects are intertwined with expressive elements, as is the case with many online video games,¹⁹⁹ the copying of these expressive elements does not weigh against fair use. “[W]here the nature of the work is such that purely functional elements exist in the work and it is necessary to copy the expressive elements in order to perform those functions, consideration of this second factor arguably supports a finding that the use is fair.”²⁰⁰ The importance of the second factor is also diminished when, as here, the use is favored under the first factor.²⁰¹

The focus of video game preservation is to return games to their playable, functional state; any copying involved in the process is directed at this goal.²⁰² Under the Proposed Exemption, expressive elements would only be copied when intertwined with functional elements or when such copying is necessary to preserve the game in playable form.²⁰³ Importantly, Opponents previously argued that many online games actually store the majority of their expressive elements

¹⁹⁵ See *supra* Item C-2.

¹⁹⁶ 17 U.S.C. § 107(2).

¹⁹⁷ See Register’s Recommendation 2015, *supra* note 6, at 343.

¹⁹⁸ *Id.*

¹⁹⁹ See ESA Comments 2015, *supra* note 7, at 7.

²⁰⁰ *Oracle*, 750 F.3d at 1375.

²⁰¹ See *Campbell*, 510 U.S. at 586; *Bill Graham Archives v. Dorling Kindersley Ltd.*, 448 F.3d 605, 612 (2d Cir. 2006) (citing *Campbell* for the proposition that the second fair use factor “may be of limited usefulness where the creative work of art is being used for a transformative purpose”). See also Register’s Recommendation 2015, *supra* note 6, at 341 (“In copyright law, preservation uses are treated differently from general, all-purpose uses.”).

²⁰² See MADE Comments, *supra* note 4, at 9 (defining preservation to mean “the repair, modification, replication, or replacement of the game architecture of an abandoned video game to restore it to playable form, including, but not limited to, the creation of new, interoperable protocols and servers”).

²⁰³ See *Oracle*, 750 F.3d at 1375.

on a user's machine locally, and that expressive elements contained on servers are often not as numerous as Opponents now claim.²⁰⁴ As such, few expressive elements may need to be copied during preservation of an online game's architecture.

Additionally, Opponents claim that the "game server software is an unpublished work," and thus copying it is not a fair use.²⁰⁵ It is unclear whether the claim that server software is unpublished is doctrinally correct.²⁰⁶ Regardless, it is irrelevant here because all the *games* subject to the Proposed Exemption were previously published and made available to the public by their copyright owners.²⁰⁷ When a copyrighted work is no longer commercially available, that fact supports fair use under the second factor.²⁰⁸ As the Second Circuit has noted, "a key, though not necessarily determinative, factor in fair use is whether or not the work is available to the potential user. If the work is 'out of print' and unavailable for purchase through normal channels, the user may have more justification for reproducing it than in the ordinary case."²⁰⁹ Here, the Proposed Exemption only covers online video games no longer supported by their publishers—i.e., their publisher has "ceased to provide access to an external computer server" necessary for the game to function.²¹⁰ This is analogous to literary works going "out of print." Thus, for purposes of second factor analysis, the fact that game support has been discontinued favors fair use.²¹¹

Because the copying enabled by the Proposed Exemption would focus on primarily on functional elements and because the works being copied are "out of print," the second factor weighs in favor of fair use. Moreover, because preservation is heavily favored under the first factor, the second factor has minimal effect on the fair use determination.

²⁰⁴ See ESA Comments 2015, *supra* note 7, at 7.

²⁰⁵ See ESA Comments, *supra* note 8, at 36.

²⁰⁶ See, e.g., *Archie MD, Inc. v. Elsevier, Inc.*, 261 F. Supp. 3d 512, 516–518 (S.D.N.Y. 2017) (finding that a copyrighted work may be considered published once it had been licensed). When a server has been used by thousands if not millions of users, and its expressive elements shown to those users, it is hard to see how this work remains unpublished.

²⁰⁷ Even if a work is found to be unpublished, which may weigh against fair use, a use can still be fair in spite of this when the other factors make a strong case for fair use. See *Wright v. Warner Books, Inc.*, 953 F.2d 731, 737–38, 740 (2d Cir. 1991).

²⁰⁸ See *Maxtone-Graham v. Burtchaeil*, 803 F.2d 1253, 1264 n.8 (2d Cir. 1986) (quoting legislative history for the proposition that a "key, though not necessarily determinative factor in fair use is whether or not the work is available to the potential user. If the work is out of print and unavailable for purchase through normal channels, the user may have more justification for reproducing it."). Cf. *Harper & Row Publishers*, 471 U.S. at 553–54 (citing same legislative history, though finding no fair use).

²⁰⁹ See *Maxton-Graham*, 803 F.2d at 1264, n.8 (quoting legislative history).

²¹⁰ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language) (emphasis removed).

²¹¹ See *infra* MADE Supplementary Statement p. A-2; MADE Comments, *supra* note 4, at A-16 (providing a partial list of MMOs that have been abandoned by their publishers).

c. The Proposed Exemption only permits enough reproduction to preserve abandoned games in a playable form.

The third factor asks whether the amount copied from a work is reasonable in light of the purpose of copying.²¹² It requires both a quantitative and qualitative review:²¹³ how much of the copyrighted work will be used, and will the portion used contain the “heart” of the copyrighted work?²¹⁴

In 2015, the Register found the third factor did not weigh against preservation as both a quantitative and qualitative matter.²¹⁵ The same is true here. In preserving an online game, it may be necessary to copy substantial amounts of expression from a game’s architecture to restore its functionality (i.e., to return the game to playable form).²¹⁶ Thus, “[e]ven though the entire work may be copied and used in modified form, because these uses are aimed at the functional rather than expressive aspects of the work,”²¹⁷ the amount of copying does not weigh against fair use.²¹⁸ Similarly, while the portions copied may contain the “heart” of the game, this does not prevent the use from being fair, because preservationists *must* copy the heart of the game to preserve it.²¹⁹ Moreover, when copying the “heart” of the game is consistent with a permissible purpose (in this case, preservation), this fact does not weight against fair use.²²⁰

Additionally, Opponents contend that the third factor weighs against fair use because the Proposed Exemption enables public display of subject works, not just preservation.²²¹ This is untrue. The Proposed Exemption neither authorizes public display nor performance of online games.²²² Rather, the Proposed Exemption only enables copying and modification of online video games as “necessary to allow preservation of the game in a playable form.” And, like the Current Exemption, the Proposed Exemption specifically prohibits online video games from being “distributed

²¹² *Campbell*, 510 U.S. at 586 (citing 17 U.S.C. § 107).

²¹³ *See, e.g., Marcus v. Rowley*, 695 F.2d 1171, 1176 (9th Cir. 1983) (citing MELVILLE NIMMER, 3 NIMMER ON COPYRIGHT § 13.05[A][3] at 13-64 (1982)) (holding that the third factor “requires analysis of both the quantity and quality of the alleged infringement”).

²¹⁴ *See Campbell*, 510 U.S. at 588–89 (citing *Harper & Row Publishers, Inc. v. Nation Enterprises*, 471 U.S. 539, 565 (1985)).

²¹⁵ *See Register’s Recommendation 2015, supra* note 6, at 343–44.

²¹⁶ However, Opponents have previously argued that not all multiplayer games store substantial, expressive elements on servers. *See ESA Comments 2015, supra* note 7, at 7.

²¹⁷ Register’s Recommendation 2015, *supra* note 6, at 344.

²¹⁸ *See id.* at 343.

²¹⁹ *See Campbell*, 510 U.S. at 588. *See also* Register’s Recommendation 2015, *supra* note 6, at 341 (“In copyright law, preservation uses are treated differently from general, all-purpose uses.”).

²²⁰ *See Campbell*, 510 U.S. at 588.

²²¹ *See* ESA Comments, *supra* note 8, at 35.

²²² *See supra* Item C–2(b); MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

or made available to the public outside of the physical premises of the eligible library, archives or museum.”²²³

Because the quantity and quality of copying proposed is consistent with the favored purpose of preservation, the third factor does not weigh against fair use.

d. Preservation of abandoned online video games by eligible institutions and Affiliate Archivists does not harm the market for these works.

As the Register noted in 2015, “allowing circumvention by appropriate entities solely for non-commercial preservation and research purposes—without distribution to or offsite access by members of the public, consistent with section 108—would not appear to carry a significant risk to the market.”²²⁴ Like the Current Exemption, the Proposed Exemption expressly disallows users from distributing or making preserved games available to the public outside of the physical premises of an eligible library, archives, or museum.²²⁵ It expressly requires that preservation efforts be undertaken “without any purpose of direct or indirect commercial advantage.”²²⁶ And it limits the user class of the exemption to “preservation-oriented” groups, namely libraries, archives, museums and their Affiliate Archivists.²²⁷ As such, the Proposed Exemption poses little risk to the market for abandoned online video games.

Though they often allege market harm resulting from game preservation, Opponents provide no evidence of it. Indeed, Opponents did not bother to oppose renewal of the Current Exemption. Instead, as the Register observed in 2015, and Opponent’s now confirm,²²⁸ “the record demonstrates that video game developers have in fact *cooperated* with various institutions to facilitate these activities.”²²⁹ Neither the Current Exemption nor the Proposed Exemption limit the market for re-released games,²³⁰ nor will the Proposed Exemption lead to the creation of inferior public servers that could harm a copyright holder’s reputation, as Opponents claim.²³¹

Finally, Opponents contend, again without evidence, that the Proposed Exemption arms Affiliate Archivists with jailbroken consoles so that they may commit substantial piracy.²³² This is

²²³ Compare MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language), with 37 C.F.R. § 201.40(b)(8).

²²⁴ Register’s Recommendation 2015, *supra* note 6, at 344.

²²⁵ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language); 37 C.F.R. § 201.40(b)(8).

²²⁶ MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

²²⁷ See Register’s Recommendation 2015, *supra* note 6, at 342; MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

²²⁸ See ESA Comments, *supra* note 8, at 16–19 (detailing ESA member companies’ involvement in online game preservation).

²²⁹ Register’s Recommendation 2015, *supra* note 6, at 344 (emphasis added).

²³⁰ See *id.*; ESA Comments, *supra* note 8, at 36–37.

²³¹ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language); ESA Comments, *supra* note 8, at 37.

²³² ESA Comments, *supra* note 8, at 37.

incorrect. Under the Proposed Exemption, Affiliate Archivists may engage only in “the *lawful preservation* of video games under the supervision of an eligible library, archives, or museum.”²³³ Any other activities would be outside the scope of the Proposed Exemption. Moreover, as the Register made clear in 2015, console jailbreaking is often a necessary tool for video game preservation and carries little risk to copyright holders.²³⁴

The fourth factor favors fair use. Therefore, considering all four factors, preservation of abandoned online video games enabled by the Proposed Exemption is likely to be a fair, noninfringing use.

3. All of § 1201(a)(1)(C)’s five statutory factors support the Proposed Exemption.

Consistent with the Register’s 2015 Recommendation, all five § 1201(a)(1)(C) statutory factors support the Proposed Exemption.²³⁵ In addressing these factors, Opponents largely rehash un-persuasive arguments from their 2015 Comments opposing the Current Exemption,²³⁶ and they fail to provide any additional evidence to support these positions.²³⁷

a. The Proposed Exemption will increase the availability of copyrighted works by archiving games that might otherwise be lost, which will generate additional copyrighted works.

The first factor addresses the availability for use of copyrighted works.²³⁸ As discussed above, the Proposed Exemption will preserve online video games that might otherwise be lost.²³⁹ For example, the Proposed Exemption facilitates archiving abandoned online video games in situations where the game’s publisher is defunct, unlocatable, or where the publisher does not have sufficient incentives to preserve its own titles.²⁴⁰ The Proposed Exemption will also stimulate new copyrighted works offering commentary and analysis about preserved online games, thus increasing the overall number of copyrighted works that are available generally.²⁴¹

Opponents argue that the first factor requires the Proposed Exemption to “materially increase” the availability of copyrighted works.²⁴² However, neither § 1201 nor the Register’s 2015

²³³ MADE Comments, *supra* note 4, at 6–8 (emphasis added) (Proposed Exemption language).

²³⁴ Register’s Recommendation 2015, *supra* note 6, at 351.

²³⁵ *See id.* at 348–49.

²³⁶ *See* ESA Comments, *supra* note 8, at 3.

²³⁷ *See* ESA Comments 2015, *supra* note 7, at 20–23.

²³⁸ 17 U.S.C. § 1201(a)(1)(C)(i).

²³⁹ *See supra* Item C-3.

²⁴⁰ *See id.* *See also* List of Defunct Game Publishers *infra* p. A-4.

²⁴¹ *See* MADE Comments, *supra* note 4, at 30.

²⁴² *See* ESA Comments, *supra* note 8, at 39 (addressing whether there would be a “material[]” increase, or “outpouring” of new scholarship).

Recommendation recognized a “materiality” requirement,²⁴³ nor do Opponents themselves attempt to define it. Further, this (apparently) quantitative threshold conflicts with the Register’s previous evaluation of the first factor.²⁴⁴ According to the Register, the first factor supported the Current Exemption because institutions could “restore and maintain access to video games that *might* otherwise be lost.”²⁴⁵ This restoration, the Register continued, “*may* also stimulate new copyrighted works offering commentary and analysis of video games.”²⁴⁶ In focusing on what “might” or “may” occur, nothing in the Register’s Recommendation suggest the “materiality” requirement Opponents urge. The Register also did not deem it important to consider whether a “significant amount” of scholarship is already being done.²⁴⁷

Thus, following the Register’s 2015 analysis, and based on the evidence and arguments provided in this proceeding,²⁴⁸ the first factor supports the Proposed Exemption.

b. The Proposed Exemption explicitly enables preservation of online video games, which will have a positive impact on criticism, comment, news reporting, teaching, scholarship, and research.

The complementary second and third § 1201 factors both strongly support the Proposed Exemption. The second factor considers the availability for use of works for nonprofit archival, preservation, and educational purposes,²⁴⁹ while the third factor evaluates the impact of the prohibition on circumvention on criticism, comment, news reporting, teaching, scholarship, or research.²⁵⁰ The second factor favors granting the Proposed Exemption because the intended goal of this exemption is to facilitate preservation of abandoned online video games.²⁵¹ Likewise, the third factor supports the Proposed Exemption because it would provide scholarly access to works that are currently unavailable due to the anti-circumvention restrictions of § 1201.²⁵²

Opponents allocated little of their analysis to either of these factors.²⁵³ Their only argument suggests that the current system for preserving online video games, which is controlled by

²⁴³ See 17 U.S.C. 1201(a)(1)(C)(i); Register’s Recommendation 2015, *supra* note 6, at 347–48 (lacking any reference to a threshold requirement for factor one in the analysis of both *continued play* and *preservation*).

²⁴⁴ Register’s Recommendation 2015, *supra* note 6, at 348.

²⁴⁵ *Id.* (emphasis added).

²⁴⁶ *Id.* (emphasis added).

²⁴⁷ ESA Comments, *supra* note 8, at 39; Register’s Recommendation 2015, *supra* note 6, at 348. See also *supra* Item C-3(a) (discussing the importance of museums maintaining a level of editorial independence in their preservation decisions).

²⁴⁸ See MADE Comments, *supra* note 4, at 30.

²⁴⁹ 17 U.S.C. § 1201(a)(1)(C)(ii).

²⁵⁰ 17 U.S.C. § 1201(a)(1)(C)(iii).

²⁵¹ See also MADE Comments, *supra* note 4, at 30–31.

²⁵² See *id.* at 31.

²⁵³ See ESA Comments, *supra* note 8, at 40.

publishers, is sufficient.²⁵⁴ As previously discussed, this argument is factually deficient.²⁵⁵ Among other things, Opponents fail to account for the fact that orphaned online video games cannot be currently preserved, leaving a gap in the historical record that frustrates scholarship and research.²⁵⁶

Thus, the second and third § 1201 factors favor granting the Proposed Exemption.

c. The Proposed Exemption will not negatively impact the market for, or value of, abandoned online video games.

Factor four—which considers the effect of circumvention of technological measures on the market for or value of copyrighted works—supports the Proposed Exemption. The Proposed Exemption is explicitly non-commercial, is focused solely on preservation of abandoned online video games, and prohibits preserved games from being “distributed or made available outside of the physical premises of the eligible library, archives or museum.”²⁵⁷ As such, preservation activities enabled by the Proposed Exemption will not take away from the commercial value of abandoned online games. As the Register found in 2015, “circumventing discontinued console-based video games themselves, as well as PC games, is unlikely to harm the market for or value of those copyrighted works.”²⁵⁸ This remains true today, as there is currently little-to-no market demand for abandoned online video games,²⁵⁹ and “[O]pponents have failed to demonstrate that the marketed for reissued games would be materially impacted” by the Proposed Exemption.²⁶⁰ Indeed, the Proposed Exemption may instead have a salutary effect on the market by raising newfound interest in these titles.²⁶¹

Opponents discuss the potential risks of jailbreaking consoles throughout their discussion of § 1201’s statutory factors, but specifically focus on this issue in their analysis of factor four.²⁶² First, Opponents generally claim jailbreaking consoles would result in increased infringement.²⁶³ This argument was definitively rebutted in 2015: according to the Register, “it appears unlikely that jailbreaking of consoles by preservationists in a controlled setting would result in harm to

²⁵⁴ See *id.*

²⁵⁵ See *supra* Item C-3.

²⁵⁶ See *supra* Item C-3.

²⁵⁷ See MADE Comments, *supra* note 4, at 6–8 (prohibiting activities done “for direct or indirect commercial advantage” and preserved online games from being “distributed or made available outside of the physical premises of the eligible library, archives or museum”).

²⁵⁸ Register’s Recommendation 2015, *supra* note 6, at 339.

²⁵⁹ See *id.* (noting that evidence provided in the 2015 rulemaking “concerning potential markets for discontinued versions of games was scant”). See also *id.* at 338 (discussing potential market for abandoned games).

²⁶⁰ *Id.* at 339.

²⁶¹ See MADE Comments, *supra* note 4, at 32.

²⁶² See ESA Comments, *supra* note 8, at 38–41.

²⁶³ See *id.* at 38–39 (“[T]hese [video game console] access controls are also designed to protect other forms of media that are accessible on video consoles, and circumventing them will open game consoles to infringement.”).

the market for either console software or the video games that run on those consoles.”²⁶⁴ Opponents also claim that including Affiliate Archivists in preservation efforts would “facilitate (and invite) a significant increase in infringement.”²⁶⁵ This too is incorrect. Through its restrictions on Affiliate Archivists and its requirement that preserved games not be made available “outside the physical premises” of an eligible institution,²⁶⁶ the Proposed Exemption creates the kind of “controlled setting” necessary to avoid market harm that the Register described during the previous rulemaking.²⁶⁷

The fourth § 1201 factor supports granting the Proposed Exemption because it will not have a negative harm on the market for, or value of, online video games.²⁶⁸

d. The Proposed Exemption does not run afoul of the anti-trafficking provision in § 1201(a)(2).

This fifth statutory factor of § 1201 is a general, catch-all provision.²⁶⁹ Here, Opponents allege that the Proposed Exemption could run afoul of § 1201(a)(2)’s anti-trafficking provision by permitting distribution of modified game client-server protocols that “bypass the normal operation of the game TPMs.”²⁷⁰ However, this argument is predicated on numerous factual mischaracterizations, such as the allegation that the Proposed Exemption will be used for “re-establishing online gameplay.”²⁷¹ In fact, preserved games cannot be made available “outside the physical premises” of an eligible institution.²⁷² As such, Opponents have failed to develop this argument in sufficient detail for it to be legally cognizable.²⁷³

In sum, the five statutory factors of § 1201 support the Proposed Exemption.

²⁶⁴ See Register’s Recommendation 2015, *supra* note 6, at 348.

²⁶⁵ See ESA Comments, *supra* note 8, at 40.

²⁶⁶ See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

²⁶⁷ Register’s Recommendation 2015, *supra* note 6, at 348.

²⁶⁸ *Id.* at 344 (“The Register concludes that in the case of video games that have lost outside server support and cannot be accessed for any type of play, the fourth factor weights in favor of permitting continued access and gameplay of PC and console-based games, as well as copying and modification of console software to the extent necessary to activate an unsupported console game.”)

²⁶⁹ 17 U.S.C. § 1201(a)(1)(C)(v).

²⁷⁰ ESA Comments, *supra* note 8, at 41. Similarly, opponent Joint Creators allege that the Proposed Exemption would violate the Computer Fraud and Abuse Act (18 U.S.C. § 1030) based on the unsubstantiated claim that online game preservation would “require unauthorized hacking into computer servers.” Joint Creator Comments, *supra* note 8, at 10. No evidence is offered to support this specious allegation.

²⁷¹ ESA Comments, *supra* note 8, at 41.

²⁷² See MADE Comments, *supra* note 4, at 6–8 (Proposed Exemption language).

²⁷³ See *id.* Furthermore, the Federal Circuit has called the § 1201(a)(2) theory that undergirds Opponents’ claim to be an “irrational” interpretation that would lead to “absurd and disastrous” results. *Chamberlain Group, Inc. v. Skylink Techs., Inc.*, 381 F.3d 1178, 1200–01 (Fed. Cir. 2004) (holding that it cannot be true that the owners of a “work protected by *both* copyright *and* a technological measure that effectively controls access to that work . . . would possess *unlimited* rights to hold circumventors liable under § 1201(a) *merely for accessing that work*, even if that access enabled *only* rights that the Copyright Act grants to the public”).

4. Conclusion

Copyright is granted not to reward authors but to benefit the public.²⁷⁴ Likewise, Congress instituted the § 1201 triennial rulemaking because it recognized that “the ability of individual members of the public to access and to use copyrighted materials has been a vital factor in the advancement of American’s economic dynamism, social development, and educational achievement.”²⁷⁵ Online video games that have been abandoned by their publishers may yet have significant social and educational value, and may contribute to cultural history,²⁷⁶ teaching,²⁷⁷ and research in myriad fields.²⁷⁸ For this reason, we seek to modestly expand the Current Exemption to facilitate preservation of online video games so that they may be available for scholarly use in the future. Therefore, we respectfully request the Register of Copyrights to recommend the Proposed Exemption.

²⁷⁴ See, e.g., *Twentieth Century Music Corp. v. Aiken*, 422 U.S. 151, 156 (1975) (“[P]rivate motivation must ultimately serve the cause of promoting broad public availability of literature, music, and the other arts.”); *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127–28 (1932) (“The sole interest of the United States and the primary object in conferring the monopoly [of copyright] lie in the general benefits derived by the public from the labors of authors.”).

²⁷⁵ H.R. REP. NO. 105-551, pt. 2, at 35 (1998).

²⁷⁶ See e.g. Dan Iverson, *South Park: “Make Love, Not Warcraft” Review*, IGN (Oct. 5, 2006), <http://www.ign.com/articles/2006/10/05/south-park-make-love-not-warcraft-review>; ELECTRONIC SOFTWARE ASSOCIATION, ESSENTIAL FACTS ABOUT THE COMPUTER AND VIDEO GAME INDUSTRY 4 (2017), http://www.theesa.com/wp-content/themes/esa/assets/EF2017_Design_FinalDigital.pdf (stating over 65% of households spend more than three hours a week playing video games and more than half of frequent gamers play online multiplayer games). See also Heather Chaplin, *Is That Just Some Game? No, It’s a Cultural Artifact*, NEW YORK TIMES, (March 12, 2007), <http://www.nytimes.com/2007/03/12/arts/design/12vide.html>.

²⁷⁷ See MADE Comments, *supra* note 4, at A-13 (Taylor Statement).

²⁷⁸ See e.g. Robert Shapiro, *Fantasy Economics*, SLATE (Feb. 4, 2003), http://www.slate.com/articles/business/the_dismal_science/2003/02/fantasy_economics.html (noting online video games used in economic research); Eric T Lofgren & Nina H. Fefferman, *The Untapped Potential of Virtual Game Worlds to Shed Light on Real World Epidemics*, 7 LANCET INFECTIOUS DISEASES 625, 629 (2007) (finding online video games to be ideal to study responses to disease epidemics); Chee Siang Ang Et al., *a Model of Cognitive Loads in Massively Multiplayer Online Role Playing Games*, 19 INTERACTING WITH COMPUTERS 167 (2006), <https://www.sciencedirect.com/science/article/pii/S0953543806001135> (discussing the usefulness of online video games in studying addiction).

DOCUMENTARY EVIDENCE

Statement of Gregory Fischbach, Video Game Executive

March 7, 2018

I am writing in support of the MADE's petition for a DMCA exemption to facilitate the preservation of online video games. I have been involved in the video game and software industry since 1983, having served as President of Activision International (1983–86); Founder, Chairman and CEO of Acclaim Entertainment (1987–2003); and Founder and Executive Chairman of Rabbit, Inc. (2013–Present). I also co-founded the Entertainment Software Association (ESA) and the Entertainment Software Rating Board in the mid-1990s, and served as the ESA's Chairman for two years.

I support the video game preservation work being done by the MADE, its affiliates, and similar institutions because the number of games that need to be preserved is too vast—and the technical challenges involved in preserving games too substantial—for any one organization to do it on its own. While I applaud the work being done by many video game publishers to preserve their own history, these efforts alone are insufficient, as they do not preserve the countless titles whose publishers are defunct, unknown, or do not have the ability to preserve older games. Simply, no single company or organization has the resources, time, or incentives to preserve all culturally significant video games. Even if one organization could carry that burden, it is too risky to house a whole class of important artifacts in one location or with one organization. Rather, a variety of different institutions need to be involved in the preservation process.

Organizations like the MADE have an important role in video game preservation because they have the rare combination of will and technical expertise necessary to both preserve games and to facilitate scholarly study of them. In particular, the MADE and its sister organizations are uniquely situated to preserve games that are of great cultural, historical, and technical significance but that may not be preserved by their publishers due to economic considerations or other concerns (e.g., controversial games).

Video game preservation is an immense technological challenge; it need not be a legal one as well. The DMCA exemption proposed by the MADE is necessary to facilitate the preservation of unsupported (and, in many cases, orphaned) video games, and will help incentivize the lawful preservation of these works. Due to the fragility of digital storage media and the pace at which older technologies become obsolete, video game preservation is a problem that demands urgent action from both private companies and public libraries, museums, and archives.

Thank you for your consideration.

Gregory Fischbach

Additional Statement of The Museum of Art and Digital Entertainment

March 13, 2018

1. How do museums and archives determine which games should be preserved? What sort of factors do you consider in picking a project?

We determine which games to preserve based on risk of loss, technical feasibility, and cultural/historical importance. For example, we chose to preserve *Habitat* because many of the original software engineers involved in the game's development wanted to work on its preservation and because, in terms of importance, *Habitat* is about as significant of an online game as there ever has been.

Picking a game to preserve also requires us to assess the likelihood of success: what games need to be brought back, and how difficult is it going to be to bring them back? Often, we cannot choose certain important games for preservation because we lack sufficient resources—this is one of the reasons why we need to involve affiliates with specific technical skills. Sadly, this means that more obscure games are at the highest risk of being lost forever, even if they have great cultural or research value.

Since we've now preserved the first MMO, we're trying to walk forward in time. Our next target is likely to be *Neverwinter Nights* (1990 version), which is one of the first actual online RPGs. This game, like *Habitat*, was also hosted on AOL, so we've got some experience with the game architecture and TPMs involved, though only about 5% of what we learned restoring *Habitat* will likely be applicable. With each project, you pretty much have to start from scratch.

2. What sort of activities would Affiliate Archivists be involved in, and what sort of qualifications would they need (e.g., game knowledge, coding skills, prior involvement with game development, etc.)?

Affiliates would need to be intimately familiar with the systems, environments, and the game they are working on. A qualified team would have a ridiculously difficult road ahead of them, so if any of the original team members from the game's development process were available, they'd be the most ideal candidates.

Affiliates help expand the MADE's preservation resources. Because we have a limited number of in-house developers and projects managers devoted to preservation, the MADE has to be extremely selective about who we work with: offering affiliate status to random developers online would only create more work for us and drain the MADE's already thin resources. An ideal affiliate would arrive with a good deal of the preservation work already done themselves; ideally, they would bring us something near-finished that we could integrate with our own efforts. Engaging with groups just beginning to think about preserving a game would be a waste of our time,

as the process is so long and difficult there's little chance of a team making it to the finish line. In other words, to consider someone as an affiliate we'd need to see a level of competence and dedication on the order of a few years of work already done.

3. How would preservation organizations supervise Affiliate Archivists that are not working on-site?

When we are working with an outside group on a project, we typically have monthly or quarterly update meetings with their project leads, and we regularly monitor chat room discussions, check issue trackers, source controls, and the like. And if preservation materials were ever publicly released by an affiliate without the copyright owner's permission, we would terminate affiliate status immediately. As a project is reaching completion, we'd evaluate the source code with a team of experts (such as veteran software developers) to ensure it meets our preservation standards. We'd also want to ensure the project is in a form that can be maintained by our staff in the future.

We make great efforts to work with the original rights holders of a game if at all possible. It is ALWAYS our preference to work with the rights holders on preservation projects, as this significantly increases the likelihood of a project's success. Sadly, this is often not possible, as many rights holders are out of business or cannot be located. In working with rights holders, we try to strike a balance between making sure that all the necessary game components are preserved while ensuring the rights holders are not harmed in the market, and are indeed accepting of what we produce for internal display. In this way, we'd like to be the bridge between the industry and fan-remakes.

4. How would you ensure that preserved online games are not "distributed or made available to the public outside the physical premises" of the MADE?

Restored servers are located in a closed-loop, off-network system inside the museum. Software development processes would not include open source licenses, and development would be done in a private fashion, with restricted access controls to all source materials and server systems. Server access would not even be available via the MADE's internal network. In effect, such systems would be "air-gapped" from internal and external systems, as per DOD specifications for high security networks: if nothing is connected to an outside network or the Internet, only to itself, there is little to no risk of the system being hacked from the outside.

Users of these systems would have to be on-site at the MADE in order to play the game in its original form. Preferentially, schematics of these systems: server/client, and even the networking equipment between them, would be on display and explicitly explained to the public, like a giant diagram of a city and its sewers, or a cross section of a boat with detailed annotations. However, playable access to preserved games themselves could be restricted to scholars and researchers through a digital reading room if necessary for security or legal reasons.

List of Defunct Game Publishers²⁷⁹

- 7th Level, defunct 1998
- Aackosoft, defunct 1988
- Aardvark Software, defunct 1989
- Absolute Entertainment, defunct 1995
- Access Software, defunct 2006
- ADK, defunct 2003
- Adventure International, defunct 1985
- Affect, defunct 2008
- Agatsuma Entertainment, defunct 2016
- Alchemist, defunct 2016
- Allumer, defunct 1999
- American Game Cartridges, defunct 1994
- ANALOG Software, defunct 1989
- Antic Software, defunct 1990
- APF Electronics Inc., defunct 1983
- AQ Interactive, defunct 2011
- Arcadia Systems, defunct 1991
- Arsys Software, defunct 2001
- Artech Digital Entertainment, defunct 2011
- Artic Computing, defunct 1986
- Arush Entertainment, defunct 2005
- ASC Games, defunct 2000
- Ascaron, defunct 2009
- Atlantis Software, defunct 1992
- Attic Entertainment Software, defunct 2001
- Audiogenic Limited, defunct 1985
- Automata UK, defunct 1985
- Aventuras AD, defunct 1992
- BBC Multimedia, defunct 2005
- Beagle Bros, defunct 1991
- Berkeley Systems, defunct 2000
- Big Five Software, defunct 1984
- Black Legend, defunct 1996
- Blue Ribbon, defunct 1991
- Brash Entertainment, defunct 2008
- Bubble Bus Software, defunct 1989
- BudgeCo, defunct 1983
- California Dreams, defunct 1991
- California Pacific Computer Company, defunct 1983
- Capstone Software, defunct 1996
- Casady & Greene, defunct 2003
- CDV Software Entertainment AG, defunct 2010
- Centuri, defunct 1985
- Cinemaware, defunct 1991
- CommaVid, defunct 1983
- Commodore, defunct 1994
- Compile, defunct 2003
- Computer and Video Games, defunct 2004
- Core Design, defunct 2010
- Creative Computing, defunct 1985
- Cryo Interactive, defunct 2002
- Cyberdreams, defunct 1997
- Data Age, defunct 1983
- Data Becker, defunct 2014

²⁷⁹ *List of Video Game Publishers*, WIKIPEDIA, https://en.wikipedia.org/wiki/List_of_video_game_publishers (last visited Mar. 11, 2018) (showing only publishers Wikipedia lists as defunct in a specific year).

- Data Design Interactive, defunct 2012
- Datamost, defunct 1985
- Davidson & Associates, defunct 1999
- dB-SOFT, defunct 2001
- Delphine Software International, defunct 2004
- Delta 4, defunct 1992
- Digital Integration, defunct 2005
- Digital Jesters, defunct 2006
- Digital Pictures, defunct 1996
- Dinamic Multimedia, defunct 2001
- Dinamic Software, defunct 1992
- DK'Tronics, defunct 1993
- Dooyong, defunct 1996
- Dragon Data, defunct 1984
- Dynamix, defunct 2001
- Edu-Ware, defunct 1985
- Electric Dreams Software, defunct 1989
- Electric Transit, defunct 1987
- Electro Brain, defunct 1998
- Electronic Arts Victor, defunct 2003
- ELF Corporation, defunct 2015
- Emerald Software, defunct 1991
- Empire Interactive, defunct 2009
- English Software, defunct 1987
- Eolith, defunct 2005
- Eon Digital Entertainment, defunct 2002
- Exidy, defunct 1989
- Fabtek, defunct 1999
- Fantasy Software, defunct 1985
- Faster Than Light, defunct 1989
- Fill-in-Cafe, defunct 1998
- Firebird Software, defunct 1989
- Flight-Plan, defunct 2010
- Flying Edge, defunct 1994
- Froggo, defunct 1989
- FTL Games, defunct 1996
- Future Games, defunct 2011
- Game Park, defunct 2007
- Game Studio, defunct 2015
- Games by Apollo, defunct 1983
- GameTek, defunct 1998
- Gargoyle Games, defunct 1987
- Gathering of Developers, defunct 2004
- G-Collections, defunct 2015
- Gebelli Software, defunct 1984
- General Entertainment, defunct 2011
- Gizmondo, defunct 2006
- Gotham Games, defunct 2003
- Gottlieb, defunct 1996
- Grandslam Entertainment, defunct 1995
- Groove Games, defunct 2009
- GTE Interactive Media, defunct 1997
- Hacker International, defunct 2001
- Hect, defunct 2002
- Hewson Consultants, defunct 1991
- Human Entertainment, defunct 2000
- Humongous Entertainment, defunct 2004
- Imageepoch, defunct 2015
- Imagine Software, defunct 1984
- Impressions Games, defunct 2004
- Innerprise Software, defunct 1992
- Interceptor Micros, defunct 1992
- INTV Corporation, defunct 1990
- ITE Media, defunct 2010
- Kalisto Entertainment, defunct 2002
- Kaypro, defunct 1992
- KID, defunct 2006
- Kingsoft, defunct 2000

- Krisalis Software, defunct 2001
- Lankhor, defunct 2001
- Legend Entertainment, defunct 2004
- Lego Interactive, defunct 2005
- Level 9 Computing, defunct 1991
- Lighthouse Interactive, defunct 2009
- Loriciel, defunct 1995
- Mad Catz, defunct 2017
- Max Design, defunct 2004
- MC Lothlorien, defunct 1990
- MECC, defunct 1999
- Media Rings, defunct 2007
- Mega Enterprise, defunct 2007
- Metro3D, Inc., defunct 2004
- Metropolis Software, defunct 2009
- MGM Interactive, defunct 2005
- Micro Genius, defunct 1994
- Micro Power, defunct 1987
- MicroGraphic Image, defunct 1984
- Microsphere, defunct 1987
- Milton Bradley Company, defunct 2009
- Mitchell Corporation, defunct 2012
- Monte Cristo, defunct 2010
- Mosaic Publishing, defunct 1988
- Motown Games, defunct 1996
- Mud Duck Productions, defunct 2007
- Mystique, defunct 1983
- Naxat Soft, defunct 2015
- New Generation Software, defunct 1986
- NewKidCo, defunct 2005
- Novagen Software, defunct 1992
- NTDEC, defunct 1993
- Nutting Associates, defunct 1976
- Odin Computer Graphics, defunct 1988
- Opera Soft, defunct 1992
- Paragon Software, defunct 1992
- Parsoft Interactive, defunct 2002
- Pionesoft, defunct 2008
- Piranha Games, defunct 1988
- Piranha Interactive Publishing, defunct 1999
- Presto Studios, defunct 2002
- Probe Software, defunct 2004
- Programma International, defunct 1983
- Psikyo, defunct 2003
- Quality Software, defunct 1984
- Quantum Quality Productions, defunct 1995
- Quest Corporation, defunct 2002
- Quintet, defunct 2002
- Rage Software, defunct 2003
- Red Ant Enterprises, defunct 2011
- Red Orb Entertainment, defunct 2001
- Red Shift, defunct 1985
- RedOctane, defunct 2010
- RedSpotGames, defunct 2013
- reLINE Software, defunct 2004
- Richard Shepherd Software, defunct 1984
- Right Stuff, defunct 1999
- Ripcord Games, defunct 2009
- Riverhillsoft, defunct 2004
- Romstar, defunct 1992
- Sanctuary Woods, defunct 2001
- Scavenger, Inc., defunct 1998
- Sherston Software, defunct 2011
- Silmarils, defunct 2003
- Simon & Schuster Interactive, defunct 2003
- Sirius Software, defunct 1984

- Sir-Tech, defunct 2003
- Softape, defunct 1983
- Softdisk, defunct 2016
- Softek International Ltd, defunct 1989
- SoftSide, defunct 1984
- Software 2000, defunct 2002
- Software Projects, defunct 1985
- Sony Imagesoft, defunct 1995
- Spectravideo, defunct 1988
- Starpath, defunct 1984
- Storm Impact, defunct 1997
- Stormfront Studios, defunct 2008
- Studio e.go!, defunct 2009
- Sunrise Interactive, defunct 2008
- Suzy Soft, defunct 1988
- Sydney Development Corporation, defunct 1989
- Synapse Software, defunct 1986
- Synergistic Software, defunct 1999
- TDK Mediactive, defunct 2003
- Telarium, defunct 1987
- Telenet Japan, defunct 2007
- Telesys, defunct 1984
- Tengen, defunct 1994
- Thalamus Ltd, defunct 1993
- Thalion Software, defunct 1994
- The Fourth Dimension, defunct 2004
- The Vision Factory, defunct 2002
- Three-Sixty Pacific, defunct 1994
- Toaplan, defunct 1994
- Tonkin House, defunct 2008
- Topo Soft, defunct 1994
- Topologika, defunct 2013
- Toshiba EMI, defunct 2013
- Towa Chiki, defunct 2001
- Treco, defunct 1993
- Trilobyte Software, defunct 1999
- UEP Systems, defunct 2001
- Ultimate Play the Game, defunct 1988
- Ultrasoft, defunct 1998
- US Games, defunct 1983
- Varie, defunct 1997
- VEB Polytechnik, defunct 2006
- Victor Interactive, defunct 2007
- Video System, defunct 2001
- Vortex Software, defunct 1990
- Wanadoo Edition, defunct 2003
- WARP, defunct 2005
- Whoopee Camp, defunct 2000
- Windmill Software, defunct 1984
- Winkysoft, defunct 2015
- WizardWorks, defunct 2004
- Xicat Interactive, defunct 2005
- Xonox, defunct 1984
- Yonezawa PR21, defunct 1998
- Yutaka, defunct 2003
- Zaccaria, defunct 1988
- Zimag, defunct 1983