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

² See id.
⁵ 37 C.F.R. § 201.40(b)(8) (text of Current Exemption).
preservation of a class of games excluded from consideration in 2015 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”).

9 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.

10 See infra Item E-3.

11 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.

12 See infra nn.45, 51.

13 See infra Items C-2, C-3.

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 support 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 video games that can be “played by users without accessing or reproducing copyrightable content stored or previously stored on an external computer server.”28

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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 . . . .”).
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 rea-
sonable extensions of the Current Exemption. First, the Proposed Exemption would allow for
preservation of online games that require “an external computer server” to function. Second,
the Proposed Exemption permits lawful preservation to be undertaken by “[a]n affiliate of a li-
brary, archives or museum.” 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.

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

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 architec-
ture to make the game functional in a closed-network environment. 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 inter-
ested 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 contin-
ued play as well as preservation. See 37 C.F.R. § 201.40(b)(8)(i)(A), (B). As detailed in our initial Comments, the Pro-
posed 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 aban-
donated 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 (“[N]in 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.
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)).
61 See infra Item E-1.
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 consoles will result in increased infringement. 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.” 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.” 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. 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. However, we disagree with Opponents’ contention that preservation efforts are sufficient, 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.” 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;” 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.
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. Opponents assert: “The existing exemption, together with preservation efforts by ESA and its members, is sufficient to preserve important games.” 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. Because the Current Exemption does not apply to online video games, 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. Furthermore, even if copyright holders preserved every game in their back catalogues, many games would still be excluded from preservation. “Simply, no single company or organization has the resources, time, or incentives to preserve all culturally significant video games.” 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.” Hence, the idea that current industry preservation efforts are sufficient to preserve important games is inaccurate when the instability of the video game industry is considered.

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.


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.” For copyright holders, preservation is a matter of “business judgment.” 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.” 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. 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.”

Further, Opponents acknowledge the importance of the Current Exemption in enabling preservation of single-player or LAN-enabled games, 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.” 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.”

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.

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81 ESA Comments, supra note 8, at 15. See generally id. at 15–18.
82 See id. at 16.
83 Pre-1972 Sound Recording Report, supra note 62, at 63.
86 See ESA Comments, supra note 8, at 3, 7.
87 See ESA Comments 2015, supra note 7, at 7.
88 See ESA Comments, supra note 8, at 7.
89 See generally id. at 15–18.
90 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, 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.

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.” 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.” For example, beloved noir adventure game **Grim Fandango**—considered one of the best games of all time by critics—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. 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.” 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. 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-remake-.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.


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 ar-
chive demonstrates the risk of housing valuable artifacts in a single location. The Proposed Ex-
emption 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 revis-
sionism.

If copyright owners exclusively control preservation of online video games—as Opponents ur-
ge103—they may intentionally exclude games with offensive or embarrassing content from ar-
chives, 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
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 preser-
vation 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 muse-
ums 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-
106 See, e.g., HAIDEE WASSON, MUSEUM MOVIES: THE MUSEUM OF MODERN ART AND THE BIRTH OF ART CINEMA 137 (2005) (de-
scribing 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. EA justified this decision by arguing that the game “was not the kind of title that we wanted to see in the market.” 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. 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. Microsoft subsequently destroyed all the copies of the game in their possession. 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. 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. “Online video games are unplayable without the server software that embodies interactions among players and their environment.” As such, it is often necessary for preservationists to repair or recreate game protocols and servers to make abandoned online game clients functional. This work requires circumvention, as game servers and protocols are often protected by TPMs, or may themselves function as TPMs. “Many (if not all) game client-server protocols

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109 Id.
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.” With online games, the entirety of the client-protocol-server architecture must be operational for the game to function. Thus, it is impossible to preserve most online games in playable form without circumvention. 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.

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

**ITEM E. ASSERTED ADVERSE EFFECTS ON NONINFRINGEMENT 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, the class of users for the Proposed Exemption should include supervised, third-party participants—i.e., Affiliate Archivists. 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. Similarly, when the publisher Beamdog launched its preservation efforts for *Neverwinter Nights*, they organized highly skilled community members into an “Advisory Council” to help steer the game’s preservation. According to Beamdog CEO Trent Oster, “We went to the community even before we had the license.”

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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.
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

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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).


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


138 ESA Comments, supra note 8, at 29 (quotations omitted).
under the Proposed Exemption is small, and certainly not a “legion.” 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.”

The MADE largely supports the § 108 Study Group’s conclusion that reasonable conditions should be placed on the activities of third-party archivists. However, we disagree with Opponents mischaracterization of this report as establishing strict guidelines for third-parties instead of providing general recommendations. 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.

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. The same holds true for the preservation of online video games under the Proposed Exemption, which places identical restraints on use of preserved material as the Current

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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.\textsuperscript{146} Indeed, as Opponents argued in 2015, the distinction between online games and other games is not meaningful and amounts to a “false distinction.”\textsuperscript{147} Therefore, despite Opponents current protestations to the contrary,\textsuperscript{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.

\begin{itemize}
\item[a.] The purpose and character of the uses enabled by the Proposed Exemption favors a finding of fair use.
\end{itemize}

The first factor, the purpose and character of the use,\textsuperscript{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.\textsuperscript{150}

\begin{itemize}
\item[i.] Uses of copyrighted works under the Proposed Exemption fit squarely within the examples of fair use provided in the preamble to § 107.
\end{itemize}

Section 107 explicitly identifies criticism, comment, news reporting, teaching, scholarship, and research as examples of fair use.\textsuperscript{151} In her recommendation for the Current Exemption, the Register concluded that video game preservation for research and study is a statutorily favored use.\textsuperscript{152} Opponents agree: “[P]reservation, research, and study sometimes may qualify as fair uses.”\textsuperscript{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.\textsuperscript{154}

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

\begin{itemize}
\item[146] See MADE Comments, \textit{supra} note 4, at 6–8 ( Proposed Exemption language); 37 C.F.R. § 201.40(b)(8)(B); \textit{supra} Item C-2(a).
\item[147] ESA Comments 2015, \textit{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”).
\item[148] See ESA Comments, \textit{supra} note 8, at 31–38 (erroneously arguing that preservation is not a fair use); MADE Comments, \textit{supra} note 4, at 6–8 (Proposed Exemption language).
\item[149] See 17 U.S.C. § 107(1).
\item[152] Register’s Recommendation 2015, \textit{supra} note 6, at 343.
\item[153] ESA Comments, \textit{supra} note 8, at 33.
\item[154] \textit{New Era Publications International v. Carol Publishing Group}, 904 F.2d 152, 156 (2d Cir. 1990) (quoting \textit{New Era Publications International v. Henry Holt, Co.}, 884 F.2d 659, 661 (2d Cir. 1989)). See also \textit{Campbell}, 510 U.S. at 578–79 (stating courts may be guided by the preamble); \textit{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).
\item[155] See \textit{supra} Item C-2; MADE Comments, \textit{supra} note 4, at 6–8 (Proposed Exemption Language).  
\end{itemize}
§ 108-inspired limitations on preservation activities, just as the Current Exemption does.\textsuperscript{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.”\textsuperscript{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.\textsuperscript{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.”\textsuperscript{159} Video games must be preserved “without any purpose of direct or indirect commercial advantage.”\textsuperscript{160} Additionally, preserving institutions cannot distribute preserved games to the general public “outside of the physical premises of the eligible library, archives or museum.”\textsuperscript{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.\textsuperscript{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.\textsuperscript{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.”\textsuperscript{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.”\textsuperscript{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.

\textsuperscript{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.

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

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

\textsuperscript{159} MADE Comments, supra note 4, at 6–8 (Proposed Exemption language).

\textsuperscript{160} Id.

\textsuperscript{161} Id.

\textsuperscript{162} Id.

\textsuperscript{163} See ESA Comments, supra note 8, at 32–33.

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

\textsuperscript{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.\textsuperscript{166} This use is transformative insofar as it imbues preserved games with new meaning and message (by turning games into objects for scholarly attention)\textsuperscript{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.”\textsuperscript{168} Courts have long recognized that even complete recreations of a copyrighted work for a different purpose can be transformative. For example, in \textit{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.\textsuperscript{169} Similarly, in \textit{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.\textsuperscript{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”\textsuperscript{171} for serious scholarship and research.\textsuperscript{172} “Multiplayer games have . . . become vehicles for serious academic research in a surprising range of fields.”\textsuperscript{173} Such uses, like those in \textit{HathiTrust} and \textit{Perfect 10},\textsuperscript{174} are not the

\textsuperscript{166} See MADE Comments, \textit{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 \textit{Neverwinter Nights}).
\textsuperscript{167} Cf. \textit{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”).
\textsuperscript{168} \textit{Campbell}, 510 U.S. at 579.
\textsuperscript{169} \textit{Perfect 10, Inc.}, 508 F.3d at 1165–66.
\textsuperscript{170} \textit{Authors Guild, Inc. v. HathiTrust}, 755 F.3d 87, 97 (2d Cir. 2014).
\textsuperscript{172} See \textit{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). \textit{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”).
\textsuperscript{173} Public Knowledge Comments, \textit{supra} note 171, at 6.
\textsuperscript{174} See \textit{HathiTrust}, 755 F.3d at 97 (“There is no evidence that the Authors write with the purpose of enabling text searches of their books.”); \textit{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
new operating systems and hardware, making the preserved game substantially different from the original: same game, different code.\textsuperscript{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.

\textit{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.\textsuperscript{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.”\textsuperscript{187} The only evidence that Opponents offer to substantiate this claim are screenshots from the MADE’s website describing its public exhibitions.\textsuperscript{188} However, Opponents ignore other important facets of the MADE’s educational and archival mission, such as the free programming classes it offers to students\textsuperscript{189} and the guest speaker series it hosts.\textsuperscript{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,\textsuperscript{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.”\textsuperscript{192}

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

\begin{flushleft}\begin{footnotesize}\textsuperscript{185} For example, reproducing \textit{Habitat} required creating entirely new server architecture even though much of the original code was available to the preservationists. \textit{See} MADE Comments, \textit{supra} note 4, at A-1 (MADE Statement describing how Habitat required very different, redesigned, new architecture). \textsuperscript{186} \textit{See supra} Item C-2. \textsuperscript{187} ESA Comments, \textit{supra} note 8, at 33–34. \textsuperscript{188} \textit{See id.} Exhibit A. \textsuperscript{189} \textit{See Scratch Programming Workshop for Kids}, THE MADE, https://www.themade.org/scratch/ (last visited Mar. 12, 2018). \textsuperscript{190} \textit{See Events and Speakers}, THE MADE, https://www.themade.org/gallery/ (last visited Mar. 12, 2018). \textsuperscript{191} \textit{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). \textsuperscript{192} \textit{See ESA Comments}, \textit{supra} note 8, at 18–19. \textsuperscript{193} \textit{See id.} at 32–33; MADE Comments, \textit{supra} note 4, at 6–8 (Proposed Exemption Language). \textsuperscript{194} \textit{See 17 U.S.C. § 107.}\end{footnotesize}\end{flushleft}
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, 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

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195 See supra Item C-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 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.”).
201 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”).
202 See Oracle, 750 F.3d at 1375.
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.\textsuperscript{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.\textsuperscript{205} It is unclear whether the claim that server software is unpublished is doctrinally correct.\textsuperscript{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.\textsuperscript{207} When a copyrighted work is no longer commercially available, that fact supports fair use under the second factor.\textsuperscript{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.”\textsuperscript{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.\textsuperscript{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.\textsuperscript{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.

\textsuperscript{204} See ESA Comments 2015, \textit{supra} note 7, at 7.
\textsuperscript{205} See ESA Comments, \textit{supra} note 8, at 36.
\textsuperscript{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.
\textsuperscript{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).
\textsuperscript{208} See Maxtone-Graham v. Burtchaell, 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).
\textsuperscript{209} See Maxton-Graham, 803 F.2d at 1264, n.8 (quoting legislative history).
\textsuperscript{210} See MADE Comments, \textit{supra} note 4, at 6–8 (Proposed Exemption language) (emphasis removed).
\textsuperscript{211} See \textit{infra} MADE Supplementary Statement p. A-2; MADE Comments, \textit{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. It requires both a quantitative and qualitative review: how much of the copyrighted work will be used, and will the portion used contain the “heart” of the copyrighted work?

In 2015, the Register found the third factor did not weigh against preservation as both a quantitative and qualitative matter. 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). 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,” the amount of copying does not weigh against fair use. 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. 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.

Additionally, Opponents contend that the third factor weighs against fair use because the Proposed Exemption enables public display of subject works, not just preservation. This is untrue. The Proposed Exemption neither authorizes public display nor performance of online games. 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

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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”).
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

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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.”

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.

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. In addressing these factors, Opponents largely rehash unpersuasive arguments from their 2015 Comments opposing the Current Exemption, and they fail to provide any additional evidence to support these positions.

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. As discussed above, the Proposed Exemption will preserve online video games that might otherwise be lost. 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. 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.

Opponents argue that the first factor requires the Proposed Exemption to “materially increase” the availability of copyrighted works. 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.
239 See supra Item C-3.
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, nor do Opponents themselves attempt to define it. Further, this (apparently) quantitative threshold conflicts with the Register’s previous evaluation of the first factor. 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.” This restoration, the Register continued, “may also stimulate new copyrighted works offering commentary and analysis of video games.” 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.

Thus, following the Register’s 2015 analysis, and based on the evidence and arguments provided in this proceeding, 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, while the third factor evaluates the impact of the prohibition on circumvention on criticism, comment, news reporting, teaching, scholarship, or research. The second factor favors granting the Proposed Exemption because the intended goal of this exemption is to facilitate preservation of abandoned online video games. 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.

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

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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.
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.\textsuperscript{254} As previously discussed, this argument is factually deficient.\textsuperscript{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.\textsuperscript{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.”\textsuperscript{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.”\textsuperscript{258} This remains true today, as there is currently little-to-no market demand for abandoned online video games,\textsuperscript{259} and “[O]pponents have failed to demonstrate that the marketed for reissued games would be materially impacted” by the Proposed Exemption.\textsuperscript{260} Indeed, the Proposed Exemption may instead have a salutary effect on the market by raising newfound interest in these titles.\textsuperscript{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.\textsuperscript{262} First, Opponents generally claim jailbreaking consoles would result in increased infringement.\textsuperscript{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

\textsuperscript{254} See id.
\textsuperscript{255} See supra Item C-3.
\textsuperscript{256} See supra Item C-3.
\textsuperscript{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”).
\textsuperscript{258} Register’s Recommendation 2015, supra note 6, at 339.
\textsuperscript{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).
\textsuperscript{260} Id. at 339.
\textsuperscript{261} See MADE Comments, supra note 4, at 32.
\textsuperscript{262} See ESA Comments, supra note 8, at 38–41.
\textsuperscript{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.” Opponents also claim that including Affiliate Archivists in preservation efforts would “facilitate (and invite) a significant increase in infringement.” 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, the Proposed Exemption creates the kind of “controlled setting” necessary to avoid market harm that the Register described during the previous rulemaking.

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.

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. 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.” 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.” In fact, preserved games cannot be made available “outside the physical premises” of an eligible institution. As such, Opponents have failed to develop this argument in sufficient detail for it to be legally cognizable.

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

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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.”)
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.\textsuperscript{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.”\textsuperscript{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,\textsuperscript{276} teaching,\textsuperscript{277} and research in myriad fields.\textsuperscript{278} For this reason, we seek to modestly expands 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.

\textsuperscript{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 the authors.”).


\textsuperscript{277} 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).
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 Publishers

- 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

• 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.gol, 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
• Telarion, 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