

**FAIR USE OF SOFTWARE NECESSARY
TO REPAIR, MAINTAIN, OR
DIAGNOSE A DEVICE OR SYSTEM**

by DAVID R. METZGER*

Fair use analyses of software needed for the diagnosis, maintenance, or repair of software-based devices or systems has often focused on whether the use is transformative use, and not whether the use is fair use because the use essentially is only for obtaining uncopyrightable data, information or ideas. This article raises a more appropriate analysis which does not require the creation of a derivative work or modification of the software which is typically required for a finding of fair use.

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Also, the author represented Transtate Equipment Company, Inc in its petition to the Copyright Office that resulted in the 2021 exemption to the anticircumvention provisions of the Digital Millennium Copyright Act (DMCA) for diagnosis, maintenance, and repair of medical devices and systems that was codified at: 37 C.F.R. §201.40(b)(15)(2021). He also represented Avante Health Solutions/Jordan Health Products, LLC in a 2023 petition for renewal of the exemption which resulted in renewal of the exemption that is codified at 37 C.F.R. §201.40(b)(17)(2024). These exemptions are being challenged by Advanced Medical Technology Association (AdvaMed) and Medical Imaging & Technology Alliance (MITA) before the DC District Court (1:22-cv-0499) where AdvaMed and MITA have sued the Library of Congress and the Librarian of Congress for adopting the exemption.

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INTRODUCTION

More often than not, whether unauthorized use of software is fair use is determined by whether the use is transformative—that the use is different from the original use. However, invariably, the service software does not modify or change the underlying software; the original software is simply executed. This article provides an alternative basis for considering allegedly unauthorized use of software (computer programs and/or data files) necessary to repair, maintain, or diagnose devices or systems as fair use under the 1976 Copyright Act when used for diagnosis, maintenance, or repair purposes (a/k/a “servicing”). Most fair use analyses rely on considerations of the transformative use of the software in the lawful utilization of the device or system or in the restoring or maintaining a device or system to its original or revised specifications.¹ As discussed below, two at least two authors have addressed aspects of invoking and using such necessary software as fair use in the context of independent service organizations (ISOs): Professor Stephen M. McJohn² and Mathew J. Leary.³ Professor McJohn reasoned a transformative use-related basis and a non-affected market basis for concluding that such use was fair use. Mr. Leary focused on the copyrightability of the operational outputs from use of such software, although there is a discussion of cases finding use of the software transformative, and thus fair use.

This article considers the characterization of such use of the software as use to obtain uncopyrightable information about the device or system needed for the diagnosis, maintenance, repair of the device or system. Part I provides a definitional basis to constrain the article to that software of importance and the problem with copyright infringement from merely loading software for use. Part

¹ Discussed in more detail *infra*, but this doctrine generally entails an analysis to see if the use has created a new work or effect that alters the original with new expression, meaning, or message. *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569 (1994). *See also* Pierre N. Leval, Comment, *Toward a Fair Use Standard*, 103 HARV. L. REV. 1105, 1111 (1990) (“I believe the answer to the question of justification turns primarily on whether, and to what extent, the challenged use is transformative. The use must be productive and must employ the quoted matter in a different manner or for a different purpose from the original. ...[If] the secondary use adds value to the original—if the quoted matter is used as raw material, transformed in the creation of new information, new aesthetics, new insights and understandings—this is the very type of activity that the fair use doctrine intends to protect for the enrichment of society. Transformative uses may include criticizing the quoted work, exposing the character of the original author, proving a fact, or summarizing an idea argued in the original to defend or rebut it. They also may include parody, symbolism, aesthetic declarations, and innumerable other uses.”)

² McJohn, S. M., *Fair Use of Copyrighted Software*, 28 RUTGERS L.J. 593 (1997).

³ Leary, M. J., Note: *Welding The Hood Shut: The Copyrightability Of Operational Outputs And The Software AfterMarket In Maintenance And Operations*, 85 B.U.L. 1389 (2005). While Mr. Leary was a law student at the time he wrote the note, in the note he states he had worked in software systems engineering for twenty years. *Id.* at fn. 12.

II provides background to the codification of the fair use exclusion from infringement and also discusses two specialized fair use defenses but explains why the general defense of fair use is preferable. Part III describes the prohibition of Digital Millennium Copyright Act against circumvention controls to access to software and determinations of likely fair in providing exceptions to that prohibition. Part IV provides a way to analyze the fair use of such software with needed to refer to the transformative use. The article concludes with an opinion that unauthorized use of software for diagnosis, maintenance, or repair of devices or systems should be considered fair use even if no derivative works are created and no transformative use analysis is performed.

I. DEFINING SOFTWARE AND MAINTENANCE, REPAIR AND DIAGNOSTIC SOFTWARE

Software necessary to diagnose, maintain, or repair (a/k/a, “servicing”) a device or system means or is defined as any computer program or data file without which the device or system cannot be operated, diagnosed, maintained, or repaired. The software is likely protected by copyright law.⁴ Three key terms are necessary to define: maintenance, repair and diagnosis. The “maintenance” of a device or system is the servicing of the device or system in order to make it work in accordance with its original specifications and any changes to those specifications authorized for that device or system.⁵ The “repair” of a device or system is the restoring of the device or system to the state of working in accordance with its original specifications and any changes to those specifications authorized for that device or system.⁶ “Diagnosis” is the identification of the status of the operating parameters of the device or system.

Typically, such servicing software is preloaded on or embedded in the device or system in persistent storage media, but in some instances, it may be in a stand-alone medium.⁷ Stand-alone optional software, even if helpful, but not necessary for the servicing of the device or system is not this type of software.

⁴ By statute, copyright protection subsists in original works of authorship fixed in any tangible medium of expression from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device. Works of authorship include: (1) literary works; (2) musical works, including any accompanying words; (3) dramatic works, including any accompanying music; (4) pantomimes and choreographic works; (5) pictorial, graphic, and sculptural works; (6) motion pictures and other audiovisual works; (7) sound recordings; and (8) architectural works. However, in no case does copyright protection extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied. 17 U.S.C. Section 102(a).

⁵ 17 U.S.C. § 117(d)(1) and 37 C.F.R. § 201.40(b)(15)(i).

⁶ 17 U.S.C. § 117(d)(2) and 37 C.F.R. § 201.40(b)(15)(ii).

⁷ For example, OBD2 scanners and code readers for diagnosing vehicles by reading and extracting onboard data from the vehicles are sold separately from the vehicles. Many are available for purchase on Amazon.

Under the Copyright Act, a computer program is defined as “a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.”⁸ While a computer program may generate visual or audible expression during execution of the computer program (e.g., in a video game, the written code of the computer program generally is considered a literary work and has been deemed copyrightable since 1980 when the Copyright Act was amended to add the definition of “computer program” to Section 101.⁹ Thus, absent any visual or audible copyrightable expression, copyright in a computer program subsists only in its source code and executable code.

While the data and ideas in a data file are expressly excluded from copyright protection, there might be some original expression in the arrangement or selection of the data.¹⁰ However, copyright law cannot prevent someone from accessing the underlying data and ideas.¹¹ Indeed, it can be copyright misuse and abuse of process to use a contract or license agreement based on one's copyright to protect uncopyrightable facts.¹²

The unauthorized execution of a computer program, which involves loading executable code into processor-execution memory was deemed by the Court of Appeals for the Ninth Circuit in its *MAI* decision to constitute a violation of a copyright owner's exclusive right to reproduction of the computer program in 1993.¹³ This remains true today so that use of a device or system and its embedded software could constitute copyright infringement absent a license or a defense to infringement such as fair use.

The boundary line between whether a computer program or at least a portion of its code is copyrightable or falls within the subject areas expressly excluded from copyright can be difficult to determine.¹⁴ As the United States Supreme Court has noted, the “fact that computer programs are primarily functional makes it difficult to apply traditional copyright concepts in that technological world.”¹⁵ The United States Court of Appeals for the Sixth Circuit characterized it as “vexing.”¹⁶ This blurry boundary line is important to note because, as discussed

⁸ 17 U.S.C. §101.

⁹ *Id.*

¹⁰ *Feist Publications, Inc. v. Rural Telephone Service Co.*, 499 U.S. 340 (1991).

¹¹ See, e.g., *Assessment Techs. of WI, LLC v. WIREdata, Inc.*, 350 F.3d 640, 644-45 (7th Cir. 2003).

¹² *Id.* at 646-47.

¹³ *MAI Sys. Corp. v. Peak Computer, Inc.*, 991 F.2d 511 (9th Cir. 1993).

¹⁴ At least two doctrines are used to analyze this boundary line, the doctrines of merger (where the expression is deemed essential to the statement of the idea) and *scènes à faire* (where there is only one or very few ways of expressing an idea). For a good discussion of these doctrines see, *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 535-536 (6th Cir. 2004). This article does not delve into the application of these doctrines due to its focus on the fair use defense.

¹⁵ *Google LLC v. Oracle Am., Inc.*, 593 U.S. 1, 4 (2021).

¹⁶ *Lexmark Int'l*, 387 F.3d at 535 (“... the task of separating expression from idea in this setting is a vexing one...”).

below, the right to extract ideas and other information from a literary work, especially a computer program, makes it more likely that use of a computer program needed to operate, diagnose, repair, or maintain a device or system is fair use. Thus, an important consideration is under what circumstances can one execute a computer program for servicing a device or system without authorization and without committing infringement? Herein, the applicability of the fair use defense is analyzed.

II. FAIR USE AND ADDITIONAL EXCLUSIONS FROM INFRINGEMENT

A. Fair Use and Computer Programs

Fair use is a long-standing defense to/exclusion from copyright infringement.¹⁷ It was first recognized under common law and later included in the Copyright Act of 1976 at Section 107 as an express limitation on the exclusive rights of a copyright owner.¹⁸ It still is treated as an affirmative defense that must be proved by a defendant.¹⁹ However, a court analyzing the application of the defense must consider a number of factors especially the mandated non-exclusive factors of:²⁰

1. the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
2. the nature of the copyrighted work;
3. the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
4. the effect of the use upon the potential market for or value of the copyrighted work.

Two other limitations on the exclusive rights of a copyright owner of a computer program were added later: the essential step exclusion/defense from infringement of Section 117(a) in 1980²¹ and the Machine Maintenance or Repair

¹⁷ Campbell, *supra* note 1, at 575.

¹⁸ 17 U.S.C. §107. ("Notwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright.") (emphasis added).

¹⁹ Although that seems to have shifted with Section 512(f) of the 1976 Copyright Act.

²⁰ *Id.*

²¹ (a) Making of Additional Copy or Adaptation by Owner of Copy—Notwithstanding the provisions of section 106, it is not an infringement for the owner of a copy of a computer program to make or authorize the making of another copy or adaptation of that computer program provided:

(1) that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner, or (2) that such new copy or adaptation is for archival purposes only and that all archival

exclusion/defense from infringement of Section 117(c) in 1998.²² Both of these exclusions also are asserted as defenses against charges of copyright infringement.

B. The Essential Step Exclusion and the Machine Maintenance or Repair Exclusion

The Essential Step exclusion allows the owner of a copy of a computer program to “make or authorize the making of another copy or adaptation of that computer program provided ... that such a new copy or adaptation is created as an essential step in the utilization of the computer program in conjunction with a machine and that it is used in no other manner”.²³ While this would seem to enable a machine owner to a service provider to load software when repairing the machine, there have been challenges as to whether the machine owner owns a copy of the software or only leases the copy of the software.²⁴

copies are destroyed in the event that continued possession of the computer program should cease to be rightful. Pub. L. 96–517, §10(b), Dec. 12, 1980, 94 Stat. 3028

²² (c) Machine Maintenance or Repair.—Notwithstanding the provisions of section 106, it is not an infringement for the owner or lessee of a machine to make or authorize the making of a copy of a computer program if such copy is made solely by virtue of the activation of a machine that lawfully contains an authorized copy of the computer program, for purposes only of maintenance or repair of that machine, if— (1) such new copy is used in no other manner and is destroyed immediately after the maintenance or repair is completed; and (2) with respect to any computer program or part thereof that is not necessary for that machine to be activated, such program or part thereof is not accessed or used other than to make such new copy by virtue of the activation of the machine. Pub. L. 105–304, title III, §302, Oct. 28, 1998, 112 Stat. 2887

²³ See *supra* note 18.

²⁴ See, e.g., *Krause v. Titleserv, Inc.*, 402 F.3d 119 (2nd Cir. 2005) (holding company's modification of copyrighted computer programs created for it by former consultant, after consultant declined to turn over source code, was “essential step” in their utilization, within meaning of Copyright Act's safe harbor provision; modifications, which fixed bugs, allowed company to add new client information, adapted program so it would function on company's new system, and added new features, were necessary if company was to make use of programs on its machines); *Universal Instruments Corp. v. Micro Sys. Eng'g, Inc.*, 924 F.3d 32 (2nd Cir. 2019) (holding that modifications made by licensee, a medical device company, to server software customized by software developer for licensee's multi-phased test handling system project that allowed existing server software to interact with additional systems in manner intended when source code was developed for licensee was essential step in utilization of computer programs in conjunction with machine). See also Raymond Nimmer, *The Law of Computer Technology* § 1.18[1] p. 1–103 (1992) (“Ownership of a copy should be determined based on the actual character, rather than the label, of the transaction by which the user obtained possession. Merely labeling a transaction as a lease or license does not control. If a transaction involves a single payment giving the buyer an unlimited period in which it has a right to possession, the transaction is a sale. In this situation, the buyer owns the copy regardless of the label the parties use for the contract. Course of dealing and trade usage may be relevant, since they establish the expectations

The machine maintenance or repair exclusion allows a rightful possessor of a copy of a computer program to load and execute the computer program when the program loads upon activation of the machine thereby allowing those repairing computers to make certain temporary, limited copies while working on the computers.²⁵ The machine maintenance or repair exclusion specifically reversed the holding in *MAI Systems*²⁶ at least in the narrow context required by the exclusion. In *MAI* the Court deemed a servicer's turning on or activation of a computer to constitute infringement due to the loading of the computer code into memory. However, this exclusion did not address the question as to when loading and using of servicing software after activation of a machine can be non-infringing.

At their cores, these other two defenses can be considered specialized fair use defenses. Neither involves using software outside of operating and servicing a machine. Neither is a defense against copying and reselling software or any other commercial use. Both recognize the value to society of allowing use by an owner or the owner's repair service of software required to operate, diagnose, maintain, and/or repair machines.

Notwithstanding these two exclusions from infringement specifically pertaining to computer programs, the fair use defense can provide the broader defense to infringement. It is not limited by the requirement for ownership of the copy of the computer program of the essential step defense or the limited activation and destruction requirements of the machine maintenance or repair defense. It only requires a determination of fairness after consideration of at least the non-exclusive factors noted above. Further, the "fair use doctrine preserves public access to the ideas and functional elements embedded in copyrighted computer software programs."²⁷ (emphasis added)

C. Section 1202 of the 1976 Copyright Act

Unauthorized use of computer software for servicing devices and systems is the subject of various exemptions from the anti-circumvention provisions of the Digital Millennium Copyright Act (DMCA).²⁸ The DMCA was enacted in 1998

and intent of the parties. The pertinent issue is whether, as in a lease, the user may be required to return the copy to the vendor after the expiration of a particular period. If not, the transaction conveyed not only possession, but also transferred ownership of the copy.”); Compare, e.g., *Philips Med. Sys. Nederland B.V. et al. v. TEC Holdings, Inc. et al.*, Case No: 3:20-cv-00021-MOC-DCK (W.D.N.C.), Second Amended Complaint, ¶ 33 (alleging that when Philips sells medical equipment, “the agreement establishes that the presence of Proprietary Service Materials will not give the customer any right or title to such property or any license or other rights to access or use such property”).

²⁵ 17 U.S.C. § 1201(a)(3)(A).

²⁶ See *supra* note 11.

²⁷ *Sony Computer Entertainment, Inc. v. Connectix Corp.*, 203 F.3d 596, 603 (9th Cir. 2000) (emphasis added).

²⁸ 17 U.S.C. § 1201, et seq.

and provides copyright owners with a tool for controlling access to copyrighted works, including software. Specifically, if a copyright owner places copyrighted works behind a technological measure to prevent access to the works, one may not circumvent²⁹ the measure without permission of the copyright owner.³⁰ Notably, the circumvention of a technological measure that effectively protects a right of a copyright owner (e.g., the use of software) is not prohibited by the DMCA, while trafficking in a tool to do so is.³¹

The DMCA requires triennial rulemaking by the Librarian of Congress, who, upon the recommendation of the Register of Copyrights, issues rules exempting certain activities, called classes of works, from the anticircumvention provision of the DMCA.³² The Ninth Triennial rulemaking process concluded in October, 2024. One criterion for whether an exemption can be made is whether non-infringing use of a protected work (e.g., embedded software) can be made.³³ As such, during this rulemaking processes, there is often consideration as to whether fair use can be made of the protected works. Given that the Copyright Office has a deep understanding of the law generally, and fair use in particular, the Registrar's analyses are instructive.

In addition to the triennial rulemaking processes, the Copyright Office conducts studies. One study considered the fair use of software. In a 2016 study, Copyright Office states that it had noticed that a growing demand for relief from the technological measure restrictions under §1201 of the DMCA has coincided with a general understanding that *bona fide* repair and maintenance activities are typically non-infringing. The Copyright Office's 2016 study on *Software-Enabled Consumer Products* recognizes that repair activities are often protected from infringement claims by multiple copyright law provisions, including the fair use doctrine and §117.³⁴ As the report explains, "the fundamental purpose of any repair is to preserve or restore the functionality of a software-enabled device so that it may continue to be used. In this respect, repair supports—rather than displaces—the purpose of the embedded programs that control that device."³⁵ Similarly, the Office concluded that "section 117 'should adequately protect most repair and maintenance activities'" for software-enabled devices.³⁶

²⁹ 17 U.S.C. § 1201(a)(3)(A): "to 'circumvent a technological measure' means to descramble a scrambled work, to decrypt an encrypted work, or otherwise to avoid, bypass, remove, deactivate, or impair a technological measure, without the authority of the copyright owner."

³⁰ 17 U.S.C. § 1201(a)(1)(A): "No person shall circumvent a technological measure that effectively controls access to a work protected under this title."

³¹ 17 U.S.C. § 1201(b).

³² 17 U.S.C. § 1201(a)(B)-(D).

³³ 17 U.S.C. § 1201(a)(C).

³⁴ U.S. COPYRIGHT OFF., REP. ON SOFTWARE-ENABLED CONSUMER PRODUCTS 33 (2016), <https://www.copyright.gov/policy/software/software-full-report.pdf>.

³⁵ *Id.* at 40.

³⁶ *Id.* at 35.

In 2018, after conducting its Seventh Triennial Rulemaking Process, the Acting Registrar of the Copyright Office found the first factor favored a finding of fair use for use of software in vehicles for repair as follows:

In analyzing the first fair use factor, the Acting Register notes that the Copyright Office's Software Study observed that, because the fundamental purpose of repair is to restore the functionality of a device so that it may be used, "repair supports—rather than displaces—the purpose of the embedded programs." Applying similar logic, the 2015 rulemaking concluded that the first factor favored an exemption for vehicle repair because the activities were personal, noncommercial, and would "enhance the intended use" of the vehicle programs. Moreover, the Office's Section 1201 Report observed an emerging "general understanding that bona fide repair and maintenance activities are typically noninfringing." Because proponents express the same desire to engage in these bona fide repair activities with respect to other devices, the Acting Register concludes that this factor favors proponents.³⁷

An exemption for appliances, e.g., home appliances, also was recommended, but the recommendation was based on the conclusion that the uses of the software were likely not infringing because they would be subject to the Essential Step exception.³⁸ But, as noted above, the Essential Step exception can be considered a special type of fair use.

In 2021, after conducting its Eighth Triennial Rulemaking Process, the Copyright Office concluded that circumvention of technological measures that control access to "[c]omputer programs that are contained in and control the functioning of a lawfully acquired medical device or system, and related data files, was appropriate when circumvention is a necessary step to allow the diagnosis, maintenance, or repair of such a device or system."³⁹ The Library of Congress adopted that view and granted such an exemption to the circumvention prohibitions of the DMCA.⁴⁰ This was in addition to renewing a similar exemption, with broader application beyond medical devices or systems, for "[c]omputer programs that are contained in and control the functioning of a lawfully acquired device that is primarily designed for use by consumers, when

³⁷ Section 1201 Rulemaking: Seventh Triennial Proceeding Recommendation of the Register of Copyrights (October 2018) p. 203 (citations omitted). Codified at 37 C.F.R. §201.40(b)(9)(2018).

³⁸ *Id.* at 209-211. Appliance and consumer device exemption was codified at 37 C.F.R. §201.40(b)(10)(2018).

³⁹ U.S. Copyright Off., Recommendation on Section 1201 rulemaking: eighth triennial Proceeding to Determine Exemption to the Prohibition on Circumvention 232 (2021) [hereinafter Recommendation on Section 1201 rulemaking]; *see also* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 86 Fed. Reg. 59,627, 59,639-40 (Oct. 28, 2021) (to be codified at 37 C.F.R. pt. 201).

⁴⁰ 37 C.F.R. § 201.40(b)(15) (2021).

circumvention is a necessary step to allow the diagnosis, maintenance, or repair of such a device, and is not accomplished for the purpose of gaining access to other copyrighted works.”⁴¹

In both instances, the Copyright Office and the Library of Congress deemed the uses of the computer programs and related data files likely to be fair use because the uses were likely to be transformative.⁴² Transformative use is addressed in the discussion below. Yet, in neither situation is derivative software generated.

Also, during 2021, the Acting Registrar recommended and the Librarian approved renewal (with some expansions) to the exemptions for land and marine vehicles⁴³ and consumer devices (including appliances).⁴⁴ The Acting Registrar noted a lack of any meaningful opposition to the renewals.⁴⁵ In 2024, after conducting its Ninth Triennial Rulemaking Process, the Copyright Office affirmed the need to maintain the exemption⁴⁶ and the Librarian of Congress again codified the medical device/systems exemption,⁴⁷ the land and marine vehicle exemption,⁴⁸ the consumer devices and appliances exemption,⁴⁹ and added a retail level food preparation devices exemption.⁵⁰

The adoption of these exemptions evidences the increasing view that use of software (computer programs and data files) needed for servicing a software controlled device or system is considered fair use. Accordingly, below an analysis of such use of software as fair use, without a requirement for transformative use is undertaken.

D. Considering the Fair Use Factors

We turn now to discussing how the law supports a finding that unauthorized use of servicing software is fair use even without a finding that the use is transformative. As explained below, necessary use of the software to obtain uncopyrightable data, ideas, and information has been found to be fair use in other

⁴¹ RECOMMENDATION ON SECTION 1201 RULEMAKING, *supra* note 30 at 232-3; *see also* Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 86 Fed. Reg. at 59,640.

⁴² RECOMMENDATION ON SECTION 1201 RULEMAKING, *supra* note 30 at 209, 211; Exemption to Prohibition on Circumvention of Copyright Protection Systems for Access Control Technologies, 86 Fed. Reg. at 59,635.

⁴³ Codified at 37 C.F.R. §201.40(b)(13)(2021)

⁴⁴ 37 C.F.R. §201.40(b)(14)(2021).

⁴⁵ Section 1201 Rulemaking: Eighth Triennial Proceeding Recommendation of the Register of Copyrights (October 2021), p. 27.

⁴⁶ Section 1201 Rulemaking: Ninth Triennial Proceeding Recommendation of the Register of Copyrights (October 2024), pp. 35-38.

⁴⁷ 37 C.F.R. §201.40(b)(17)(2024).

⁴⁸ 37 C.F.R. 37 C.F.R. §201.40(b) (13) & (14)(2024).

⁴⁹ 37 C.F.R. 37 C.F.R. §201.40(b)(15)(2024).

⁵⁰ 37 C.F.R. 37 C.F.R. §201.40(b)(16)(2024).

contexts such as reverse engineering, data compilations, and to provide compatibility between products, and where no modification to the software or derivative work of the software is made.

1. The Purpose and Character of the Use

The courts seem to consider the first factor, the purpose and character of the use as the most important of the factors.⁵¹ The courts have considered what is referred to as the transformative nature of the use as one way of analyzing the use under this factor. However, “transformative use is not absolutely necessary for a finding of fair use.”⁵² Thus, whether use of a work is “transformative” can be a helpful, but not required determination, especially in servicing situations where the software is only used for servicing, and not copied for resale or development of competing servicing software.

Prior to the enactment of the DMCA, the Court of Appeals for the Ninth Circuit upheld a preliminary injunction enjoining an ISO’s use of embedded software to service a computer in its Triad decision on the grounds that it was copyright infringement.⁵³ The Court held that the ISO’s use was not transformative because there was no generation of a new creative work.⁵⁴

In reaction to this decision, Prof. McJohn wrote a deeply reasoned article analyzing the nature of such uses by ISO’s and argued that in circumstances where the computer owner has an authorized copy of the software and hires an ISO to provide maintenance services on the computer fair use is likely to apply. In relevant part, Prof. McJohn opined that a better way to frame the “transformative use” issue is to distinguish between productive use and reproductive use where reproductive use simply substitutes for the copyrighted work while productive use is a broader category which includes transformative works and requires independent input from the copyist.⁵⁵ Prof. McJohn reasoned that:

If the ISO did nothing more than make copies, its use would be only reproductive. A “clipping service” that monitored television news broadcasts and sold copies to the subjects of the broadcasts arguably did exactly what the subjects could have done themselves under Sony, but the very business of the “clipping service” was to make and sell copies, which supplanted the rights of the copyholder. By contrast, an ISO loads software into main memory as a preliminary step toward rendering the

⁵¹ 37 C.F.R. § 201.40(b)(14).

⁵² See *Campbell v. Acuff-Rose Music, Inc.*, 510 U.S. 569, 579 (1994) (citing *Sony Corp. of Am. v. Universal City Studios, Inc.*, 464 U.S. 417, 455 n. 40 (1984) (videotaping of broadcast content for time-shifted viewing deemed fair use)). See also *Google LLC v. Oracle Am., Inc.*, 593 U.S. 1, 57 (2021) (In determining whether a use is transformative, one considers the copying’s more specifically described purposes and character).

⁵³ *Triad Systems Corp. v. Southeastern Express Co.*, 64 F.3d 1330 (9th Cir. 1995), cert. denied, 116 S. Ct. 1015 (1996).

⁵⁴ *Id.*

⁵⁵ McJohn, *supra* note 2, at 624.

services for which the customer pays. Indeed, an ISO that offered only to load software would find no market.⁵⁶

Prof. McJohn recognized that servicing a computer requires more than simply turning on a machine. His main points are that:

1. The work of an ISO, then, is similar to that of an author who produces a transformative work, with respect to the underlying incentive effects. Computer maintenance can require considerable independent input, which thereby ameliorates the danger of free-riding.
2. The use by an ISO also fosters the most important feature of a transformative use—creative innovation. Servicing computers may not produce works of authorship, but it is nevertheless an intellectually challenging field of work that benefits from innovation.
3. The service industry has been refined with developments such as remote diagnostic tools, which permit many problems to be fixed without sending out a technician, and integrated support centers, which provide customers a single place to turn for hardware, software, and network problems.
4. The service industry has gone beyond simple maintenance contracts to site planning, network management, systems integration and other more sophisticated services.

Where the customer already has the software and a license to use it, the actions of an ISO are likely to be a productive rather than a reproductive use.⁵⁷

While all of this reasoning holds true, it still requires characterizing the use of the software as “transformative use.”

As noted above, Mathew Leary, also relying on the *Triad* decision as the leading decision at the time of his note, explained Prof. McJohn’s reasoning, but then focused his concern on whether the operational outputs from the use of the software are copyrightable. He did not reach a conclusion as to that point, but he did discuss, what is noted herein, that the software is used to obtain the operational outputs needed for diagnosis, maintenance, or repair of computer systems.

As mentioned above, the Copyright Office has opined specifically in the area of use of computer programs embedded in devices or systems when conducting studies and rendering recommendations for exemptions to the anticircumvention provision of the DMCA. In each instance, the Copyright Office has opined that the use of the software supports rather than displaces the purpose of the software and that the repair or maintenance is a transformative use of the software or covered by the essential step exemption. As recently as 2021, the Copyright Office

⁵⁶ *Id.* at 624-625 (citations omitted).

⁵⁷ *Id.* at 626-628.

concluded that the use of the software embedded in medical devices or systems by independent service organizations (ISOs) is transformative.

This conclusion and its adoption by the Library of Congress is being challenged by the Medical Imaging & Technology Alliance (MITA) and the Advanced Medical Technology Association (AdvaMed), both associations for manufacturers of medical devices or systems.^{58, 59, 60} While the District Court for the District of Columbia dismissed the action,⁶¹ it is back before the court after the Court of Appeals for the District of Columbia ruled that the Library of Congress' decision is subject to review under the Administrative Procedure Act, and remanded the action for further consideration.⁶² AdvaMed and MITA filed a Motion for Summary Judgment in which they challenge whether the use of servicing software can be considered transformative.⁶³ Before the District Court, *AdvaMed and MITA* argued that:

...to determine whether the “commercial nature” of a use is fatal to a fair-use finding, the Library was supposed to weigh it “against the degree to which the use has a further purpose or different character.” *Andy Warhol Foundation for Visual Arts v. Goldsmith*, No. 21-869, 2023 WL 3511534 at *10 (US May 18, 2023) (citing *Campbell v. Acuff-Rose Music, Inc.*, 410 569, 579 (1994). “[T]he more transformative the new work, the less will be the significance of the other factors, like commercialism, that may weigh against a finding of fair use.” *Id.* (quoting same).⁶⁴

AdvaMed and MITA further argued that because ISOs do not seek to modify any software (i.e., create a derivative work), there can be no transformative use, and thus no fair use.⁶⁵ It appears that *Andy Warhol* brought into question whether fair use could be used for service software, as maybe it served the same purpose as the original software? It seems the argument is that the service software is non-transformative?

⁵⁸ *Med. Imaging & Tech. All. v. Libr. of Cong.*, No. 23-5067, 2024 U.S. App. LEXIS 13868, at *2 (D.C. Cir. June 7, 2024).

⁵⁹ On October 19, 2023, the Copyright Office issued a notice of proposed rulemaking in which it stated it would recommend renewing the exemption for another three years for the same reasons. Exemptions to Permit Circumvention of Access Controls on Copyrighted Works, 88 Fed. Reg. 72,013, 72,021-2 (Oct. 13, 2023) (to be codified at 37 C.F.R. pt. 201).

⁶⁰ MITA has since merged into AdvaMed.

⁶¹ *Med. Imaging & Tech. All. v. Library of Congress*, 2023 Dist. Lexis 39168 (D. D.C. March 7, 2023).

⁶² *Medical Imaging & Technology Alliance, et al v. Library of Congress, et al*, U.S. Court of Appeals for the District of Columbia, No. 23-5067, 103 F.4th 830, 833 (D.C. Cir. 2024).

⁶³ Memorandum of Points and Authorities in Support of Plaintiffs' Motion for Summary Judgment. (ECF 33-1).

⁶⁴ Appellants' Opening Brief. at 45. Brief at 45.

⁶⁵ *Id.* at 45-48.

The renewal of the DMCA exemption for diagnosis, maintenance, or repair of medical devices and systems., was opposed by, among others, Philips North America. In Philips' August 14, 2023 comments filed with the Copyright Office,⁶⁶ Philips stated:⁶⁷

[The] Supreme Court recently issued its ruling in *Andy Warhol Found. for the Visual Arts, Inc. v. Goldsmith*, 143 S. Ct. 1258 (2023), where it further clarified “fair use” jurisprudence under copyright law. There, the Court confirmed that commercial use of a copyrighted work for the same or highly similar purpose is non-transformative. Here, commercial service organizations seek to use copyrighted service software authored by Original Equipment Manufacturers (“OEMs”) for the exact same purpose as it was created by OEMs – to service medical imaging systems. The Warhol decision clarifies that such use infringes; it is non-transformative and not fair use under the Copyright Act.⁶⁸

In their Motion for Summary Judgment, AdvaMed and MITA continue to argue that the Copyright Office erred in determining that the use of the servicing software by ISOs is transformative for the reasons stated above.⁶⁹ However these comments omit to mention or consider that the essential step and machine maintenance or repair exclusions from copyright infringement, which inherently are fair use exclusions, do not require transformative use. These two exclusions are in addition to the more general fair use exclusion, which Philips acknowledges.⁷⁰ Philips, AdvaMed, and MITA also omit to consider that in the Warhol situation, the subject matter at issue was creation of derivative works with copyrightable expression, namely images. Thus, unlike in the use of software for servicing, Warhol did not concern mere execution of functional or utilitarian software which exhibit no creative expression, as might be the case with a video game or audio work.

Since servicers typically are only executing computer code without direct access to the computer code itself, they are not creating or accessing any

⁶⁶ On October 19, 2023, the Copyright Office issued a Notice of Proposed Rulemaking in which it stated it would propose renewing the exemption. See *Exemptions to Permit Circumvention of Access Controls on Copyrighted Works*, 88 Fed. Reg. at 72,013. This Ninth Triennial process is to conclude during October 2024.

⁶⁷ Philips North America, LLC. Comments by Philips North America, LLC In Response To Petitions To Renew DMCA Exemption Relating To Medical Device, COPYRIGHT OFF. 1 (Aug. 14, 2023), <https://www.copyright.gov/1201/2024/petitions/renewal/Opp-Medical-Devices-Philips-North-America-LLC.pdf>.

⁶⁸ *Id.*

⁶⁹ This article does not address whether the use of servicing software can be transformative use because it is focused on looking at an alternative basis for supporting a conclusion that the use is fair use, and thus, the arguments made by AdvaMed and MITA in support of their Motion for Summary Judgment are not relevant.

⁷⁰ *Id.* at 7 (emphasis added).

copyrightable expression.⁷¹ They interact with user interfaces, and a user interface is considered a “method of operation,” which is deemed not copyrightable under 17 U.S.C. §102(b)⁷²

Since copyrightable expression is not involved, the issue of transformative use in the sense of creation of derivative works, such as in the *Warhol* situation, should be less relevant if not irrelevant and the specific character of the use of the software should be considered. In that regard, as pointed out by the Registrar of Copyrights, servicing software is used to maintain or repair a device or system and thus is used to support the use of the device or system, not to displace or impinge on the market for the servicing software, for which, typically, there is no separate market other than sale of OEM-sourced software.⁷³

Yet further, fundamentally, the servicing software is used for the basic function of obtaining and using information about the operation of a device, system, or component thereof or setting information for the device, system, or component, and information (i.e., ideas or data) is excluded from copyright protection. Any incidental use of the software to obtain and use such information should be considered fair use.⁷⁴ Indeed, “intermediate copying” to reverse engineer software to discover its ideas and functions has been permitted.⁷⁵ Thus this first factor should be found to weigh in favor of a finding of fair use.

2. The Nature of the Copyrighted Work

The nature of the computer programs and data files involved servicing is that they are entirely functional or essentially entirely functional works used to control operation of the devices or systems and the diagnosis, repair, and maintenance of the devices or systems.⁷⁶ They are used to support operational, mechanical, and

⁷¹ *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 387 F.3d 522, 548-49 (6th Cir. 2004) (“‘using’ or executing the Printer Engine Program does not in turn create any protected expression”).

⁷² “In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.” *See also* *Lotus Dev. Corp. v. Borland Int'l, Inc.*, 49 F.3d 807 (1st Cir. 1995), *aff'd* 516 U.S. 233.

⁷³ *See* 2021 Recommendation at 211-12; 2018 Recommendation at 204-05; 2015 Recommendation at 236, Software Study at 41, and MITA Class 12 Opp’n at 10 (2021)(“Although there is no separate market for the medical imaging device software beyond the medical imaging devices containing the software...”).

⁷⁴ *Assessment Techs. of WI, LLC v. WIREdata, Inc.*, 350 F.3d 640, 647-8 (7th Cir. 2003); *Sony Comput. Ent., Inc. v. Connectix Corp.*, 203 F.3d 596, 603 (9th Cir. 2000).

⁷⁵ *Sega Enters. v. Accolade, Inc.*, 977 F.2d 1510, 1520-28 (9th Cir. 1992) (Sega reverse engineered gaming console operating system to provide interoperable games). *See also* *Sony Comput. Ent.*, 203 F.3d at 602-08; *Bateman v. Mnemonics, Inc.*, 79 F.3d 1532, 1539-40 n. 18 (11th Cir. 1996); *and* *Atari Games Corp. v. Nintendo of Am., Inc.*, 975 F.2d 832, 842-44 (Fed. Cir. 1992).

⁷⁶ *Google v. Oracle*, *supra* note 15.

electronic processes of the devices or systems.⁷⁷ If they are expressive at all, the expressiveness is *de minimis*. Thus, this second factor should be viewed as supporting a finding of fair use.

3. The Amount and Substantiality of the Portion Used in Relation to the Copyrighted Work as a Whole

It is necessary to run the a complete computer program and access potentially of the data in the data files (e.g., log files and parameter setting files), during servicing activities in order to understand system performance, and in several instances, update the data files. The Supreme Court has noted that:

The “substantiality” factor will generally weigh in favor of fair use where, as here, the amount of copying was tethered to a valid, and transformative, purpose. *Supra*, at 25–26; see *Campbell*, 510 U. S., at 586–587 (explaining that the factor three “enquiry will harken back to the first of the statutory factors, for . . . the extent of permissible copying varies with the purpose and character of the use”).⁷⁸

Thus, given that the use to which the software is being put is for diagnosis, maintenance or repair which use is in support of the continued operation and use of a device or system, even if the amount of the software involved is substantial, this third factor should not weigh against a finding of fair use.

4. The Effect of the Use Upon the Potential Market for or Value of the Copyrighted Work

In *Lexmark*,⁷⁹ the Court discusses the need for an independent market of the software which is the subject of the claim for infringement. In that discussion, the Court reversed the District Court based on an incorrect assessment of the market for the affected devices instead of a potential market for the software itself. In *Lexmark* the court explained:

the relevant question likewise is whether the infringement impacted the market for the copyrighted work itself.... In *Kelly*, [*Kelly v. Arriba Soft Corp.*, 336 F.3d 811, 818-19 (9th Cir. 2003)] for example, the Ninth Circuit concluded that the fourth factor favored a finding of fair use because the Internet search engine's utilization of the plaintiff's copyrighted images [in thumbnail pictures] did not harm the value or marketability of the original photos. Here, the district court focused on the wrong market: it focused not on the value or marketability of the Toner Loading Program, but on Lexmark's market for its toner cartridges. Lexmark's market for its toner cartridges and the profitability

⁷⁷ *Id.* at 41.

⁷⁸ *Id.* at 34.

⁷⁹ *Supra* note 14.

of its Prebate program may well be diminished by the SMARTEK chip, but that is not the sort of market or value that copyright law protects.... Lexmark has not introduced any evidence showing that an independent market exists for a program as elementary as its Toner Loading Program, and we doubt at any rate that the SMARTEK chip could have displaced any value in this market.⁸⁰

Generally, the effect of the use of servicing software upon the potential market for or value of the software itself is minimal if not none. The computer programs and data files are necessary for the servicing of the systems and are sold by an OEM together with the systems in which they are employed.⁸¹ Thus, the OEMs must include the servicing software or make the software available to enable operation and control of new systems. There typically is no independent market for the servicing of computer programs and data files because the programs have no utility outside of being used with the particular devices or systems for which they were written.⁸² These programs and data files are not distributed as independent works. Thus, this fourth factor weighs in favor of a finding of fair use.

From the foregoing, all of the four fair use factors weigh in favor of a conclusion that unauthorized use of OEM software necessary for the operation or servicing of a device, is not copyright infringement but rather fair use of the software regardless of any lack of any “transformative” use in the sense of creating a derivative work, because the purpose of the use is to extract and set uncopyrightable operating data and information in support of diagnosis, maintenance, or repair, and not for other commercial purposes.

CONCLUSION

The issue of finding fair use in the use of software for the diagnosis, maintenance, or repair of software enabled devices or systems without the creation of derivative works or modifications to the software, may be unique to the nature of the use of software. Such software is invariably executed without direct access to the computer code, and thus without access to the copyrightable expression of the computer code, to check the operating state of a device or system and to enable adjustments and the like for maintenance or repair. This check is done by obtaining the uncopyrightable data, information, or ideas resulting from the execution of the computer code and reviewing outputs of the computer code and observing the behavior of the device or system.

There is no creation of a derivative work or a modification of the code because the code must remain the same so that it can be invoked in the same way during a later diagnosis, maintenance, or repair event and for the device or system

⁸⁰ *Lexmark, supra* 71 at 544-545.

⁸¹ *Id.*

⁸² *Id.*

to operate as designed. There is no copying for the purposes of reselling the software and impacting a market for the software because the software is only suitable for the devices in which it is sold.

As such, the concept of transformative use, in the sense of requiring creation of a derivative work or modification of software (other than adjustable data), does not make sense and is ill-suited for a fair use analysis of use of software that is necessary for the diagnosis, maintenance, or repair of software enable devices or systems. Rather, the fair use analysis should focus on enabling the extraction of the uncopyrightable data, information, and ideas without other uses of the software. Thus, requiring creation of a derivative work or modification of software in a fair use analysis in these situations should be disregarded in fair use analysis in these situations.