

Before the
COPYRIGHT ROYALTY BOARD
in the Library of Congress
Washington, D.C. 20559

)	
In re)	
NOTICE AND RECORDKEEPING FOR)	Docket No. RM 2008-7
USE OF SOUND RECORDINGS UNDER)	
STATUTORY LICENSE)	
)	

**COMMENTS OF HARVARD RADIO
BROADCASTING COMPANY**

I. Introductory Statement

Harvard Radio Broadcasting Co., Inc., an eleemosynary Massachusetts corporation, which is licensee of student-operated FM broadcast station WHRB (FM), Cambridge, Massachusetts (“WHRB”), offers these comments in response to the Board’s NPRM, published in 73 Fed. Reg., No. 250, 79727 (December 30, 2008) soliciting comments regarding the requirements for recordkeeping and reporting of use of digital sound recordings under statutory license.

WHRB fully participated in the webcasting royalty hearings before the Board, “Webcasting II” (Dkt. 2005-1 CRB DTRA), now before the U.S. Court of Appeals for the D.C. Circuit, Dkt. 07-1123. In the course of the hearing WHRB presented testimony and documentary evidence as to the distinctive characteristics of its non-profit webcasting operations and simulcast programming. Its operations, particularly its all-volunteer-student staffing, are very distinctive in nature and bear little resemblance to larger commercial and larger non-commercial webcasters’ operations and programming. For example, the testimony and exhibits described how station WHRB (FM) programmed an Orgy® of Wolfgang Amadeus Mozart’s music during the exam

period in the Spring of 2006. The station presented 250 hours of virtually every composition by this composer, drawing on many sources, including the station's record library and several institutional and individual record libraries. The music was accompanied by commentary from members of the student staff and Prof. Robert D. Levin, whose four-page essay written for WHRB describing the anomalies in the Köchel numbering system was posted on the station's website.

Most importantly, like other small, academically affiliated stations, WHRB continues to assemble its day-to-day programming with human DJs who play sound recordings from physical media such as vinyl records, cassettes, and CDs in real-time. While the cost of switching to fully-automated programming from a harddrive would be very high, the main reason WHRB and other non-commercial stations continue to use human DJs is due to programming philosophy and aesthetic choice. These stations have a rich heritage of featuring music that cannot be easily found or heard by listeners via other outlets.¹ The art of assembling this music in real-time is passed down by station members and cannot be replicated by automated means. The fact that stations like WHRB manually program physical media and plan to continue doing so for the foreseeable future imposes certain difficulties in reporting and recordkeeping as detailed in the body of these comments.

Previously, the CRB also received in RM- 2005-2, *et seq.*, from WHRB and other college and high school webcasters, comments describing the peculiar burdens on stations with volunteer student staffs of applying recordkeeping and reporting requirements more suitable for larger operations with paid staffs.

¹ Sisario, Ben, *College Radio Maintains Its Mojo*. The New York Times, December 7, 2008, sec. Arts / Television. <http://www.nytimes.com/2008/12/07/arts/television/07sis.html>.

WHRB's current comments take the following form:

1. Proposal on process for completing promulgation of final regulations
2. Arguments against census reporting for non-commercial webcasters
3. Request to maintain ATH exemption for non-commercial webcasters
4. Answers to CRB's requests for further information concerning commercially available software and delivery of reports via web protocols
5. Proposal to publish canonical database of known sound recordings to streamline royalty distribution under statutory licenses

II. Process for Finalizing Regulations

As referenced in the joint motion² filed by WHRB and CBI for extension of the comment period, this rulemaking procedure has a history dating to 2002 which includes: two rounds of written comments and replies,³ a public roundtable discussion,⁴ an in-person status conference⁵ and extended periods of interim regulations. The fact that seven years have elapsed without the promulgation of final regulations illustrates several points:

- Webcasters do not easily fit into a one-sized-fits-all categorization. If all classes had the same needs, it would be easier to find a single standard for compiling and delivering reports of use. Congress anticipated this situation in Section 114(f)(2)(A) and (B) of the Act, which requires the Board to differentiate among users.
- Setting technical standards via regulatory filings is a cumbersome process.⁶ All parties have an incentive to frame their case in the most extreme way

² Joint Motion of CBI and WHRB, filed in RM 2008-7, January 12, 2009.

³ RMs 2002-1 and 2005-2.

⁴ May 10, 2002, Roundtable at Library of Congress.

⁵ October 8, 2002.

⁶ Shapiro, Carl, "Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting" (March 2001). Available at SSRN: <http://ssrn.com/abstract=273550>

possible. Dialog between the parties is restricted (or non-existent) and the government is forced to make all-or-nothing decisions in the absence of true compromise proposals.

- Technology moves faster than regulatory bodies can act. While the CRB is to be commended for attempting to parse the highly technical details inherent in large-scale data processing, all parties must agree that the CRB was not constructed to handle technical standards setting. The CRB lacks a special expert with a background in the automation of large-scale data processing and matching. Due to the nature of rulemaking via written comments, it is impossible to find impartial technical advisors amongst the body of commentators. Any attempt to set final regulations will quickly find itself outpaced by technological advancement and incapable of reacting in a flexible manner.
- Iterative rulemaking which responds to changes in the webcasting industry on a regular basis better matches real-world operations than an attempt to create static, final regulations.

While the CRB recognizes in their Notice that webcasters are free “to negotiate other formats and technical standards,” they indicate they “have no intention of codifying these negotiated variances.”⁷ This stance means that any final regulations promulgated in this Docket will likely remain in effect for multiple years, regardless of technical innovation. Given the points learned from the history of this rulemaking procedure and the long-term impact final regulations will have on the webcasting industry, WHRB proposes that the CRB adopt a process substantially similar to the following before making their ruling:

- Publish all written comments in the Docket to the CRB website for public access.
- Hold an in-person status conference in Washington, DC in Spring 2009. Duration can be up to 4 hours and all interested parties should be invited. Participants can include legal representatives, but should also include technical advisors. Goal of the conference is to allow copyright owners and services to reach compromise positions via real-time interaction.

⁷ 73 Fed. Reg. 79,727, 79,728 (December 30, 2008)

- Open a First Reply Comment window for late Spring. Without First Replies, the CRB will be devoid of any compromise proposals when making their final determination and be forced to choose from all-or-nothing alternatives. Reply Comments should also be published on CRB website.

While the above process might appear cumbersome, WHRB believes it will actually encourage collaboration and compromise. If possible, the rulemaking iteration should be completed in six months or less to keep momentum and reduce the risk of the parties retreating back to their default positions.

Going forward, the CRB should clearly delineate the circumstances under which it will re-open rulemaking for Notice and Recordkeeping for Use of Sound Recordings. The CRB has stated it will codify new rules if they “come into such standardized use as to supersede the existing regulations.”⁸ What would happen if the larger commercial webcasters adopted new standards while the small, non-commercial webcasters continued to follow the regulations? Wouldn't new rules for the larger webcasters be published?

WHRB recommends that the CRB create a standard and recurring process to evaluate whether notice and recordkeeping are working properly among the entire universe of webcasters. Given the speed at which technology can change and the diverse nature of the parties, it is imperative that notice and recordkeeping be followed regularly by the CRB. WHRB suggests a status-conference at least once every 12 months.

Finally, WHRB reiterates⁹ its call for the CRB to form a standing committee with expertise in the technical aspects of digital media, including data standards, formatting, large-scale automated processing, matching and delivery. The committee could provide a valuable impartial advisor to the CRB in a variety of rulemaking and fact-finding procedures. This

⁸ 73 Fed. Reg. at 79728.

⁹ WHRB Comments at 2 in RM 2005-2, filed August 26, 2005.

committee, to be organized under the principles adapted from the Federal Advisory Committee Act of 1972, as amended, 5 U.S.C. App. 2, could prove a valuable advisor to the Board on rulemaking issues that require technical expertise beyond the Board's current capacity.

III. Arguments Against Imposing Census Reporting on Academically Affiliated Non-Commercial Webcasters

The CRB has proposed a substantial, substantive change in the final regulations by requiring census reporting by the services.¹⁰ WHRB believes this is overly burdensome on academically affiliated non-commercial webcasters¹¹ who continue to rely on human DJs who broadcast in real-time from physical media instead of utilizing fully computerized, harddrive-based solutions.

WHRB's argument against census reporting for academically affiliated, non-commercial webcasters takes the following form:

1. Legal argument on why a "reasonableness test" is the proper standard for evaluating burdens associated with census reporting
2. Establishing a test for "reasonableness"
3. Calculations of the burdens involved in compiling census reports for non-commercial webcasters
4. Calculation of the losses faced by individual copyright owners under a loose, sample-based reporting regime
5. Conclusion that census reporting fails the reasonableness test for the universe of non-commercial webcasters
6. Clarification that non-commercial webcasters shun harddrive-based programming due to artistic and programming decisions should not and could not be required to

¹⁰ 73 Fed. Reg. 79728 (December 30, 2008).

¹¹ The term "non-commercial webcaster" is used in these comments as defined in Section 114(f)(5)(E)(i). They are also "small entities" under the Regulatory Flexibility Act of 1980, as amended, 5 U.S.C. § 601(6).

change this programming philosophy because of technological innovation or cost reductions

A. Recordkeeping must pass a reasonableness test

The statute is vague on the subject of recordkeeping. 17 U.S.C. §§ 114(f)(4)(A) and 112(e)(4) ask only that the Board “establish requirements by which copyright owners may receive reasonable notice of the use of their sound recordings.” If the word ‘reasonable’ were not included in the statute, a plain-reading would indicate that services which avail themselves of the statutory license under 112 and 114 would need to report *all* performances of sound recordings. Given the fact that ‘reasonable’ is included, we can conclude that Congress did not intend that *all* services to report *all* performances to copyright owners.

B. A test for reasonableness

Having established that services do not necessarily need to report all performances of sound recordings, how are we to determine whether a recordkeeping regime is ‘reasonable’? Determining ‘reasonableness’ is a classic example of a “balancing test” which, according to the great Second Circuit Judge, Learned Hand, requires a calculus comparing the burdens of an action with the possible outcomes.¹²

In the case of reporting use of sound recordings, we have two costs to include in our calculus:

- The cost of the burdens faced by a non-commercial webcaster in complying with census reporting. We define this cost for an individual non-commercial webcaster as W_c .
- The injury (or loss) imposed on a theoretical copyright owner who might not receive royalties from a non-commercial webcaster if census reporting is not adopted. We define this loss for an individual copyright owner as CO_1 .

¹² United States v. Carroll Towing Co., 159 F.2d 169 (2d. Cir. 1947).

If we apply Learned Hand's calculus directly, we would have the following simple rule for measuring reasonableness:

- If ($W_c < CO_1$), then the reasonableness test passes and the proposed census recordkeeping should be adopted for non-commercial webcasters.
- If ($W_c > CO_1$), then the reasonableness test fails and the proposed census recordkeeping should not be adopted for non-commercial webcasters.

Other variables might affect the relationship between W_c and CO_1 . We explore several of these parameters to determine the proper calculus to apply in our test.

The first objection from copyright owners might be that this test only encompasses a single station, whereas a copyright owner would actually face losses from all stations that do not adopt census reporting. Let us define 'T' as the Total # of Non-Commercial Webcasters in the US. Now, the copyright owners would propose our new test should actually be:

If ($W_c < (T \times CO_1)$), then the reasonableness test passes.

However, webcasters counter that the goal of the CRB should be to optimize the efficiency of the entire non-commercial webcasting industry. Therefore, if the loss for the copyright owners is calculated as a sum across all stations, we should similarly be concerned with the totality of burdens faced by the entire universe of non-commercial webcasters. This gives us:

If ($(T \times W_c) < (T \times CO_1)$), then the reasonableness test passes.

A simple algebraic simplification puts us back to the original test:

If ($W_c < CO_1$), then the reasonableness test passes.

In previous filings, the collective SoundExchange has attempted to argue that it might actually be reasonable for a webcaster to face higher burdens than a copyright owner when it

comes to recordkeeping.¹³ WHRB does not understand this argument. Regardless of determinations made on recordkeeping, WHRB is still paying a statutorily set fee for the privilege of utilizing the license. With this fee out of the way, why should recordkeeping not be treated as a one-to-one comparison of the burdens faced by the webcaster and the copyright owner?

One specious argument put forth by SoundExchange for increased burdens on non-commercial webcasters is the fact that webcasters such as WHRB face other costs associated with running their stations. This is, of course, true. In order to broadcast our FM transmission we face costs such as electricity, rental fees for our signal tower and associated equipment, insurance, copyright royalty fees on underlying song compositions, etc. However, the fact that WHRB faces other costs in order to operate has *no* bearing on the reasonableness test. The statute plainly indicates that reasonableness is measured as a comparison between the costs of the webcaster and the loss of the copyright owner.

As an example, imagine a business which has \$1M in revenue and needs to purchase 100 pens. While the business could certainly afford to purchase 100 Montblanc pens at a cost of \$100 each for a total expenditure of \$10,000, this is plainly unreasonable given the fact that office pens are also available at \$0.20 each from Staples. Just because the business has a budget for things other than pens does not make it reasonable to spend a lot of money on pens.

Either way, the answer to this question is a determination of fact. If the copyright owners wish to suggest that the statute allows webcasters to face increased burdens, they must provide sound arguments. For purposes of our test, we will define a multiplier parameter 'M', which leaves us with:

¹³ SoundExchange Comments in RM 2002-1 H, filed May 27, 2005.

If ($W_c < (M \times CO_1)$), then the reasonableness test passes.

WHRB argues that under Learned Hand's balancing test for reasonableness the default value of M is one. When making a determination on the reasonableness of census reporting for non-commercial webcasters, the CRB must provide proper reasoning and facts for setting the value of M at anything above 1.

C. The costs associated with census reporting for a non-commercial webcaster

WHRB presents a calculation of the costs associated with completing census reporting for a full 365 days (W_c). WHRB is only one station out of the class of all non-commercial webcasters, or at least the academically affiliated subset thereof. We expect that many other stations will also provide detailed analysis of W_c for their non-commercial stations. The job of the CRB will be to compile this data to find an average value of W_c for the full class of non-commercial webcasters. This figure can then be inserted into the formula presented above to determine if the reasonableness test has been met. If copyright owners wish to argue that WHRB or other non-commercial webcasters have wrongly calculated W_c they must provide direct rebuttal evidence. In the absence of such evidence, the CRB must conclude that these non-commercial webcasters have properly calculated their costs.

Differences in programming methods between commercial and non-commercial webcasters

The main difference in W_c for non-commercial webcasters and large commercial webcasters stems from the method used to program. Commercial webcasters use automated means to assemble groups of sound recordings into playlists. All sound recordings (along with associated metadata such as artist name, album name, etc.) are stored in digital format on a harddrive. In order to transmit, the commercial webcaster pre-selects the appropriate digital files and places them in desired order. The computer program then iterates through the playlist

automatically streaming the broadcast without further human intervention. Digital logs of the songs played can be directly outputted to an appropriate computer file.

In contrast, non-commercial webcasters such as WHRB do not store sound recordings on a harddrive. Instead, sound recordings are stored in physical libraries on media such as vinyl LPs, vinyl 7"s, vinyl 10"s, CDs and cassettes. Similarly, the metadata for these sound recordings are not stored digitally, but instead reside as printed text on the physical items themselves, if at all. In order to transmit, the non-commercial webcaster uses a human DJ. The DJ selects by-hand a set of physical albums. Then, in real-time, the DJ plays a sounds recordings from one of the albums. As one sound recording is being transmitted, the DJ prepares the next sound recording for transmission by cueing it up on a playback device (i.e. turntable, CD player, etc.) and setting appropriate volume levels. When one sound recording ends, the DJ manually begins the playback of the next sound recording. Sometimes, the DJ plays two (or more) sound recordings simultaneously.¹⁴ In order for the non-commercial DJ to log the use of the sound recordings, she must transcribe the metadata from the physical object into a computer via manual data entry. WHRB estimates it takes approximately eighty seconds per sound recording for a human DJ to enter the individual pieces of information required by the proposed final regulations. WHRB does not currently log (in either digital or analog format) the sound recordings it plays outside certain pre-programmed blocks of classical music formatting.

¹⁴ In the 1970s this was considered a technical error. Today it is considered art. See Walker, Rob, *Mash-Up Model*. The New York Times, July 20, 2008, sec. Magazine. <http://www.nytimes.com/2008/07/20/magazine/20wwln-consumed-t.html>.

Calculating W_c for WHRB

For purposes of calculation, WHRB will make the following two assumptions. We note that adding these costs back in would increase W_c . Therefore, our estimate on station costs is conservative :

- A magic software package would exist called MagicReporter. MagicReporter takes raw data inputted by a DJ and automatically sends the data to SoundExchange as properly formatted reports of use. While it is unlikely this software exists, WHRB expects that the CRB will receive information from multiple parties on the status of software solutions for recordkeeping. Our intention in making this assumption is to prove that even removing the cost of acquiring, running and maintaining MagicReporter does not result in census reporting successfully passing the reasonableness test.
- All of WHRB approximately 80 on-air DJs would have been trained in the use of MagicReporter.

This leaves us with two costs to calculate. Since we are attempting to determine the difference in the costs associated with sampled-based reporting vs. census reporting, we must deduct the costs already faced by complying with the sample-based interim requirements.

1. The cost of acquiring hardware to run MagicReporter for 24 hours each day for 365 days minus the cost of the hardware required to run MagicReporter for 24 hours each day for the 56 days in the sample period.
2. The human labor cost in logging 24 hours of programming for 365 days minus the human labor cost in logging 24 hours of programming for the 56 days in the sample period.

Hardware-related costs

Naively, one might believe the costs for the hardware to run MagicReporter for 56 days out of the year would be identical to the costs associated with running MagicReporter for 365 days. However, WHRB has determined that for purposes of providing reports of use for only 56 days it is *not* necessary to obtain a dedicated logging computer. Instead, a business-level computer located outside the broadcasting studio can be used by DJs after their on-air shifts to

compile the reports of use. This machine is usually devoted to business tasks like word processing and accounting. However, during the sample periods, it is possible for the computer to be shared and used for offline data entry after a DJ's shift is over.

However, offline compiling of reports of use is not feasible if reporting were required for a full 365 days. In that case, a dedicated machine located in the broadcast studio would be necessary. WHRB recommends a machine similar to the Dell OptiPlex 755 at a cost of \$500.¹⁵ The computer needs to be accessible to DJs while in the broadcast studio for ease of use. However, it is not possible to place a CPU in the broadcast studio without degrading the sound quality of live broadcasts over microphones. WHRB recommends solving this problem by using a Keyboard, Video, Monitor (KVM) extender. Typical costs for KVMs that can transmit 30 feet are \$100-\$750. In WHRB's case, the cost would be \$659 because our studio is surrounded by reinforced concrete and would require 100 feet of transmission.¹⁶ This gives us a cost for hardware to comply with census reporting of \$1159.

Human Labor Costs for Data Entry

WHRB and most small, non-commercial stations use student volunteer labor to operate the station. The easiest way to calculate the real value of this labor is to assume the students are working for minimum wage which in Massachusetts is currently \$8/hour. As one might expect, data entry is not usually a fun task. In our analysis we do not attempt to quantify the externalities associated with loss of morale across the volunteer base due to data entry tasks. We believe

¹⁵ Accessed at http://www.dell.com/content/products/productdetails.aspx/optix_755?c=us&cs=04&l=en&s=bsd

¹⁶ The Rariton KX-II-101 which allows KVM over CAT5 ethernet cable is a good option. Accessed at <http://www.raritan.com/products/kvm-over-ip/KX-II-101/>

morale loss due to repetitive data-entry tasks could contribute to member loss and expect this could be especially true at non-commercial stations smaller than WHRB.

The following pieces of information are used to calculate the increased human labor costs of census reporting as compared to sample-based reporting.

- It takes a human DJ 80 seconds to transcribe the required metadata on a single sound recording
- WHRB transmits nine sound recordings each hour, on average
- In the current sample-based regime, WHRB needs to log 1,344 hours of broadcasting. This equates to 12,096 sound recordings.
- In a census-based regime, WHRB would need to log 8,760 hours of broadcasting. This equates to 78,840 sound recordings.

Based on these numbers, we make the following calculations:

- In sample-based reporting, WHRB employs 268.8 hours of human labor for data entry. At minimum wage, this is the equivalent of \$2,150.40 in cost.
- In census-based reporting, WHRB would employ 1,752 hours of human labor for data entry. At minimum wage, this is the equivalent of \$14,016 in cost.

Therefore, we conclude:

- It will cost WHRB \$11,865.60 in additional labor costs for census reporting instead of the current sample reporting.

Total W_c for WHRB

Adding the cost of hardware and data entry labor together we find that the additional cost burden for WHRB adopting census reporting is \$13,024.60.

WHRB suspects that, as in previous comment periods, the CRB will receive comments from many non-commercial stations which have annual budgets on average of \$9,000.¹⁷ Even

¹⁷ The \$9,000 per annum average is supported by the survey of campus stations described in Capt. Kass' testimony in Dkt 2005-1-CRB DTRA. For high school webcasting operation the average would probably be substantially less.

before applying our reasonableness test, one can qualitatively see that for these stations W_c will be obscenely high compared to their overall budgets.

D. Calculation of losses faced by copyright owners

Our next task to properly apply the reasonableness test is to determine the loss faced by a copyright owner under a sampling-based reporting regime.

Before beginning, it is illustrative to note the maximum possible loss faced by a copyright owner. We shall define this as ' $CO_1(\max)$.' For 2008, WHRB owed \$500 in royalties for the performance of sound recordings on its webcast. Therefore, no individual copyright owner could possibly have a loss of more than \$500, and $CO_1(\max) = \$500$. Of course, in practice it would be impossible for any single copyright owner to be entitled to the entire \$500 royalty payment from WHRB, but this is the theoretical limit on loss.

WHRB broadcasts 78,840 sound recordings annually. Since the station has a policy of avoiding a repetition of sound recordings in a 365 day period, this also indicates that the station broadcasts 78,840 unique sound recordings annually.

Therefore, on average the owner of each one of those sound recordings should be owed \$0.00634. We conclude $CO_1 = \$0.00634$ and the theoretical max loss for a single copyright owner (or, more realistically, all copyright owners collectively) is $CO_1(\max) = \$500$.

E. Census reporting fails the reasonableness test

Now that we have determined both the costs for the webcaster and the loss for the copyright owner, we can apply our reasonableness test from above.

As a reminder, our test is:

If ($W_c < (M \times CO_1)$), then the reasonableness test passes.

Plugging in our findings, we have:

If ($\$13,024.60 < (M \times \$0.00634)$), then the reasonableness test passes.

For this statement to be true, the multiplier 'M' would need to 2,054,353. This indicates that copyright owners need to demonstrate that is reasonable for non-commercial webcasters to face a cost burden nearly 2 million times a copyright owner's loss. This is plainly unreasonable and fails the reasonableness test. We conclude that census-based reporting is unreasonable for non-commercial webcasters.

Perhaps copyright owners will attempt to claim that some individual copyright owners might be owed more than just \$0.00634 in royalties from WHRB. Let us try the test using the theoretical maximum loss $CO_1(\max)$ we defined above. This gives us the following for the reasonableness test:

If ($W_c < (M \times CO_1(\max))$), then the reasonableness test passes.

Plugging in the numbers, we get:

If ($\$13,024.60 < (M \times \$500)$), then the reasonableness test passes.

In the theoretical maximum loss case, the value of 'M' would need to be 26. Therefore, copyright owners will need to demonstrate that it is reasonable for non-commercial webcasters to face burdens that are 26 times the maximum theoretical loss faced by a copyright owner under sample-based reporting. Again, this plainly fails the reasonableness test.

We conclude that there is no scenario in which it is reasonable for the CRB to adopt census-based reporting for non-commercial webcasters. We urge that the CRB exempt this class from census reporting and maintain the current sample-based interim rules.

F. Non-commercial webcasters are unlikely to abandon programming philosophy and aesthetic

As we have demonstrated, the fact that non-commercial webcasters rely on human DJs to create their programming in real-time is the largest contributing factor in making census-based

reporting unreasonable. Regardless of the large costs associated with switching to harddrive-based automated programming, non-commercial webcasters have purposely maintained manual systems for aesthetic and programming philosophy reasons. Like traditional winemakers who continue to hand-produce small batches of high quality wine, non-commercial webcasters believe strongly that the physical sound recording and the human DJ are essential to their unique brand of carefully crafted music programming.

Indeed, in a world where almost any piece of music content published by a major record label can be found online, the ability of non-commercial webcasters to maintain libraries of independent and obscure music grows in importance. The human DJ's ability to weave this difficult to find music into compelling programming is even more valuable in a world where listeners are overwhelmed by a large array of uncoordinated mainstream, commercial outlets.

The only segment of the physical sound recording market which has experienced an increase in sales is vinyl.¹⁸ While CD sales have plummeted between 15 and 30% over the last year,¹⁹ sales of vinyl are up 15.4%.²⁰ WHRB and other non-commercial webcasters continue to rely on both old and new sound recordings embedded in vinyl. If WHRB were to be limited to playing harddrive-based digital source music only, we would lose the joy of discovering hidden gems and fully exploring the world of recorded music.

The human DJ is not only a conduit for painstakingly creating our product, she is also an important member of our local community. Her existence is essential to the mission statement of

¹⁸ Dell, Kristina, *Vinyl Gets Its Groove Back*. Time, January 10, 2008. <http://www.time.com/time/magazine/article/0,9171,1702369,00.html>.

¹⁹ CD sales falling faster than digital music sales rise. *The International Herald Tribune*, June 18, 2008. <http://www.iht.com/articles/2008/06/18/technology/music.php>.

²⁰ Dell, Kristina, *Vinyl Gets Its Groove Back*. Time, January 10, 2008. <http://www.time.com/time/magazine/article/0,9171,1702369,00.html>.

educationally-affiliated non-commercial webcasters which include the education of members as a main plank. We take seriously this educational component with prospective members undergoing a six-month training process in both the technical operation of a radio station but also an apprenticeship with older members to learn the art of radio programming and music appreciation. This training process proves a formative experience in the cultural exploration and maturation of many members. For example, leading figures in the critical study of contemporary music and popular culture such as Alex Ross,²¹ Kelefa Sanneh²² and Douglas Wolk²³ have all cited their years at WHRB as instrumental in their work.

IV. ATH Exemption is Needed for Non-Commercial Webcasters

While the CRB states that only a single "substantive" change has been proposed in the final regulations, WHRB notes that CRB has removed the ability for nonsubscription services to report Aggregate Tuning Hours ("ATH") as a proxy for actual total performances.²⁴ However, the CRB has maintained the ATH exemption for several other classes of services on the grounds "that technological impediments to measuring actual listenership continue to hamper actual listenership measurement with respect to each sound recording."²⁵

²¹ Music critic for *The New Yorker*, author of the best-selling book the book *The Rest Is Noise* (2007), a cultural history of 20th-century music that journeys through pre-World War I Vienna, Paris of the 1920s, Hitler's Germany, Stalin's Russia, and New York of the 1960s and 1970s and recent recipient of the 2008 MacArthur Fellows "Genius" grant.

²² Journalist and music critic for the *New York Times* and *The New Yorker*.

²³ Author of *Reading Comics: How Graphic Novels Work and What They Mean* (Da Capo, 2007) and *Live at the Apollo* (Continuum, 2004). He has written about comic books and pop music for *The New York Times*, *The Washington Post*, *Rolling Stone*, *Blender*, *The Believer*, *Print*, *Spin*, *the Village Voice*, *World Art*, *Salon.com*, *Slate.com*.

²⁴ 73 Fed. Reg., No. 250 at 79729.

²⁵ *Ibid.*

As per the CRB's logic, the question of whether the ATH exemption should be allowed is not a question of reasonableness but is instead settled by one of technical possibility. If WHRB and other non-commercial webcasters that rely on real-time programming by human DJs demonstrate that it is impossible to accurately measure actual listenership of individual sound recordings, the CRB must also grant this class of users the ATH exemption.

In its Comments at 6 in RM 2002-1B (September 30, 2002) WHRB stated that it was not technically possible for the station to measure or report actual total number of performances. There have been no changes in technological innovation since 2002 to modify this statement. As with our comments on census-reporting, the problematic nature of measuring actual total performances stems from the reliance of WHRB and other non-commercial webcasters on human DJs who program in real-time using physical media.

Two independent data logs are required to report actual total performances. The first log is hand-created by the human DJ by manually transcribing metadata via data entry into a computer program. Being a human, the DJ has no ability to time their data entry task to the precise start and end time of a sound recording. In fact, WHRB's research shows that most DJs actually enter data for several sound recordings all at-once instead of transcribing the data after each subsequent play. This is because sound recordings are of differing time duration and it is often easier to accomplish data entry tasks during recordings that have a duration greater than four minutes than during shorter pieces when tasks such as preparing the next sound recording are of a more time sensitive nature. Therefore, the log of sound recordings played lacks accurate timestamp data.

The second log required to report actual total performance is a server log which indicates the start and stop of TCP/IP connections to the streaming web server.²⁶ The start and stop points of a connection are marked using a UNIX timestamp²⁷ which can be translated into a human readable time in complete date plus hours, minutes, seconds and a decimal fraction of a second (e.g. YYYY-MM-DDThh:mm:ss.sTZD or 1997-07-16T19:20:30.45+01:00). We note that unlike humans, the computer is very good at tracking time precisely.

Given a raw log with start and stop times for TCP/IP connections, a log analysis program can parse the server log and determine number of active listeners between very precise time points.

Now comes the tricky part. In order to measure the actual total performances we need to collate the time inaccurate human-generated play log with the time accurate analyzed server log. This task is impossible. Given the lack of precision from the human log, we will have no confidence that our measurements of actual total performances are accurate.

As an example, imagine the human DJ has played three sound recordings at the following times:

Sound Recording	Start Time	Stop Time
A	13:01	13:05
B	13:05	13:08
C	13:08	13:14

²⁶ TCP/IP is the set of communication protocols used for transferring data across the internet. TCP is the Transmission Control Protocol and IP is the Internet Protocol.

²⁷ Unlike humans who previously used watches and today use cell phones to determine the time of day, most computer servers measure time in the seconds which have elapsed since UNIX Epoch, with Epoch being January 1, 1970.

However, due to programming constraints the DJ has completed data entry for all three recordings between 13:10 and 13:13. Therefore, the play log will contain the following information:

Sound Recording	Start Time	Stop Time
A	13:10	13:13
B	13:10	13:13
C	13:10	13:13

Now, when we combine this data with the server log we can only determine the number of listeners connected to the program between 13:10 and 13:13, not the number of listeners for each individual song. It is not possible to accurately measure the actual total performances given our human data-entry model.

From a technical perspective, this is the same problem faced by other classes of services such as the preexisting satellite digital audio radio services. Therefore, as the CRB has continued to grant this class the ATH exemption, the case for exempting the small, non-commercial webcasters is equally, if not more, compelling, and any distinction between the two classes cannot be justified.

V. Further Information on Available Software and Delivery Mechanisms

G. Considering software in the contemporary context

WHRB notes that since the last comment period, the use of software programs that reside on the internet instead of a user's own computer has grown in importance. These types of programs are called Software as a Service ("SaaS") or more generally Cloud Computing. Prime examples of this type of software include Google's Gmail²⁸ and Documents²⁹ programs, along

²⁸ <http://www.gmail.com>

²⁹ <http://docs.google.com>

with specialty programs like Intuit's Quickbooks Online.³⁰ Defining feature of cloud-based software are:

- Capable of running within or as a plug-in to a standard web browser such as Firefox.
- Centralized storage of data files. Instead of storing data files on a user's individual computer, data is stored on a server and accessible from any internet-enabled device.
- Reliance on data sharing and collaboration. Once data is stored in the cloud, it becomes easy to share amongst users. For example, Google Documents allows multiple users to collaborate on writing and editing word processor documents without the need to send files or install word processing files.

WHRB includes information on SaaS software to ensure the CRB thinks broadly of the term "software" throughout the rulemaking procedure.

H. Spreadsheets to Compile Reports of Use

Currently, SoundExchange supports plugins to Microsoft Excel and Corel's Quattro Pro to create ASCII log files from properly formatted native spreadsheet files. In the last three years, a third mainstream spreadsheet has become available from Sun Microsystems. Sun's OpenOffice.org ("OOo") package includes a spreadsheet program. OOo's mission statement is: "To create, as a community, the leading international office suite that will run on all major platforms and provide access to all functionality and data through open-component based APIs and an XML-based file format."³¹ The OOo spreadsheet program has the following advantages:

- OOo is free! Sun releases OOo under the LGPL, an open-source license which allow for free distribution and copying.
- As an open source project, OOo is intended to be highly customizable and support interoperability through open standards.

³⁰ <http://oe.quickbooks.com>

³¹ Accessed at <http://about.openoffice.org/index.html>

We believe these advantages make OOo a prime candidate for compiling reports of use and recommend that SoundExchange work with services to allow the inclusion of OOo as an accepted spreadsheet program.

I. Report Delivery

WHRB suggests two changes to the regulations for delivery of electronic files containing reports of use.

First, we suggest that FTP be replaced by the updated SFTP protocol. As WHRB has documented previously,³² FTP is a known insecure transfer protocol. It is particularly prone to “man-in-the-middle” attacks where a rogue server intercepts the data file during transfer. In addition, the FTP protocol is not robust and often results in corrupted data due to the method the protocol uses to signal EOF (end-of-file).

SFTP is an implementation of file transfer over the secure network protocol SSH. It is built-in to all modern server operating systems and is available via free client software such as WinSCP.³³ WHRB urges the CRB updated its proposed final regulations to allow SFTP as an electronic transfer protocol.

The second change we suggest is to require SoundExchange to accept reports of use via its website. Web delivery of sensitive data is now a normal business practice. For example, almost all electronic tax-filing programs are web-based.³⁴ If sensitive financial data can be

³² WHRB comments at 13 in RM 2005-2

³³ <http://winscp.net/eng/index.php>

³⁴ See for example the state of Wisconsin’s suggestion to use web-based tax filing software for its “speed, accuracy and convenience,” noting that the software requires no installation on the client machine. Accessed at <http://www.revenue.wi.gov/eserv/webbased.html>.

transferred via web protocols, we do not understand why this technology should be used for reports of use.

WHRB believes the best way to determine regulations for the use of a website to delivery reports of use is via a status conference between the parties. The services and SoundExchange can discuss possible solutions and find an implementation that SoundExchange can build without undue cost.

VI. Proposal to Require SoundExchange to Regularly Publish its Canonical Metadata Database

CRB closes its NPRM with a plea to interested parties to provide technical information on how to generally improve the delivery of reports of use between the services and SoundExchange. WHRB reiterates its proposal³⁵ that SoundExchange regularly publish a canonical metadata database of known sound recordings. This database could be used by the community of services (and associated software programs that currently exist or might exist in the future) to improve the accuracy of royalty distribution while reducing the expenditure of human and computer resources on the parts of both SoundExchange and the services.

The benefits to such a scheme are as follows:

- **Artists and copyright owners would be more likely to receive their royalties.** With a centralized database of metadata that includes unique, numerical identifiers, the services and SoundExchange could "speak the same language." Instead of passing plaintext ASCII to SoundExchange, the services could report using numerical IDs, improving matching efficiency for SoundExchange while reducing the need for human manual matching and QA [quality assurance]. If SoundExchange achieves higher accuracy in matching reports of use, artists and copyright owners will receive more of their royalties.
- **Expenditure of human and computer resources by SoundExchange will be reduced.** Matching to a common ID system is much easier for computer

³⁵ WHRB Comments at 23-28 in RM 2005-2, filed August 26, 2005.

systems than relying on lexical matching, especially across a domain set such as sound recording metadata where misspellings, abbreviations and slight variations in data can prove extremely troublesome to computer-based systems.

- **Services could avoid manual data-entry on known sound recordings.** As is apparent from the bulk of WHRB's comments, the need for human DJs to conduct real-time data entry while broadcasting is one of the main blocks against enacting additional recordkeeping regulations for non-commercial webcasters. The existence of a centralized, canonical metadata database would ease the data entry task for stations such as WHRB.
- **Long-term benefit to digital music industry.** The ability to efficiently distribute royalties to copyright owners will be a major determining factor in whether the digital music industry is able to succeed. By creating a centralized database for this purpose now, the industry will see cost-savings across all statutory licenses.

In previous rulemaking exercises, the CRB has interpreted this proposal from WHRB as requiring SoundExchange to host and maintain a centralized system. WHRB does not believe this is necessary. Instead, SoundExchange should be required to publish its most current metadata database at regularly intervals (daily or weekly) to a public location on the internet. The format for the database can be jointly determined by the parties in a status-conference. As long as the format is a valid structure for holding relational data (i.e. CSV, XML, MySQL dump, etc.) it should be sufficient for sharing amongst the community of services.

A requirement to publish a database should not be burdensome on SoundExchange. As a by-product of distributing royalties, they have already built and are constantly updating this type of database. Furthermore, the data requested by WHRB is not proprietary to SoundExchange. WHRB does not want information such as artist/copyright owner mailing addresses or bank account information. Instead, the database will only consist of the public domain items of metadata such as artist, album and track names.

WHRB believes details for enacting a centralized ID and metadata database can be worked out by the parties at a status conference. It is best done via an interactive process, not a

series of written rebuttal comments. We do not believe it should be a contentious proposal and look forward to working with SoundExchange to arrive at a technical solution which will help all parties reduce costs and improve royalty distribution.


VII. Prayer

WHRB urges the CRB to be mindful of the differences between non-commercial webcasters and large, commercial webcasters when promulgating final regulations governing recordkeeping for use of digital sound recordings. We urge the CRB to adopt procedures in the rulemaking process that encourage the parties to compromise and collaborate on final regulations. We urge that non-commercial webcasters continue to be allowed to utilize loose, sample-based reporting

with ATH as a proxy for number of actual performances. Finally, WHRB urges that the CRB think of the long-term impact the costs of royalty distribution will have on the digital music industry and take steps to create a centralized metadata database of sound recordings.

Respectfully submitted,

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³⁶ Michael Papish is also CEO of MediaUnbound, Inc. (<http://www.mediaunbound.com>) a provider of media recommendation and personalization technology based in Cambridge, MA. MediaUnbound has no financial interest in the outcome of this Docket.

³⁷ Required to be served under P.L. 89-332, 5 U.S.C. § 500(f).