Journal of Mobile Media

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Wi: Journal of Mobile Media, *Spring 2009*

The online version of this article can be found at:

https://doi.org/10.65968/QOED7397

Thulin, Samuel. "The Fourth Track: Re-visiting the Cassette-Based Portastudio". *Wi: Journal of Mobile Media*. Spring (2009). Web. https://doi.org/10.65968/QOED7397

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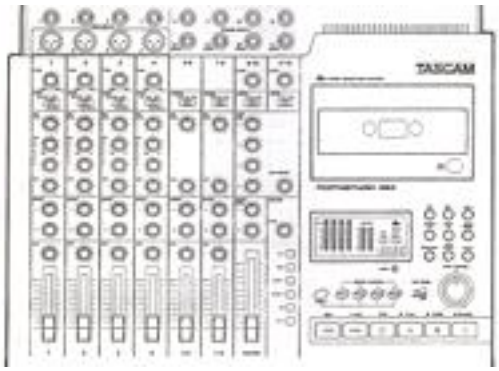


Introduction

Through a series of experiments with the Tascam 464 Portastudio this project examines the cassette-based multi-track recorder as an obsolete technology, an articulation of mobility and sound-recording, and a site for creative possibilities. These three perspectives on the device are integrally linked, as I argue that 1) the obsolescence of the portastudio provides an opportunity for a re-consideration of the technology, 2) that this re-consideration is best effected not only through theorization but through practice – that is, active and creative exploration of the device – and 3) that the combination of theory and practice in the context of the portastudio's obsolescence reveals important connections between this 30-year old technology and ideas around portability, mobility, and sound-recording processes.[1]

An early inspiration for this project was the classic essay "The Question Concerning Technology" in which Martin Heidegger warns against the unreflective use of technology as a means to an end. Heidegger calls on us to question technology and to pay attention to what is revealed and concealed through its use. Heidegger further argues that there is a fundamental link between technology and art, and that when this link is explored we may reach an improved understanding of the essence of technology and our relationship with it. Implicit in Heidegger's analysis is the idea that the possibilities of a technology can never be completely exhausted, that there is always more to be "revealed". While Heidegger's "revealing" is difficult to pin down, the significance of the concept for this project is tied to the idea that the obsolescence of a technology is not the end of its relevance. Indeed, there are hazards, both intellectual and environmental, to focusing always on the latest technology without considering the afterlife of older technologies that persist alongside (materially) and within (discursively) the newest innovations. It is all too easy to approach a technology reductively once it has become obsolete. The Tascam 464 is obsolete in a number of ways – it is no longer being manufactured; its storage media (the cassette tape) is not in use in the contemporary recording context; it is no longer part of the predominant discourse around home-recording – and when I first switched from the 464 to computer recording I initially reduced the 464 to a mixing console for sending sounds to my computer. "The Fourth Track" attempts to expand rather than reduce the realized potential of the portastudio, while at the same time acknowledging that the sound-recording technologies that have followed it and constitute the contemporary home-recording environment have a vital role in informing this re-consideration of the device. That the portastudio is no longer in the home-recording limelight means that the promotional discourse that influenced its use has lost

some of its power, and the modern methods of home-recording provide an opportunity to both use and think about the portastudio in a new context.

That said, the portastudio was obviously once a new technology and a re-consideration of the device demands a dialogue with its history. The appellation "Portastudio" was first used by Tascam in 1979 to market its new line of portable 4-track cassette tape recorders, and from the name there is much to be gleaned. Immediately the technology was situated within both the discourses of the recording studio and of portability – two areas that in many respects seem at odds with one another. The recording studio was traditionally a place where musicians would go to be recorded by experts. The end product of these recording sessions was intended to be portable but the process was not. Portability entailed affordability and miniaturization but recording studios themselves were decked out with costly gear and soundproofing materials often spread among multiple rooms; this was not a portable set-up. Moreover, studios were very carefully controlled environments sealed off from the outside world. Referring to phonograph recording, Jonathan Sterne (2003) writes:

From the very beginning, recorded sound was a studio art…The studio was a necessary framing device for the performance of both the performer and apparatus: the room isolated the performer from the outside world, while crude soundproofing and physical separation optimized the room to the needs of the tympanic machines and ensured the unity and distinctness of the sound event being produced for reproduction. (p. 236-7)

The transition from disc-recording to tape-recording during the 1950s and 60s paired the separation from the outside world with increased possibilities for sonic

manipulation and the process of recording began receiving more and more attention as an important part of the actual production, and not just the reproduction, of music. Virgil Moorefield (2005) has characterized this phase in the history of sound-recording as a shift away from the view of recording as a primarily technical matter to an appreciation of its dimensions as an artistic process. In-studio experimentation came into vogue with particular force during the late 1960s and the idea of the studio as a musical instrument in its own right has gained increasing acceptance since then. However, as long recording remained tied to the studio environment, no matter how open-minded and adventurous musicians and producers were in their artistic experimentation, the process remained highly controlled in terms of its isolation from the contingencies of the outside world.

With the prefix "porta" the idea of the hermetically sealed and immobile studio was challenged. The portastudio invited the convergence of sound-recording and the world outside the studio.[2] At least, partly. In terms of sound content, the marketing of the portastudio promoted it as a way of approximating the products that were being recorded at major recording studios and/or as a gateway to those studios (i.e. the idea of making a demo that would get you signed). Multi-track recording was made available to a greater number of people than ever before, which likely helped to increase the circulation of a more diverse array of original musical productions, but the "studio" suffix, bearing its attendant associations with the established conventions of professional recording studios, meant that the purpose and methods of the portastudio seemed predefined. In short, the goal was to make as "high quality" sounding recordings as possible. The aesthetics of an isolated, low-noise recording environment were carried

over onto the portastudio and instruction manuals stressed methods of achieving optimum signal-to-noise ratios and making sure that extraneous sounds were minimized. These were, and in many cases still are, the norms of the practice of recording music and they are not without their merit. However, when applied too stringently to the portastudio they obscure the full range of possibilities provided by two of the most significant innovations of the technology: the fact that multi-track recording could now be done anywhere there is power, and the integration of a mixing console and cassette-tape recording unit.

The experiments that are described below explore these innovations in greater detail in the context of the obsolescence of the cassette-based portastudio. Of course, it must be noted that since its inception the portastudio has been used in a number of ways outside the dominant discourse of sound-recording, perhaps most notably in its association with the lo-fi aesthetic. Some musicians continue to record exclusively with cassette-based portastudios in order to achieve a sound that is not as polished as a professional studio recording. The lo-fi aesthetic is related to my experiments because it represents a departure from a studio-informed approach to the device, but it is not the ultimate goal of my experiments. Rather than operating along a lo-fi/hi-fi dialectic, I am interested in examining the convergence of the "porta" and the "studio." If the "studio" points to a controlled environment for recording music, the "porta" points to that world outside and suggests both new arenas for control and a greater level of chance.

Note: A basic knowledge of recording practices and the differences between analog and digital recording technologies is helpful for the fullest understanding of discussion of the sound pieces that follow. Unfortunately, I do not have the space to provide a

comprehensive explication of all the relevant concepts, which include: looping, mixing, portastudio technique, computer-based recording, and sound-processing. However, there is certainly no shortage of literature on these subjects (see Peter McIan on portable studios, Huber and Runstein on recording both in analog and digital formats, and Paul White on mixing and processing; many, many other books, articles and websites are widely available on each of the concepts listed above).

Sound Pieces

"The Neighborhood"

This first sound piece is an examination of the interaction between place and the recording process. In discussing the desired sound for concert halls, offices, acoustical laboratories and soundstages in early 20th century America, Emily Thompson (2002) writes: "Clear, direct, and nonreverberant, this modern sound was easy to understand, but had little to say about the places in which it was produced and consumed" (p. 3). During this period sound came to be thought of as a signal and the idea was to achieve as a high a level of signal clarity as possible. This logic fed into the valorization of recording sounds dry in the studio – spatializing effects like reverberation could be added in post-production with greater levels of control. This angle on recording pure sounds was complimented by musical tradition. Michel Chion (1994) defines materializing sound indices (m.s.i.s.) as "the sound's details that cause us to 'feel' the material conditions of the sound source, and refer to the concrete process of the sound's production"; he goes on to say, "in many musical traditions perfection is defined by an absence of m.s.i.s" (p. 114). "The Neighborhood" focuses directly on the material

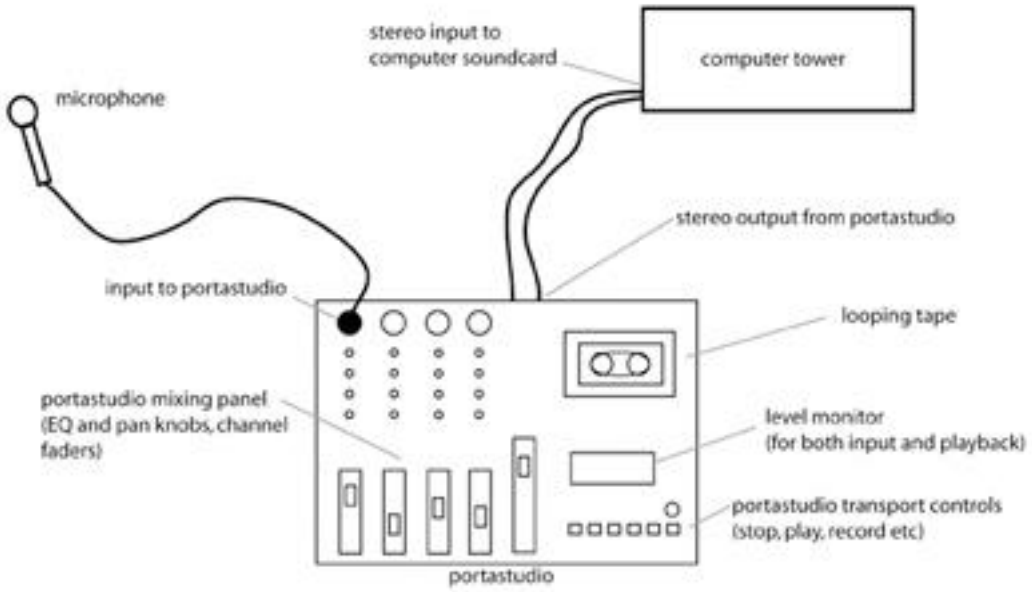
conditions of the recording situation, pointing to two aspects of the practice that are often minimized in recording studios: the sounds of the place of recording, and the sounds of the recording process itself.

The place of recording is extremely important for the portastudio because, as I have mentioned, the "porta" brings the idea of the "studio" into dialogue with the outside world. Yet, books on the portastudio approach the location of recording as a problem that needs to be remedied. In his informative and entertaining guide, *Using Your Portable Studio Peter McIan* (1996) writes:

When you're choosing your recording location you need to be able to identify potential problems. One way to do this is to place the mic in a likely spot and record the environment for fifteen minutes. Then listen back. What you'll hear are the sounds the mic will hear as a background to your vocals. Can you hear the refrigerator kick on? The air conditioning whistling through the vents? The sound of enthusiastic birds? Your dog scratching at the door to be let out immediately, or else? You need to be aware of all these little problems so that you can go about fixing them. (p. 162)

On the one hand, this is very practical advice that will help in achieving a good quality recording (and I have often followed it). On the other hand, this evaluation of the soundscape approaches the portastudio with a bias in favour of the conventions of a professional recording studio. The domestic sounds McIan describes are, in some ways, precisely what the portastudio should be recording. Thus, for this sound piece I set up a mic by an open door leading outside.

The lack of control over the recording environment becomes the focus of this piece rather than something to be "fixed". At the same time, the lack of control over the environment is paired with the control that I have over the recording equipment. This piece relies on a specific combination of tape looping, bouncing, and distortion that is afforded by the design of the portastudio. The piece was created live in one take. Instead of being the endpoint for sound, the portastudio was used as a complex looping device – a process – and the sound that went through the portastudio was recorded to a computer. The computer and the portastudio were set up in such a way that the sounds of the environment were recorded both in their "original"[3] form and in their processed form simultaneously.



Set-up #1: Click to view the image in full size

- 1. The signal from the microphone passes through the portastudio's mixer

- 2. The signal from the microphone can be recorded to any of the 4 tracks on the looping tape inside the portastudio.
- 3. Audio material recorded to the looping tape can be played back and mixed.
- 4. Different tracks of recorded audio material can be bounced along with the signal from the mic onto a separate track (this provides an opportunity to distort the previously recorded material)
- 5. Both the signal from the microphone and the signal from the playback of the looping tape travel from the output of the portastudio to the input of the computer where they can be recorded via sound editing software

The processed form is a sonic palimpsest where the sounds of the environment are constantly being changed and manipulated, replaced and buried beneath other sounds. Distortion is compounded by overloading the portastudio circuitry and saturating the tape. With each bounce (combining two or more previously recorded tracks to one) the sound changes in unpredictable ways – most notably, gaps, places of silence (or of less sound) pop up, creating strange rhythms. The portability of the portastudio makes the sounds of the neighborhood available for multi-track manipulation. At the same time the design of the device, which enables that portability, influences the possibilities for manipulation. Ultimately, even though I had some degree of control over the recording equipment, it was far from total. Thus, the idea of chance and lack of control associated with the sounds of the non-studio location of recording can be explored as a creative possibility with regards to the equipment as well. This idea is pursued in the next piece

"Musical Unpredictability"

This piece employs some of the same techniques as "The Neighborhood" but applies them to a sound source over which I have greater control than the environment – myself – to investigate the ways certain affordances of the portastudio may influence the creative process. In particular, this piece uses cassette tape looping, combined with other techniques, to further examine the dialectic between control and loss of control and its influence on musical composition. Portastudio looping is considered alongside digital looping technology.

In "'Should One Applaud?': Breaches and Boundaries in the Reception of New Technology in Music." Trevor Pinch and Karen Bijsterveld (2003) explore how music technologies often reveal a value placed on the fusion of unpredictability or unexpectedness and the mastery of technology, dubbing this seemingly contradictory impulse "uncertainty re-controlled" (pp. 546-47). The portastudio, as a looping device, simultaneously allows for more parameters of control than any other technology I have ever used and is completely impossible to predict. The control comes from the fact that I can record 4 separate tracks of loops in real-time, I can EQ each track individually, I can pan and adjust the volume of each track, I can speed up and slow down the loops, I can bounce tracks together and record new tracks on the fly, and I can play along with the loops through the mixer. These particular possibilities are connected to the integration of the mixing console and the tape-recorder that is necessary to make the portastudio portable. In a similar way, the unpredictability of portastudio looping arises in large part from the design of cassette tapes, which is also tailored for portability. Due to the small size of the magnetic tape used in cassettes it is extremely difficult to construct a precise loop or achieve consistency between loops. For instance, all of my tape loops were of

slightly different lengths, which resulted in different looping times and different degrees of tape tension. Software and the digital recording environment allow for clean and precise loops that repeat predictably. However, handling cassette tapes results in segments where the ferric-oxide is either worn off or covered with finger grease, translating to drop-outs (places where the sound is less audible or inaudible) during playback. Moreover, looping pre-recorded material on cassette tapes offers relatively little control over what portion of audio material becomes part of the loop. At first glance then, cassette tape loops may appear to have little to recommend them. However, with cassettes and the portastudio it is possible to create a blank tape loop and then record original material to it, while exercising the particular portastudio controls listed above. When this is done, the tape loop is a potential for looping sound; every tape loop is physically different and this affects the particular ways in which the recorded sound repeats. The uniqueness of every loop means a lack of consistency and control but it is also a creative opportunity.

My original idea with this piece was to hook up a mic, a keyboard, and an electric guitar to the portastudio – which would be equipped with a blank tape loop – and to play something on one of the instruments, loop it, play along on another instrument, maybe add to the loop, bounce looping tracks together, and sing over all of this. The idea was to plan out the composition, both musically and choreographically, and then record it all live. However, I soon realized it was impossible to stick to such a plan because of the unpredictability of the cassette tape loops. Thus, I decided to try the same basic technique without a predetermined composition in mind. I had to compose the piece on the spot as I was recording it. I recorded seven pieces this way, trying to arrive at

something that was musically cohesive. The difficulty was that I could never predict how the initial loop would turn out – where the drop-outs would be, what kind of rhythm it would imply etc. At the same time, this element of chance resulted in pieces that I never would have composed if I had had total control over every dimension of the process. Loops are pervasive in contemporary music, both underground and mainstream, but looping in the digital recording environment involves a different balance between control and chance. My point is not that one method of looping is superior to another, but rather that one way of re-considering the portastudio in the context of its obsolescence is to examine its connections to current recording practices and to view it not necessarily as an inferior predecessor but as another way of working with sound.

"Thrifting"

As I have noted, in order for the portastudio to be portable the essential components of a recording studio – the mixer and the recording unit – had to be integrated where they had previously been separate and this integration had to be matched with a portable recording medium: the cassette tape. By the late 1970s cassette tapes were beginning to compete with 8-tracks for the status as the most popular medium for mobile music[4]. Sales of blank cassettes were at least as important as sales of recorded cassettes since blanks allowed people to record radio programs and to make duplicates of their vinyl records which they could then listen to in their cars or, by the 80s, on their Walkmans. Thus, the idea of recording to cassette tapes was hardly an innovation at the time of the invention of the portastudio. Rather it was the method of recording to cassette tapes that was completely new. Instead of using the medium as two sides of two tracks (stereo: left and right), the portastudio used the cassette as one side of four tracks and increased

the speed of the tape transport to achieve a higher level of sound quality. A medium that had previously been used for the reproduction of recordings could more easily than ever before be used for their production. The combination of cassette-tape technology, a mixer, and a recording unit formed the core of the portastudio, and this integration afforded particular technical and artistic possibilities. Again, the "porta" marked a turning point not only in the where and when, but also in the how of recording practice.

Of course, the integration of the cassette tape with the portastudio not only provided new avenues for the recording process, it also offered new ways of playing back previously recorded cassettes. Playing a commercial cassette tape in a portastudio allows for manipulation of the speed and direction of playback, as well as the option of changing the equalization, volume, and panning of channels on the tape. "Thrifting" explores these possibilities for re-playing cassettes in the context of the obsolescence of both the portastudio and its recording medium. In terms of technique, modern recording technology – my computer – is arguably more significant for this piece than for the others as it provides a second multi-track environment where I can compile the material I play through the portastudio. This piece involves bringing together multiple playbacks from the portastudio – multi-tracking the multi-tracker – whereas the other pieces involved a single live performance with the portastudio.

"Thrifting" was created using cassette tapes found at the Salvation Army. Although there is nothing particularly new about thrifting for audio material to compose music, usually this is done with vinyl records rather than magnetic tapes. Tapes put a different spin on the process. There are several types of recorded material that seem to be more closely associated with tapes than vinyl: 1) audio books, 2) meditation-hypnosis instruction

and, 3) band or solo-artist demos. Thus, while there are some fundamental similarities between thrifting for vinyl and for tapes, such as the chance involved and the idea of recycling remnants of the past, the two media allow access to different content. And, of course, tapes and records are played back in very different ways.

This piece begins with the very first audio material I recorded for the project – a tape loop of "The Baby Comes First Audio Library – Nutrition and Your Baby: The First Year", producing irregular pulsing sounds. Over this sound I layered material from 5 other tapes.

Cassette Tapes Used for "Thrifting"

1. Radio Retunrs – Burns and Allen: “Gracie has Laryngitis”

2. Arthristis – Dr. Lee Pulos, Clinical Psychologist – Hypnosis Development Programs

3. The Baby Comes First Audio Library – Nutrition and Your Baby: The First Year

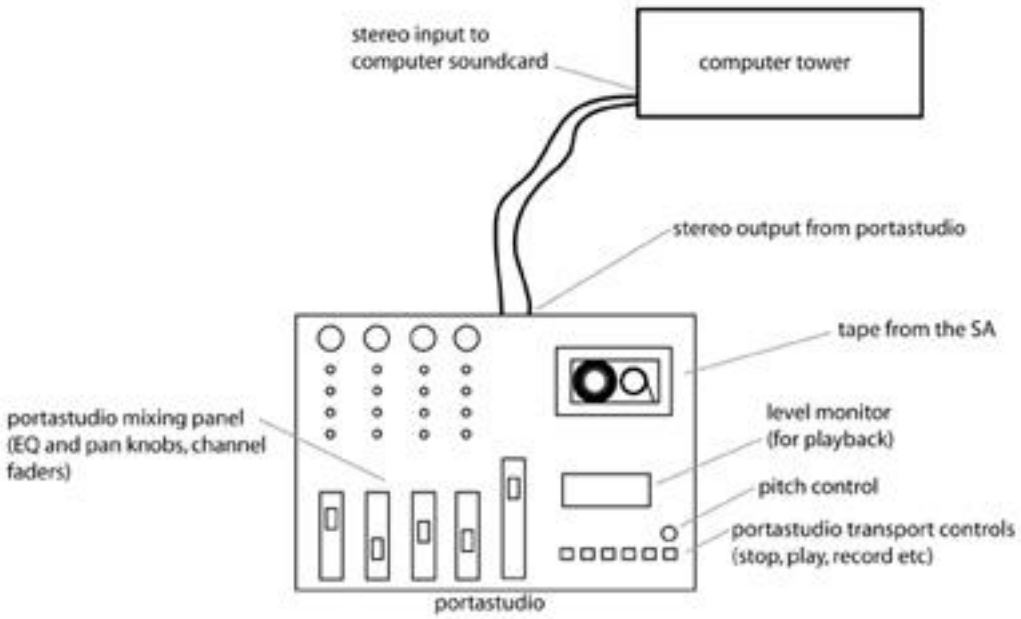
4. Niall Toibin – “Encore”

5. Alex Jones and Doug Cutler – Kali’s Dream

6. Caribbean by James A. Michener – read by Roscoe Lee Browne

All cassette tapes were purchased at the Salvation Army at 5758-62 Sherbrooke W, Montreal

My technique, in keeping with the ideas of chance and acceptance of whatever might be revealed, was to pop a tape into the portastudio and record to my computer the material from wherever the tape happened to be positioned.



Set-up #2: Click to view the image in full size

After recording the tape material to the digital environment I allowed myself to make volume adjustments but refrained from any other type of post-production manipulation. All panning, EQing, and positioning of the clips, was done with the portastudio, as was much of the fading in and out. These sound adjustment decisions were made improvisationally and performed in real-time for each track of playback. The spontaneity of the piece is also aided by the fact that I did not seek out any particular clips to sample. In resisting the urge to take more control over the piece I hoped to reflect the experience of thrift shopping more generally. As Tinkcom, Fuqua, and Villarejo (2002) note, "Thrift shopping rarely satisfies the hunt for a particular object, even if that desire motivates the shopping experience. It instead requires fluidity and is structured by chance and surprise" (p. 464). Through the lens of Heidegger's essay, thrift shopping is bound up in revealing. The thrift shopper must be open to what might be revealed rather than regarding the expedition merely as a means to an end; the thrift shopper must also be aware that an item is never completely used up. These ideas operated as guiding principles for this sound piece and indeed for the project overall.

Conclusion

A basic premise of this project has been that active experimentation with the portastudio in the context of its obsolescence will shed light on issues surrounding mobility, sound-recording, and technological change. Of course, it must be acknowledged that such an approach risks technological determinism by focusing so strongly on the "thing". Further research into the portastudio's past and current position among home-recording enthusiasts would help to provide a better-rounded social context for an investigation of some of the issues covered here. However, such a study

necessitates ethnographic work that unfortunately was beyond the scope of this project. That said, this preliminary examination of the portastudio begins to reveal the device's significance in terms of the convergence of studio recording practices and an increased variability of the place of recording – the meeting of "porta" and "studio." This convergence, which has continued in the form of digital portastudios and laptop recording, presents an opportunity to explore an aesthetic that views the sounds of the recording environment as an important part of the process rather than an intrusion. This project has also explored some of the recording and playback processes made possible by the integration of a mixer and cassette tape recorder – a design that is bound up in the portability of the portastudio. In tandem, the ability to move a multi-track recorder around and the design that first provided that portability create a unique combination of control and lack of control that offers equally unique creative opportunities. In the past the relevance of the portastudio with regards to the possibilities of the location, the methods, and the content of what was recorded was often over-shadowed by the discourse that promoted the portastudio as device meant to follow the norms and conventions of the recording industry. Today, the relevance of the cassette-based portastudio is often obscured by its obsolescence. However, the obsolescence of the portastudio need not conceal the technology or reduce its potential. Rather it can provide an opportunity for re-consideration and further exploration. In formulating the sound pieces for the project, I originally imagined composing four pieces as a correspondence to the four tracks available through the portastudio. I have settled instead on an idea that borrows from Heidegger, thus returning to the initial inspiration for the project. I have decided to feature only three sound pieces; "The Fourth Track" refers to the piece I did not create, the piece that is still waiting to be

revealed. Thought of in this way, every technology has and always will have a fourth track.

Notes

1. Throughout this paper the term "portastudio" will refer to cassette-based portastudios unless otherwise noted.

2. Field recording existed for many years prior to the portastudio, but it did not carry with it the idea of the studio in the same way, and multi-tracking was impossible.

3. All recorded sound is mediated – to record a sound in its "original" form is something of an oxymoron. What I mean here is that these sounds were not processed or manipulated in any way outside of their being recorded by the recording apparatus.

4. David Morton (2004) cites 1979 as the year that the ascendancy of the cassette became clear – the same year Tascam launched its Portastudio.

5. I used the computer to record those pieces but they could have been recorded via a stereo tape deck just as easily. The computer remains significant on a theoretical level, however, in bringing the obsolete technology of the portastudio into contact with today's recording technology.

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Biography

Samuel Thulin is a graduate student in the Department of Communication Studies at Concordia University in Montreal. His current research explores relationships between music, mobility, and place.