

Essential Audio Recordings for Students (EARS): Audio Experts Share the Recordings They Think All Students Should Know.

Abstract

To promote music literacy and foster deliberate practice for students in Recording and Entrainment Industry programs, the Essential Audio Recordings for Students (EARS) database was created from interviewing award winning recording experts. This ongoing database currently consists of over 150 recordings deemed essential for students and aspiring engineers to know. The over twenty experts who participated focused on the seminal analog multi-track recordings of the 1960s and 1970s. More experts from diverse musical and social backgrounds are sought to generate a larger list to yield a broader perspective.

Introduction

Historically, the art of recording music and mixing was often first learned through imitation via apprenticeship (Bohem 2007; Grundy 1984; Pritts 1998). In contemporary Recording Industry (RI) education programs, recording skills are learned from mentors, professors, publications, the Internet, DIY videos, and even peers. Current literature suggests that critically listening to exemplary recordings can help better engineers' ears and skills (Corey 2013; Merchant 2013; Swanson 2013; Thompson and Mosley and Ward 2013). Highly developed critical listening skills allow an engineer to identify technical processing and production techniques useful for application in their own work (Corey 2010). However, it is important that students analyze and evaluate exemplary recordings because these are the techniques and sounds they will be re-creating. Fortunately, with the pervasiveness of digital and Internet technologies, students of the recording arts have vast libraries of recordings to use as references. The problem does not lie in access to these recordings, but rather navigating the over eighty years of professional sound recordings. In an effort to assist student in this endeavor, the EARS database was created to collect industry experts' opinions of what recordings they think students should listen to and know.

Currently, there are several collections of 'Great Recordings' including those constructed by commercial publications and individuals in the industry. A publication like *Billboard* identifies recordings based on sales and popularity, and *Rolling Stones* polls readers to

identify great recordings. However, neither offers the perspectives of the engineers who are recording and producing the content. There have been some industry leaders who have stepped forward with a “best of list” such as mastering engineer Bob Katz’s “Honor Roll” (Katz 2014) and producer Al Kooper’s “Hot 100” (Kooper 2014). However, Katz’s list is concerned primarily with dynamic range, and Kooper’s list is concerned more with musical and compositional aspects. There are also several reference mix CDs focused on tuning studios and loud speakers (Senior 2008). However, none of the aforementioned focus on the technical and production aspects relevant to aspiring engineers learning to record and mix.

Isomorphic mapping is the technical term for what a recording engineer does: listening to a recording or production and making technical and aesthetic decisions that directly relate to physical actions and alterations of the sound (Corey 2010). Current mixing courses utilize the deliberate practice model and the use of a reference mix to aid the development of this isomorphic mapping (Merchant 2013). It is recommended that, “students assemble a collection of reference mixes used to evaluate monitoring systems and serve as references for aspects of the mix process: e.g. spectral balance and use of effects (Merchant 2011, 4).” EARS can serve as a set of foundational recordings for inclusion in these reference mixes: building a musical encyclopedia to which students can look for inspiration, ideas and precedence. This will be most beneficial when working with clients. Students/novice engineers need to understand what their clients want and how to achieve these goals. Ultimately, clients evaluate engineers on their ability to give them what they want. Students in Recording Industry programs need to understand this fact and cultivate a process that is effective.

Therefore, this list will be for students of the recording arts and will serve as a starting point for colleges, schools of music, and audio education programs wishing to build a library of exemplary sound recordings. The list could be integrated into the curriculum of specific critical listening, production, or mixing courses, or serve as a general list of known exemplary recordings for the learning and recreation of production techniques.

Methodology

During the winter and spring of 2014, over fifty expert engineers were asked to participate in short interviews to determine what recordings they deemed were essential for students to listen to and know. The authors defined expert status as meeting one or more of the

following achievements: Grammy-winning, significant contribution to a gold or platinum album, or a significant amount of commercially released recordings. Prior to the interviews, areas of significance were created in order to keep the conversations directed toward essential recordings for students. These areas included (a) social/cultural importance, (b) technical or production relevance, (c) lasting impact on recording technique, (d) marked a change in the industry, and (e) a great performance. The experts were not required to indicate recordings for all areas of significance, but these served as guideposts for the interviews. The responses were reviewed and the recordings identified were listed and entered into the EARS SQL database.

Results: the List of Essential Recordings

To date, twenty-two expert participants have been interviewed. Their collective accolades included 15 Grammy Awards, 30 Grammy Nominations, 300+ commercially released albums, and 15 gold albums. All experts were male, between the ages of 40 and 65, and worked primarily in Nashville, Miami, Los Angeles, and New York. These experts identified over 150 recordings as essential in one or more of the areas of significance.

A few of the recordings that the experts identified as having social and cultural importance are shown in figure 1. The recordings identified in significance area one were closely linked to the civil rights movement and the advancement of Black Americans in the 1960s. However, some experts interpreted this category to mean recordings that got them into engineering or were pivotal in their career choice.

- THE EARS DATABASE -
(Excerpt)
Significance Area One
 "Social, Cultural or Historical Impact"

<ul style="list-style-type: none"> • The Band. <i>The Band</i>, Capitol. 1969 • The Beach Boys. <i>Pet Sounds</i>, Capitol. 1966 • Beastie Boys. <i>Licensed to Ill</i>, Def Jam. 1986 • The Beatles. <i>Sgt. Pepper's Lonely Hearts Club Band</i>, EMI. 1967 	<ul style="list-style-type: none"> • The Beatles. <i>Revolver</i>, Apple. 1966 • The Beatles. <i>Rubber Soul</i>, Apple. 1965 • Ludwig von Beethoven. <i>50th Anniversary of Magnetic Tape Recording, The</i>, Audio Engineering Society. 1993 	<ul style="list-style-type: none"> • Leonard Bernstein. <i>West Side Story: Original Cast Recording</i>, Sony. 1957 • Buffalo Springfield. <i>Buffalo Springfield</i>, Atco. 1967 • The Byrds. <i>Sweetheart of the Rodeo</i>, Columbia. 1968
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For Complete List Visit [http://\(omitted\)](http://(omitted))

Figure 1. Recordings of social and cultural importance.

A few of the recordings that the experts identified as having technical or production

relevance are shown in figure 2. The recordings from significance area two were created in the late 1960s and 1970s, with fewer recordings from the 1980s and 1990s. Only a few engineers mentioned recordings that were recorded after 2000.

- THE EARS DATABASE -
(Excerpt)
Significance Area Two
 "Important Engineering, Production or use of Technology"

<ul style="list-style-type: none"> • 10cc. <i>The Original Soundtrack</i>, Mobile Fidelity Soundlab. 1975 • Bash & Pop. <i>Friday Night is Killing Me</i>, Sire. 1993 • The Beach Boys. <i>Pet Sounds</i>, Capitol. 1966 • The Beatles. <i>Sgt. Pepper's Lonely Hearts Club Band</i>, EMI. 1967 • The Beatles. <i>Revolver</i>, Apple. 1966 	<ul style="list-style-type: none"> • The Beatles. <i>Rubber Soul</i>, Apple. 1965 • Beck. <i>Sea Change</i>, Geffen. 2002 • Bee Gees. <i>Saturday Night Fever</i>, Polydor. 1977 • Big Audio Dynamite. <i>This Is Big Audio Dynamite</i>, Columbia. 1985 • David Bowie. <i>Low</i>, Virgin. 1977 	<ul style="list-style-type: none"> • Jonatha & The Story Brooke. <i>Plumb</i>, Blue Thumb Records. 1995 • Calexico. <i>Feast of Wire</i>, Quarterstick. 2003 • Wendy Carlos. <i>Switched-On Bach</i>, Columbia. 1968 • The Cars. <i>The Cars</i>, Elektra. 1978
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For Complete List Visit [http://\(omitted\)](http://(omitted))

Figure 2. Recordings of technical or production relevance.

A few of recordings identified as having made a lasting impact on recording techniques are shown in figure 3. In general, in significance area three the experts were focused on the advancements of multi-track tape and analogue techniques. They discussed the lasting impact of albums recorded between the mid to late 1960s. Little to no mention of digital or even current streaming and compressed techniques were made.

- THE EARS DATABASE -
(Excerpt)
Significance Area Three
 "Lasting Impact on Recording Technique"

<ul style="list-style-type: none"> • AC/DC. <i>Back In Black</i>, Atco. 1980 • The Band. <i>The Band</i>, Capitol. 1969 • The Beach Boys. <i>Pet Sounds</i>, Capitol. 1966 • Beastie Boys. <i>Licensed to Ill</i>, Def Jam. 1986 	<ul style="list-style-type: none"> • The Beatles. <i>Sgt. Pepper's Lonely Hearts Club Band</i>, EMI. 1967 • Boston. <i>Boston</i>, Epic. 1976 • Jeff Buckley. <i>Grace</i>, Columbia. 1994 • Phil Collins. <i>Face Value</i>, Atlantic. 1981 	<ul style="list-style-type: none"> • Miles Davis. <i>Bitches Brew</i>, Legacy. 1970 • Drivin' N' Cryin'. <i>Whisper Tames the Lion</i>, Island. 1987 • Bill Evans. <i>Conversations With Myself</i>, Verve. 1963 • Peter Gabriel. <i>So</i>, Real World Records. 1986
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For Complete List Visit [http://\(omitted\)](http://(omitted))

Figure 3. Recordings of lasting impact on recording technique.

A few of the recordings identified as marking a change in the industry are shown in figure 4. In significance area four, many of the experts cited the dawn of multi-track tape recording as a catalyst for change in the industry. Other responses were linked to stylistic or musical changes. These responses included groups from the 1970s and their impact on the ‘hair metal’ movement of the 1980s, the birth of grunge and it’s supplanting of highly-produced hair metal in popular culture, and progressive bands of the 1990s who influenced contemporary alternative rock.

- THE EARS DATABASE -
(Excerpt)
 Significance Area Four
 “Marked Change in Business or Industry”

<ul style="list-style-type: none"> • Herb & the Tijuana Brass Albert. <i>Whipped Cream and Other Delights</i>, A&M. 1965 • The Beatles. <i>Sgt. Pepper’s Lonely Hearts Club Band</i>, EMI. 1967 	<ul style="list-style-type: none"> • Chuck Berry. <i>After School Session</i>, Chess. 1957 • Cleveland Symphonic Winds. <i>Holst: Suite No.1 & 2 / Handel: Music for the Royal Fireworks / Bach: Fantasia in G</i>, Telarc. 1990 	<ul style="list-style-type: none"> • Eagles. <i>Hotel California</i>, Elektra. 1976 • Fleetwood Mac. <i>Tusk</i>, Warner Bros.. 1979 • Michael Jackson. <i>Off The Wall</i>, Epic. 1979
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For Complete List Visit [http://\(omitted\)](http://(omitted))

Figure 4. Recordings that marked a change in the industry.

A few of the recordings identified as great performances are shown in figure 5. In significance area five, the experts reported live recordings in which the technical aspects were matched by incredible performances. A few, however, indicated studio recordings of great performances in spite of lackluster production and/or technical quality. This category saw the largest influx of jazz and classical responses.

- THE EARS DATABASE -
(Excerpt)
 Significance Area Five
 “Great Performance”

<ul style="list-style-type: none"> • Chet & Paul Atkins. <i>Chester & Lester</i>, RCA. 1977 • Atlanta Symphony. <i>Vaughan Williams: Symphony No. 5/Fantasia On A Theme By Thomas Tallis/Serenade To Music</i>, Telarc. 2007 • The Band. <i>Rock of Ages</i>, Capitol. 1972 	<ul style="list-style-type: none"> • The Beach Boys. <i>Pet Sounds</i>, Capitol. 1966 • Charles Bradley. <i>Victim of Love</i>, Daptone. 2013 • James Brown. <i>Live at the Apollo</i>, Polydor. 1963 • Dave Brubeck. <i>The Dave Brubeck Quartet at Carnegie Hall</i>, Legacy. 1963 	<ul style="list-style-type: none"> • Pablo Casals. <i>J.S. Bach: Six Suites for Solo Cello</i>, EMI. 1936-193 • Chaka Khan. <i>I Feel for You</i>, Warner Bros.. 1984 • John Coltrane. <i>A Love Supreme</i>, Impulse!. 1965
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For Complete List Visit [http://\(omitted\)](http://(omitted))

Figure 5. Recordings of great performances.

When analyzing the expert responses for frequencies, there were a few albums that stood as outliers: albums that most engineers agreed were significant. The most reported recordings are shown in table 1. These recordings were ranked regardless of area of significance, or reason for having been chosen. The most reported recordings were mainly entire albums either in the rock or pop genre and spanned from the mid-1960s to the early 1990s. The only single song reported was Les Paul’s “How High the Moon” for its pioneering multi-track analog recording.

Table 1. Top reported recordings.

Artist/Band	Album/Song	n=22	%
The Beatles	<i>Sgt. Peppers Lonely Hearts Club Band</i>	8	40%
Steely Dan	<i>Aja</i>	6	30%
Miles Davis	<i>Kind Of Blue</i>	5	25%
Nirvana	<i>Nevermind</i>	5	25%
The Beach Boys	<i>Pet Sounds</i>	4	20%
Michael Jackson	<i>Thriller</i>	4	20%
Les Paul	“How High the Moon”	4	20%
AC/DC	<i>Back in Black</i>	3	15%
Peter Gabriel	<i>So</i>	3	15%
Tom Petty	<i>Wildflowers</i>	3	15%
U2	<i>Joshua Tree</i>	3	15%

Note: songs titles are in quotations where as full albums are italicized.

Observations

When looking at the entries from a holistic perspective, the recordings identified were pop and rock focused. Specifically, they were pop and rock recordings made and released in the United States, Canada, and the United Kingdom. Although there were jazz and classical recordings, and the recordings identified spanned the late 1940s to the 1990s, a timeline for the history of Rock and Roll emerged. The responses showed a cause and effect of particular recordings, artists, producers, technology and, their effect on rock and popular music. Many experts indicated that the work of Robert Johnson had a major artistic impact on Chuck Berry, Jerry Lee Lewis, and Elvis as shown in figure 6. The experts also identified that the multi-track recording techniques of Phil Spector, the Beatles, and the Beach Boys influenced the production techniques of the 1970s. The experts claimed that the experiments of the 1970s lead to standardized production techniques in the 1980s and corresponded to the anti-production

movement of the early 1990s and the digital and home recording boom of the late 1990s and 2000s.

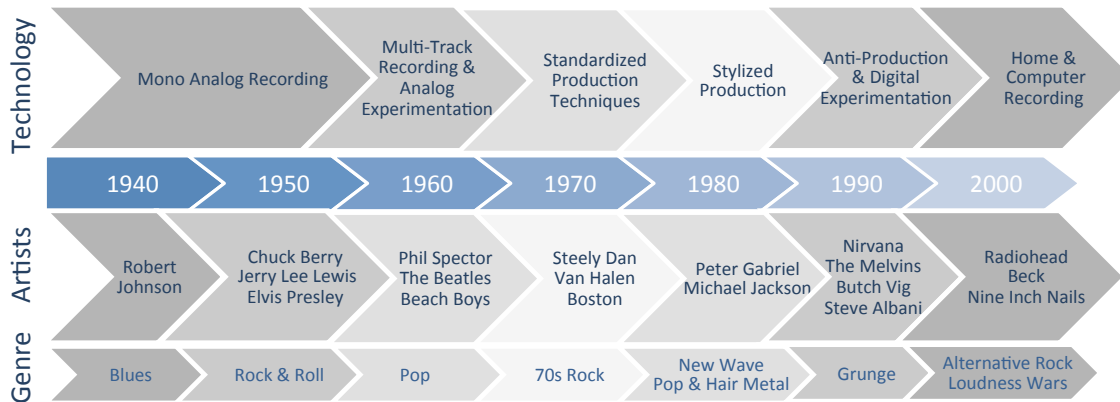


Figure 6. Holistic timeline of expert identified recordings, engineers, artists, and technological advancements.

The pop and rock focus of these responses was most likely the causality of the rather limited demographic interviewed so far. Most experts were members of the Leading-Edge Baby Boomer generation, lived and worked in large cities, and were white males. Socially, the civil rights movement, Vietnam, cultural upheaval, and the use of psychedelics were a significant part of this generation’s experience (Owram 1997). The music of that time, 1960-1975, was closely linked to these experiences. Therefore, the recordings were the seminal recordings of this era’s technical experimentation and standardization and were reflective of social and popular culture of this time period. Though their perspectives are important, EARS strives to collect more perspectives and focus on additional genre.

Recommendations

As the EARS database grows, the need for a more balanced sample of expert engineers is vital. EARS must include minority and international perspectives and focus on music other than popular and rock. A rich and diverse pool of recordings could be achieved by pairing the EARS database with a larger organization that has relationships and access to these experts.

Once this rich list of recordings is compiled in the database, it must be determined how to organize and display this information for educational institutions and students. Issues including format, structure, integration, and access must be addressed. The database could be in an online format structured as a standard website and be accessible in class via university servers.

However, paramount is organizing and displaying this information to be most effective for student and academic institutions.

Conclusion

EARS is an ongoing database of recordings identified by experts as essential for students and aspiring engineers to know. As EARS grows it strives to collect recommendations from industry experts representing a diverse musical and social background. Ultimately, determining how to best integrate these recordings into music and engineering curricula is an important next step. This integration should focus on how and where educators and students use the database. EARS aims to provide students and Recording Industry programs with recordings deemed as exemplary from practitioners working in the entertainment industry. The next generation of great recordings from aspiring engineers lies in the great recordings of the past.

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