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Review of "Beat Box: A Drum Machine Obsession"

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Beat Box: A Drum Machine Obsession by Joe Mansfield, Get On Down, 2013

When Wurlitzer released the first commercially available drum machine, the Side Man, in 1959, the famed organ company was attempting to fulfill a modest need: rhythmic accompaniment for the organist or musical combo at times when employing a drummer was not practical. The print advertisement for the Side Man showed a quartet featuring an accordionist, guitarist, organist, and an attractive piece of furniture about the size of a hi-fi. Inside its wooden exterior, the Side Man relied on vacuum tubes and a motor driven wheel with electrical contact points to generate its sounds. There were ten preset rhythms, such as Rhumba, Waltz, Bolero, Cha Cha, and Beguine, and the tempo could be varied by adjusting the speed at which the wheel rotated. In addition, each drum sound had a corresponding button that could be used to trigger that sound. Some at the time worried that the device would put drummers out of work. But despite its innovative design, the engineers at Wurlitzer could not have imagined that this device would be the wellspring of rap/hip-hop, electronic music, and mainstream pop as those broad musical categories have developed since the 1970s.

In *Beat Box: A Drum Machine Obsession*, hip-hop producer and drum machine collector Joe Mansfield presents 75 drum machines from his private collection. This coffee table book features beautiful photographs by Gary Land and images from original drum machine ads and manuals. It includes Mansfield's descriptions of each drum machine, interviews with drum machine designer David Linn, hip-hop DJ/Producer Davy DMX and others, notes on some of Mansfield's favorite beat boxes, and a list of some of the most famous hits to use the drum machines featured in the book. The cover art, layout, and internal photographs are all stylishly presented. Mansfield provides concise but interesting descriptions of each machine, including details about each machine's features and importance. It is not an exhaustive survey of all drum machines. Nor is it a history of drum machines and the musical genres in which they are used. There is no narrative beyond Mansfield's notes on each drum machine, and there is no overarching theme or argument. Rather, *Beat Box* is very much like a trip to a museum curated by Mansfield, in which he displays in roughly chronological order the most significant beat boxes with enough commentary about each to give the reader a good sense of how drum machines developed technologically from the 1960s to the 1990s and how they influenced the direction of popular music.

Following the Wurlitzer Side Man, a number of similar machines were produced in the 1960s and early 1970s: the Vox Percussion King, the Maestro Rhythm King MRK-2, the Nomad Rhythm Maker 12, the Ace Tone Rhythm Ace FR-1, the Seeburg Select-A-Rhythm, to name a few. Although they developed from tube-based electromechanical devices into transistor-based devices, they almost uniformly followed the same basic design of the Side Man. They typically had about ten or twelve preset rhythms, such as swing, rock, waltz, or bossa nova, as well as the ability to control volume and tempo. Some, like the Side Man, had individual buttons for each sound – though this was not the norm. In other words, the drum machines of the late 1950s to the early 1970s were primarily rhythm playback machines with very limited opportunity for the musician to manipulate the sound of each drum or the rhythm played and no ability to program user-created



rhythms. As a result, while drum machines of that era might have had some appeal to church organists or small-time gigging musicians, they saw limited use in recorded music of the 1960s and early 1970s. They were essentially a cheap imitation of a real drummer.

In *How Music Works*, David Byrne describes how technology drove musical styles in the 20th century, which in turn drove technology. Modern popular music developed in a kind of feedback loop between live performance, new modes of recording, advances in amplification, and new instrument designs. For example, the development of recording technology enabled the capturing of live performances on record. While performers had once been free to adapt their performances over time, audiences began to expect that the live performance would sound like the record and so performers began to tailor their performances accordingly. Similarly, advances in guitar amplification that were designed to enable guitarists to be heard in big bands playing jazz and swing music instead fueled the development of more aggressive sounds in 50s rock & roll and later 60s and 70s rock. This in turn created demand for additional advances in guitar amplification.

In the case of drum machines, this feedback loop was slow to develop. Mansfield puts forth Sly and the Family Stone's 1971 album *There's A Riot Goin' On* – and particularly the song “Family Affair” – as one of the first examples of a successful recording artist using a drum machine, in this case the Maestro Rhythm King MRK-2 with its typical 1960s design of preset rhythms and minimal user control. The record helped popularize drum machines in the funk genre, although the band did not use the Rhythm King in a way that would have been entirely unexpected to the unit's designers. Three years later, however, pioneering German electronic group Kraftwerk released its seminal 1974 album *Autobahn*. The record is essentially a symphony of synthesizers with drums courtesy of the Vox Percussion King. The Percussion King had foot pedals to trigger the kick drum and the hi-hat cymbals, but Kraftwerk replaced the foot pedals with metal plates that could be triggered by hand. The resulting work was a blend of popular music and symphonic music played in a robotic, machine-like way. *Autobahn* is a transformative moment. Drum machines had developed with the goal of mimicking live drummers by using predetermined rhythm patterns programmed with a human feel. Kraftwerk recognized and exploited what could be seen as an inherent failing in drum machines– their potential to sound monotonous, robotic, and in-human. They were able to use the drum machine to evoke the feeling of a world that by the 1970s had become dominated by machines. In addition, by modifying the Percussion King, Kraftwerk pushed back against the Vox engineers' assumptions about how the machine could be used.

Throughout the 1970s, drum machine technology improved and began to advance beyond the simple preset rhythm designs of the 1960s. By the late 70s, a number of manufacturers, most notably Roland Corporation, introduced increasingly greater control for musicians over the volume, tone, and pitch of each drum sound and added the ability to program rhythms that could be stored in the unit. Although quite limited at first, these features enabled musicians to make their own beats, which made drum machines far more desirable from a creative standpoint. By the early 1980s, drum machines had “arrived” from a technological standpoint. Units like the Linn LM-1 Drum Computer, the LinnDrum, the Roland TR-808, the Roland TR-909, and the Oberheim DMX became the staples of 80s rap, pop, and electronic music. Artists found that



drum machines could be programmed to play in ways that drummers generally could not, in particularly in a highly repetitive and robotic way. Coupled with similar advances in synthesizers and the advent of computer sequencers, the era became dominated by a musical aesthetic that was at odds with the blues-based rock of the 1960s and 70s with its focus on guitar, bass, and drums played by highly-skilled live musicians.

But even as the drum machine began to dominate popular music in the early 80s, the tension between designers and musicians remained. The *Beat Box* interview with Roger Linn, designer of the Linn LM-1 Drum Computer, the LinnDrum, and the Linn 9000, is instructive. According to Linn, "The first big hit that used the LM-1 as the drum part was Human League's "Don't You Want Me" in 1981. It was very gratifying to hear it on the radio. However, I was displeased that they programmed a very rigid, robotic part, not using the product's programmable dynamics or swing. Those were features that I had worked very hard to create and which enabled the creation of drum parts with a natural, human feel." Despite his misgivings, Linn's drum machines helped fuel a revolution in musical style. The sound of 80s pop relied heavily on Linn's drum machines, which laid down the beat for huge hits by Prince, Madonna, Peter Gabriel, and others. Simultaneously, rap and hip-hop exploded into one of the dominant genres in popular music, with acts like Grandmaster Flash and Furious Five, Run-D.M.C., Public Enemy, Dr. Dre, and Snoop Dog driven by the relentless beats of Roland TR-808, Roland TR-909, and Oberheim DMX drum machines. Electronic music, too, developed out of the merger of Kraftwerk's electro-robotic sound, the dance orientation of disco, and the technical capabilities of drum machines to become a wildly diverse genre of music, with DJs and producers like Paul Oakenfold, Fatboy Slim, and David Guetta and bands like New Order, Depeche Mode, Front 242, Massive Attack, and LCD Soundsystem all relying heavily on the drum machine as the foundation of their sound.

Beat Box: A Drum Machine Obsession is a highly entertaining way to begin to explore the drum machine and its role in the last half century of music and popular culture.

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References

Byrne, David, *How Music Works*, McSweeney's (2012).