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British Rock Roadies: Doing sound in the late 1960s

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Abstract

The British live sound industry saw an unprecedented economic and technological boom in the early 1970s. This article argues that a few years prior to that, an equally important shift in live sound occurred, one that involved the appearance of a new actor in the music industry: the roadie. Drawing on archival research and semi-structured interviews with British road crews active in the late 1960s, this article focuses on their practices and puts roadies at the centre of live sound development. It begins with a brief historical contextualization of British live sound in the late 1960s. It then explains roadies' current involvement in the music industry, followed by a description of the genesis of this profession. Third, it focuses on sound-oriented roadies in the late 1960s and identifies key practices on the road, including knowledge exchange and creative uses of technology. I conclude with a few theoretical considerations about live music practices and rock history in general.

Key words: Live sound practices, roadies, live music, rock history, moving productions

Introduction

Fundamental changes in the British live sound industry occurred in the early 1970s. Amid such changes, companies such as Feldon Audio began importing components from US companies like JBL, creating a major shift in sound technology; venues such as the Sundown and the Rainbow Theaters were equipped with custom-built systems, pioneering a new era of venues with permanent gear that was capable of successfully amplifying rock acts; and England became a leader in mixing consoles manufacturing. In this article, I argue that along with these key economic and material changes, an equally important shift in live sound occurred a few years

prior. Rather than moving forward solely on the back of top-down technological innovations, the industry moved forward thanks to a new actor in the music industry: the roadie. By describing touring practices, this research pays critical attention to roadies and evaluates their role in live sound development in the late 1960s. Although live music is an increasingly busy area of research, scholarship on the technology and the practitioners involved in supporting touring performers has lagged behind. This article draws from groundwork covered in previous research (Pisfil 2020c) to show some of the benefits of thinking about rock concerts as moving productions (see also Davis 2021; Kielich 2021).

The information gathered in this article is based on magazines such as *Melody Maker* and *New Musical Express,* as well as newspaper articles covering the live music industry. The core of the findings, however, come from Roadies' autobiographies, and, more importantly, interviews conducted with British roadies active in the late 1960s. Informants were chosen not because the described themselves as roadies, but because they were involved with live sound. Significantly, this article is the product of a broader research project that involved identifying key players in live sound history between 1967 and 1973. Through process, it became apparent that British audio innovators in the late 1960s shared a distinctive characteristic: the vast majority were members of a music touring community that, at least in those days, identified as roadies.

The article begins with a brief historical contextualization of British live sound in the late 1960s. Then it turns to reflect on roadies' current involvement in the music industry and assesses the pertinence of using that term, followed by a description of the genesis of this profession in the late 1960s. Third, it focuses on sound-oriented roadies in the late 1960s and identifies key practices on the road, including knowledge exchange and creative uses of technology. The article concludes with a few theoretical considerations about live music practices and rock history in general.

Short History of Live Sound in the UK

I use the term "live sound" to refer to the technologies and practices used during live performances to amplify the sound of musicians onstage for a given audience. In one sense, the sound produced by backline equipment (the technology that musicians manipulate themselves, i.e. bass and guitar amplifiers, drum kits, keyboards, etc.) is also constitutive of the sound that a band produces, but this is not spread uniformly or loudly enough to all members of an audience. Live sound, when it is operated appropriately, should do just that. Other terms that are frequently used for a live sound system are "sound reinforcement" and "P.A. system" or simply "P.A." (see Duncan 2002). These initials stand for "Public Address" and they serve as an important reminder of the central role that the audience plays when reflecting on this technology. This terminology can, however, be a bit misleading because of the traditional role that public address played in the early 20th Century. My research (Pisfil 2019) shows, for example,

that throughout the 1960s, actors within the live music industries still used the term "P.A." to mainly refer to vocal amplification; it was only at the end of the 1960s that the phrase "P.A." started to acquire its contemporary meaning as a synonym for a live sound system. A study of live sound in this period needs to take into account these issues to avoid confusion.

Live sound in the early 1960s was not designed to deal with the itinerant aspect of rock bands, nor did it have sufficient power capabilities to cope with the sonic requirements of the music (see Kane 2020; Pisfil 2019). Indeed, many rock guitarists used loudness as an important aesthetic feature. Many examples, including the early history of bands like The Jimi Hendrix Experience or The Who can be cited to illustrate this. As Seabury and Shaar Murray state, "if the '50s as a decade belonged to the guitar designers, the '60s (especially in Britain) belonged to the amplifier designers and effect unit manufacturers" (2002). In this context, P.A.s (i.e. voice amplification systems) started to be less and less audible and, at least from a technical perspective, this became one of the first steps towards sound innovation. Dave Hartstone (2017), musician and one of the earliest live sound entrepreneurs catering for popular music acts in the UK, remembers:

> […] at this time, you couldn't hear any singing in rock groups, just a bit of guitar and a lot of drums but people got used to it and figured that's the way rock groups are. A lot of people don't understand this progression.

Stage equipment was loud because in those days rock bands played mostly in clubs and small venues. A P.A. system's main objective was to reach those same pressure levels for the voice to be heard. When that was achieved, the next step was to start thinking about the overall sound as a unified entity. At this time, by the turn of the decade, the term "P.A" began losing its previous association with voice amplification and started to be employed to make reference to live sound.

In the US, live sound improved rapidly in the 1960s, thanks to a number of factors that coalesced in the latter half of the decade, including the success of early festival sound innovators like Bill Hanley on the East Coast (Kane 2020), the efforts of individual bands that collabourated with regional sound companies - embodied by the initiation in 1966 of a decades long relationship between the Grateful Dead and the blossoming San Francisco Bay Area technology community (Reeder, 2014), and the efforts of promoters to make venues such as the Fillmore West, the Avalon Ballroom and the Fillmore East become sites for sound experimentation (Pisfil 2019). Another important factor was the presence of highly competitive sound companies spread around the US that quickly specialized in touring rock bands (Pisfil 2020a: 179-180). Things were very different in the UK. First of all, venues with dedicated crews handling live sound only appeared in the early 1970s (Pisfil, 2020b). Secondly, although there were many sound companies operating in Britain in the 1960s (Collison 2008), none of them ventured into the rock industry. In fact, unlike the US, in the UK there is almost a complete disconnection of concert sound in the late 1960s, embodied by the company Watkins Electric Music (WEM), from previous sound reinforcement practices.

If US live sound development can be loosely traced back to the mid-1960s, when the Beatles played in stadium shows around the country (Dahlie et al. 2021, Kane 2020), in the UK 1967 marks a determinative shift in concert sound history. That year, WEM presented their sound system at the 7th National Blues and Jazz festival, held in Windsor on August 11-13. I use the word "presented" because Charlie Watkins, co-owner of the company and one of the visionaries behind the constitution of the WEM sound system, was well aware that this festival was the perfect occasion to gain visibility in the popular music community. Between 1967 and 1970 WEM became the main P.A. supplier for British rock bands. Not only did this company supply all outdoor music gatherings such as the 1968 and 1969 Hyde Park concerts and the Isle of Wight Festivals in 1969 and 1970, but high-profile bands such as Pink Floyd, Fleetwood Mac and The Who also toured with this technology.

WEM marks an important shift in British live sound practices because it was a company that took rock music seriously and recognized the complexities of touring. After being closely linked to radio, film, and theater technology for about four decades, the foundations of sound reinforcement were, for the first time, set around the needs of popular music. WEM equipment designers Norman Sergeant and Jim Burke understood, for example, the importance of reliability and loudness, and they manufactured systems to meet those expectations. I have described the company's technological innovations I detail elsewhere (Pisfil 2018), but here I would like to highlight two that will help contextualize some of the arguments made in the next section. Before 1967, most amplifiers used heavy, fragile valve technology that made equipment difficult to transport. WEM's 100-watt solid state amplifiers were in this respect a meaningful step forward. They were not only more trustworthy and more practical to take on the road but they also had a significant advantage: unlike previous technologies, WEM amplifiers could be chained together to augment power output in unprecedented ways. The sound system at the Windsor festival, for example, generated 1,000 watts of power, which was, in all respects, unheard of at the time. Another key development was a 5-channel mic mix called WEM Audiomaster, that could also be connected to other Audiomasters in order to augment channels and gain more control of the overall mix.[1] But technology only partly explains live sound innovation in the late 1960s. At the heart of sound development were road crews that transported, operated, and soon mastered the use of this equipment. It is therefore of no surprise to read comments like the one Charlie Watkins himself made about roadies back in 1970: "These boys [roadies] know so much about amplification that they make me feel like a novice" (quoted in Hayes 1970). Let's now turn to examine how important was the role of roadies in the initial years of sound development.

In the Beginning was the Roadie

Before describing the historical importance of British roadies, some preliminary defining efforts need to be made to clarify the type of activities associated with their

work. As the *Continuum Encyclopedia of Popular Music of the World* corroborates, roadies are recognized figures in the popular music industry (Weinstein 2003). Professional touring musicians have acknowledged the importance of their work for decades and they have even been in the spotlight in films like *Roadie* (Rudolph 1980) and more recently in the television series *Roadies* (Crowe 2016). Roadies have also written extensively about their work, giving us clues about backstage stories of the rock industry (Wright 2009), everyday life on the road (Douglas 2022, Miller 2020), or about different career paths within the industry (Murphy 2020). Despite this, roadies have rarely been examined in popular music studies. One important exception is the work of Gabrielle Kielich (2021) who has recently made a thorough analysis of the profession, and whose work I will mention in the last section of this article.

If we were to find a defining feature of roadies, it would be that of facilitating touring within the music industry. What is central and what is peripheric in that definition depends on each experience. Sometimes, the accent is put on the itinerant aspect of working on tour (Prophet 2010:11). Other times, the accent is put on the close relationship with a band (McGinn 2010). The different jobs that have been historically associated with the term involve managing roles (e.g. tour or road manager), technical issues (audio, staging and lighting engineering, for example), and hospitality roles such as catering (see Kielich 2021). In the contemporary touring industry the generic word "roadie" is barely used anymore as an occupational identifier, and road crews are called (and preferred to be called) in regard to their specific job position. For that reason, and this is also foregrounded in Kielich's research (2020), the term "roadie" nowadays can be at best confusing and at worst misleading. Indeed, in the early days of rock touring it was plagued with stories of sexism, even in bands that foregrounded progressive values like the Grateful Dead (see Pisfil 2020a). Roadies' practices have also been commonly associated with drug abuse, partying and sleep deprivation, further nourishing the stereotype of murky and unhealthy characters on the road. Working in 2010, Australian road manager Sophie Kirov comments:

> Mind you, some days I don't know when I've last showered or washed my clothes, so there's still a very filthy, dirty element to it, but I think the word roadie comes with some of those traditional stereotypical connotations as opposed to what happens in the contemporary world (cited in Coupe 2018, 285).

To avoid being linked with any of those stereotypes, Matt McGinn, long time roadie for Coldplay, explains that "some roadies refuse to admit they're even 'roadies' at all, and call themselves something else, like 'technician', or its abbreviated form 'tech'" (2010: 52). The dismissal of the term "roadie" is not only related to past connotations of the term but, one may argue following McGinn's explanation, because there are now highly specialized jobs that relate to work on the road. But the division of labour, and the consequent specialization of tasks, only partly explains this phenomenon. Indeed, expertise in specific tasks was the effect of the new scale of rock touring in the early 1970 (see Frith et al. 2015). However, the characterization of labour on tours was generalized as the work of roadies still in the 1990s (Willmott 1997). It is arguably the professionalization of road crews, a

result of a more profound economic change in the music sector in the late 2000s, that rendered the concept "roadie" irrelevant or at least outdated. In Britain, the professionalization of work on the road relates to the creation of a National Skills Academy for the live entertainment industry, involving forty Further Education Colleges around the country (Frith et al. 2021). This allowed a member of a road crew to acquire a formal occupational status such as lightening technician or live sound engineer. In this context, the category "roadie" became gradually outdated precisely because it was typically associated with informal and diversified labour.

Indeed, the term "roadie" became established with the rock industry that flourished in the late 1960s. Although they were visible actors in the popular music industry through the 1960s, it was not till the end of the decade that roadies became recognized figures in the rock industry with clearly defined responsibilities. This was not the case even by 1966 when Ben Palmer was hired to assist the British band Cream with their first gig at the Twisted Wheel in Manchester. Lead guitarist Eric Clapton tells the story: "I remember Ben being horrified when we arrived to find out that the word 'roadie' did not just mean driver and that he was expected to lug all our equipment around." (2008: 81). By the end of the decade, magazines like *Melody Maker* constantly included articles about road crews and it even became common to find the term "roadies" in classified ads. By the early 1970s, they played such an important role in the live music industry that bands such as Emerson Lake and Palmer (ELP) had 27 roadies working on tours. In the words of the band's drummer Carl Palmer "The road crew is so big, we even have a roadie to wake up the roadies" (quoted in Welch 1973).

For rock music, the main reason for additional labourers in the music industry was to carry and transport equipment around. Besides the increasingly heavy guitar and bass amplifiers, Hammond organs started to make their appearance in the British scene. Transporting these weighty organs around was such a typical task in the 1960s, that it could easily become the criteria by which a roadie decided whether or not to work for one band or another. Erick Brooks's decision between working for The Nice or Jethro Tull was, for example, reduced to that choice:

> When the Nice gig was described to me, it was noted that Keith Emerson was currently carrying around two complete Hammond organ set ups (including the accompanying Leslie speaker cabinets) as part of his onstage keyboard equipment. Having so recently lugged Brian Auger's Hammond rig back and forth across Europe for 2+ years, I was not exactly keen to take on a job that would instantly mean doubling that already arduous workload. I opted for Jethro Tull instead: the prospect of transporting a small flute seemed to be a much better proposition! (Brooks 2021: 91).

Besides loading and unloading equipment, being a roadie in the late 1960s also meant being behind the wheel. As a matter of fact, when roadie jobs were advertised in *Melody Maker*, their services were always placed under the heading "Transport" of the Classified Advertisement section. Very often, having a driving license was the only requirement to become part of a road crew and owning a van guaranteed someone a job in the music industry. That was how Michael Tait, for instance, got a job with progressive rock band Yes: "None of them could drive the van, so the manager said: 'could you drive the van for

them?' and I said 'sure' […] It ended up to be 15 years" (2016). The typical van in the late 1960s was a Ford Transit, designed in 1965 and, at least in the UK, bands would be easily recognizable by the colour of their vans. Bedford vans were probably the second most popular vehicle and, for crews that were lucky enough, Mercedes vans were also part of the touring landscape.

Because this was initially a one-man job, roadies instinctively and progressively started to take care of any technical issues bands may have had onstage. In the emerging live music industry, however, their presence was not always welcome. Peter Webber, for instance, road manager for the Nashville Teens in the mid 1960s, remembers a tour in Hungary where flight tickets were only given to those that were part of the band (Webber 2016). In those years promoters would only identify someone as being "part of the band" if they participated in the performance. As it happens, Webber found himself playing the tambourine for 2 hours a night.

As bands acquired bigger and heavier equipment, and as technology onstage became more complex, the need for more roadies became apparent. For a live music industry that was barely starting to understand concert practices, increasing the number of roadies meant complicating the logistics of touring. For example, the Who's soundman and road manager, Bobby Pridden, remembers: "when we arrived at gigs, sometimes some of the promoters argued with me and made me pay for the third roadie to come in. He thought I was getting an extra person, bringing in for free" (2017b). The division and specialization of labour that progressively occurred in the late 1960s optimized equipment handling and allowed better planning. It was also a step forward of the life quality of road crews. As has been suggested in the previous examples, roles such as "road manager" were among the first to appear, and others rapidly followed. When someone became specifically responsible for operating the mic mixer, the "soundman" or "sound guy", with its strong gender biased connotations, appeared.

In the US, the division of roadies' labour quickly transformed into a hierarchization of their work. As such, the appearance of the FoH engineer, whose only task was to mix a concert, can be identified already in the late 1960s.[i] In the UK, it took longer for this type of hierarchy to the place. For example, Phil Dudderidge was still considered "another roadie" when he entered the Led Zeppelin entourage in 1970 to take care of the sound system. He remembers: "Back then, there was no particular glory at looking after the P.A. It wasn't regarded as being superior to looking after the guitars or looking after the guitarist" (2016). Dinky Dawson (2016), Fleetwood Mac's main roadie, expands upon this idea

> They are both the same. The live sound engineer was really a roadie, because every single one had to move equipment […] So in that time period you were still a roadie. You were still driving the truck, you were still setting up the equipment.

Roadies' competence in the field of live audio was so manifest that when *Melody Maker* dedicated 4 pages to discuss sound techniques, Barrington Marsh-Ward, described as a "top roadie", was called to provide an expert opinion on the subject (Charlesworth 1971). As will be shown below, roadies were not only knowledgeable about audio but, especially in the UK, were key figures in the development of the live sound industry.

Sound Practices on the Road

As we mentioned earlier, U.S. sound businesses developed highly competitive strategies towards other companies from a very early stage. This was not the case in the UK because WEM was the only company that served bands on tour in the late 1960s. If there was any sense of rivalry within live sound users, it would have been between bands. However, bands' roadies, the ones in charge of purchasing and handling sound equipment, often worked cooperatively. Bobby Pridden (2017a) illustrates this quite well: "[I was] always interested in what was going on. And ready to share. Somebody would ask a question about what we used and I'd tell them. There was no big secret". Far from this being an isolated example, British roadies' openness about their craft can be explained by the numerous places in which they frequently crossed paths, frequently exchanging knowledge as part of their everyday life. In the late sixties, rock bands touring north of London would use the recently opened M1 motorway, the highway that accommodated the Blue Boar. Situated between junction 16 and 17, seventy-five miles from London, this was the first motorway service area ("rest area" in the US) on the M1, and sheltered all travelers on their way out from and way back to the capital. Touring crews were no exception and it therefore became a site where the rock community regularly met and shared their experiences on the road. Another common place to get together was at WEM's warehouse. WEM's monopoly in supplying loud PA systems meant that any equipment that needed repair was taken into WEM's factory. Bands would usually prepare to go on tour on Fridays around 6pm, so that became a typical instance when roadies met. Charlie Watkins was always welcoming to road crews in this regard, so WEM's workshop became an ideal site to discuss technical aspects of sound or better ways to transport the equipment. For Phil Dudderidge (2016), Soft Machine's roadie at the time, Watkins made the factory "like a roadie's club".

Last but not least, it was also commonplace for unoccupied roadies to provide assistance to others at high-profile gigs. Dinky Dawson (1998:90), for example, recalls a Fleetwood Mac concert at the Royal Albert Hall:

> On large gigs like this, roadies who weren't working would help out just so they could see the show, so I had two friends who came along to assist – Chris Adamson, the best van or truck packer in the business, and Keith "The Snail" Robertson.[2]

Assisting fellow roadies at any concert was a great occasion to learn about others'

sound practices in situ. Festivals, however, provided the primary context in which knowledge exchange and collaborations occurred. During the 1969 Stones in the Park free concert at Hyde Park, for example, Watkins experienced first-hand the ethos that predominated in these setups. He remembers: "I didn't have all that many [WEM] columns, but I wanted to put 1500W up. I borrowed some from T-Rex. They all chipped in, that's what we used to do. It was quite a family; if anyone had a big gig, they'd all pool their gear" (quoted in James 2004). Charlie Watkins was also in charge of the overall sound production for the second and third Isle of Wight festivals. At the 1969 festival, WEM's sound system was once again insufficient and The Who's (WEM) equipment was used to save the show. Barrington Marsh-Ward (2017), a roadie for The Nice, also remembers lending parts of his band's WEM equipment to replace gear that had blown up. The sound at the festival was therefore supplied by WEM, The Who and The Nice. For the 1970 Isle of Wight festival, Watkins's trust in the informal industry practices that prevailed at that time remained intact. Besides his own sound system, the overall sound was provided by three bands (Foulk 2015: 172). The Who and Pink Floyd lent their equipment to assemble the massive pile of speakers on both sides of the stage. After the show had started, it became rapidly evident that the sound system was not going to be sufficient to provide sound for the more than half a million people that attended. To solve the issue, Rikki Farr, producer of the show, called upon ELP and set up their sound equipment on the lighting tower in the early hours of the morning of the second day of the festival (Farr 2017).

What could be described as a community-driven ethos at the heart of live music practices was also a sign of an unprepared concert industry. Lack of planning was a constant problem that both American and British festivals suffered from in the late 1960s. But production practices, at least in regard to live sound, were particularly inefficient at British festivals. As Barrington Marsh-Ward summarizes it,

> Half the times you get to these gigs and half of the stuff wasn't there […] they didn't think them out. They just thought: "well we'll get a pile of bands and, you know, the roadies will sort it out" (2017).

Roadies had such a protagonist role in shaping the industry that it is not surprising that one of the first times anyone in the industry took the responsibility for providing the complete sound equipment for a festival, the name of the company was "Abbey Roadies".[4] It was formed circa 1969 by experienced roadies such as Joe Browne and Phil Hearn in order to provide logistical assistance to bands on the road. Initially this meant only transporting and helping to set up gear in concerts, but favourable circumstances provided them with WEM equipment so they eventually started including sound services as well (Hearn, 2018). Roadies' first-hand involvement with sound makes them privileged sources to identify industry practices in the late 1960s. But their direct contact with technology is also key to understanding the practices that shaped sound on the road.

As we mentioned earlier, the 1967 Windsor Festival was a game-changing event in British live sound history, as it introduced WEM technology to the live music industry. By this time, roadies had already understood the importance of concert sound and focused on ways to improve it. A few months after that Windsor, a UK packaged tour was put together. Starting on 14 Nov 1967, it was headlined by Jimi

Hendrix and included acts such as Pink Floyd, The Move, The Nice, The Amen Corner, among others. Pink Floyd, one of the most innovative British bands regarding live sound, used this opportunity to tour with their recently acquired WEM equipment, and it did not go unnoticed. Barrington Marsh-Ward (2017), a roadie working for The Nice from 1967, remembers that episode:

> Everybody laughed at their system. And then of course we realized that we could control the sound because with the other stuff you just had an amp and a knob, but with the Audiomaster mixer you got more control over the things and you could make it louder.[3]

Gaining control of the sound was a major improvement for roadies that took the sound of their bands seriously. Their sensitivity to the presentation of the music made them, in all possible ways, attentive listeners. In the words of Tim Boyle (2017), Badfinger's roadie in 1970:

> We had no preconceptions […] On the other hand, we *listened*. The fact that you listen to something and you hear something that you are not familiar with, and you ask yourself "why does it do that? why does it sound like that? So we picked up […], we learned, we inquired, we were eager to learn.

The eagerness of roadies to improve the sonic concert experience, and to generally gain more control of the sounds being produced, eventually resulted in the practice of miking all of the instruments. Before 1967, P.A. systems were primarily used to amplify acoustic instruments and voices. As was common practice at the time, electric guitar and bass amplifiers were not close-miked and therefore, as was usual in those years, relied on themselves to be heard by audiences. Like many other practices, miking techniques were partly learned through touring. Dinky Dawson (2016) remembers: "I'm in America listening to this stuff and I'm saying "wow! They are amplifying everything. They are not just putting the [guitar and bass] amplifiers onstage, they are putting mics on this stuff. Wow! That's great!". Technologically, the possibility to have more inputs was afforded by the 5-input Altec 1567a, a mic mixer that allowed to link two or more of these devices in possibility to mike other sound sources besides the voice. In the UK, the WEM Audiomaster granted the same possibility and roadies did not hesitate to use it and started miking more instruments as well.

When more microphones were at the disposal of the sound person, an important way to gain even more control of the mix was to group (or buss) sound sources into distinct channels. This mechanism can be found in any mixing console today but in the late 1960s it was done through roadies' ingenious decisions. Mike Ferris (2017), roadie for the Rolling Stones in 1970, remembers:

> What we used to do is to stick about 5 mics on the drumkit. That would be one Audiomaster, and that Audiomaster would then go to the main Audiomaster. Then there would be other things around the place which would go into another Audiomaster. So they could balance things up on the original, and then mix it all into the main one, and have the sound balanced from there.

From the moment that every instrument, including guitar and bass amplifiers, was miked and the balance of all signals started to be controlled from a single source, the sound person exerted a much greater influence over what a concert sounded like to an audience. Amongst the many variables that were (and still are) essential to mixing sound at a concert, controlling volume levels was a priority. In a period when technology barely met roadies' expectations, making decisions about volume meant above all assessing the amount of power amplification needed for a gig, which was done partly by gaining an understanding of the requirements of the performance venue. Experienced roadies like John Thompson's learned the ability to "listen to the room", and although he could not make calculations with the amount of technical precision that technology affords today, Thompson could make decisions depending on the space where the performance took place. While always important, it was especially in big venues like the Albert Hall where that previous knowledge became a necessity. Thompson (2017) remembers: "Strange place the Albert Hall. You don't need too much sound. If it's too loud, it's not good. Just not good. 3000 watts, [that's] too loud. 800 watts or 1000 watts, that's ok". Today, live sound would rarely be measured in terms of watts, but Thompson's approach foregrounds practices that were only developed through touring. Producing sound on the road gave roadies the ability to develop personal but meaningful criteria to find solutions in overwhelmingly changing circumstances.

The ability to control volume also allowed roadies to experiment with the dynamics of concerts. Remembering the performance of The Crazy World of Arthur Brown at Windsor 1967, Charlie Watkins explains uses of volume as a creative force:

> There's a point in his big hit "Fire" where he [Arthur Brown] screams at the top of his voice, and I told John Thompson, ["]when that scream comes, throw it all in with full reverb["]. The best sound I ever heard in all the years I did PA was when that happened—I thought, this is how it should be! The crowd went mad (quoted in Peterson 2000).

At a time when live mixing was typically done in mono, volume control also gave the opportunity to explore spatial features of sound such as creating a stereo image of the music. Once again, it was roadies' creative practices that pushed this forward. Dinky Dawson, for example, would feed each side of the PA with a different mic mixer and then used volume knobs on each mixer to pan the sound at his discretion:

> This allowed me to send the sound of the guitar flying back and forth in a sweep from side to side, which soon became one of my trademarks. I loved seeing heads in the audience turn in surprise as they tried to follow the sound (1998: 89).

Besides volume, other ways to alter the experience of the audience was by adding sound effects to specific instruments. Roadies like Bobby Pridden (2017b), for example, used echo units in very distinctive ways:

> I added it to the guitar to give a bit more mystic sound. I added it where I

> thought it needed to go […] If it came in the wrong place and he [Pete Townshend] didn't like it, he'd let me know. But most of the time it was ok. It enhanced the sound and made it more excitable.

In all respects, sound control was used as a creative tool: Bobby Pridden sums it up quite eloquently: "I was playing a mixer, it was another instrument. It's an instinct […] Basically, that's what I had to do. And I learned from following them and watching them" (2017b). Interaction between roadies and musicians were not rare during performances. For instance, Led Zeppelin's lead vocalist Robert Plant would frequently ask the band's soundman, Phil Dudderidge to add more "presence" to his voice. This was a switch Charlie Watkins had installed in the Audiomaster to help boost the sound of specific frequencies. Many times, this knob was already turned all the way up, so Dudderidge could only pretend to turn it up, while giving Plant the thumps up. He remembers: "even though I could do nothing more than I was doing, [it was about] giving confidence to the artist just to [make him] feel [that], you know, 'Somebody is watching your back, and trying to do the best thing for you'" (2016). Whether providing real solutions or just pretending to do so, the roadies responsible for the sound became effectively part of the success of a performance. Their contribution to live sound development, however, goes beyond innovative practices on stage. My research also shows that roadies' practices and expectations also impacted the way equipment was designed. The development of mixing consoles is a case in point that connects to the emergence of the sound person as a creative figure. Peter Watts, Pink Floyd's roadie and soundman from 1967, for example, co-designed with Charlie Watkins a 20-input WEM console (Hewitt 2020: 81). Testimonies of British mixing console design pioneers in the early 1970s such as Chas Brooke (early Midas designer) and Graham Blyth (designer of the first Soundcraft consoles) manifest the importance of road crews' input in their designs. Allen and Heath founder Andy Bereza (2017) sums it up quite clearly: "Innovation came out of the intimacy between engineers and the roadies, and the musicians in this country". Because they were aware of the requirements of live production and had ideas of their own, sound-oriented roadies were key in the development of mixing consoles.

Making Sense of Technical Road Crews

The activities of British roadies in the late 1960s were diverse, ranging from driving vans, carrying, fixing and setting up equipment, to assisting fellow roadies, exchanging information, assessing venues, mixing shows, and providing input to improve technologies. The myriad contributions of roadies during this period make it difficult to credit them with any one particular leap forward or development in live sound history. After all, as Slaten (2018) has demonstrated by exploring the history of African-American jazz soundmen, live sound engineering is full of stories of labour transparency. It is important to take into account scholarship that challenges us to consider how the value we assign to the work of sound production personnel relates to broader judgements about when and where creativity and innovation occur.

Although not focused on roadies as an occupational identifier, Battentier and Kuipers (2020)[ii] have recently provided fertile ground to understand the work of

live sound technicians. Their research shows the shortcomings of concepts such as "support personnel" (Becker 1982), or the more recent term "cultural intermediaries" (Lizé 2016) to explain what sound technicians do in concerts. By their account, "technical intermediaries" is a more precise way to describe the work of sound technicians, as it acknowledges their involvement in shaping artworks and hence underlines creative aspects of their profession. Battentier and Kuipers' emphasis on human agency (downplaying the specific material constraints of each venue) accounts for the challenging scenarios in which touring takes place.

Gabrielle Kielich suggests a way to make sense of the value of the tasks performed by road crews (including, of course, those involved in live sound), which applies to both contemporary workers and to those operating within the initial years of professional rock production. Using Rita Felski's (1999) notion of the "everyday life", Kielich pays attention to the mundane activities that constitute the routine practices of live music. Instead of diminishing them as irrelevant to understanding issues of creativity and innovation, she argues that "everyday life is productive and constitutive of those moments" (2020: 17). Kielich's framework resonates with the periodic encounters of roadies at ordinary sites such as service areas or WEM's warehouse. Apart from providing the occasion to catch up with friends or enjoy a beer or cup of tea, these places were important to exchange information and ultimately improve sound practices on a regular basis.

Thinking about roadies' practices from a sociological perspective also encourages us to think about their place in the music industry. For example, Matt Brennan's (2015) model describes the live music industry as made up of a network of professional intermediaries such as promoter, agent, manager, artist, audience, and venue. Our focus on roadies and their practices on tour, however, makes evident the need to expand these useful classifications by making distinctions between different kinds of activities and roles that go into putting on a concert, such as logistics and transportation, staging, and production. Once these distinctions are made, it is easier to identify examples of friction or collaboration at different points in history. To consider technical work on the road, "production teams" is a category that helps illuminate the landscape of live music and its multiple ways of musicking, since it points to examples of innovation and creativity involving not only performers, but also roadies that at times had fluid roles. If my examples have been illustrative enough, live sound should be considered a rich domain of social and creative interactions that considerably affect concert practices. History shows, in fact, that roadies were at the heart of sound experimentations in the 1960s.

Conclusion

Researching popular music practices on the road sheds light on the numerous individuals that participate in music. More precisely, this article' focus on touring as moving productions has allowed us to examine roadies' practices and to identify their vital role in the early stages of the live sound industry. Edward R. Kealy once pointed out that it was only in the late 1960s that "[studio] sound mixers began aggressively asserting the aesthetic importance of their work." (1979: 217). While British roadies did not make the same claims in the sixties, a close look into their practices shows that they were experimenting with sound just as much as their studio counterparts.

Roadies' contribution to the rock industry and live music practices as a whole still needs more academic consideration. Technical crews ought to have a place in our reflections about music aesthetics, social roles and, of course, music history. In this respect, this article aligns itself with research on road crews that others have already started to undertake, by paying attention to their unique place in the history of rock concerts. As Paul Hoff, Frank Zappa's roadie from 1970, once said: "Without roadies, rock and roll simply wouldn't work" (quoted in Davis 1974: 35).

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Endnotes

1. In the late 1960s, terms like "mixing console" or "mixing desk" were still non-existent in the world of rock concerts.
2. Some paradigmatic examples include the Grateful Dead's crew and sound company Hanley Sound.
3. Robertson was given that nickname because he worked at a significantly slower pace that the rest of the crew (Dawson: 2023). The ability to set up equipment fast in a gig was a major asset in the production of concerts and it's probably the reason why any deviation from the norm would have been easily noticeable.
4. Similar cases occurred in the US. See, for instance, the history of Shawnee Sound (Holter 1973).
5. See above for a brief explanation of this device.
6. For a book-length analysis on this topic, see Battentier 2021.

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