TECHNOLOGY INNA RUB-A-DUB STYLE:
Technology and Dub in the Jamaican Sound System and Recording Studio

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ABSTRACT

This thesis attempts to chart the development of a Jamaican musical form known as *dub*. This development is considered primarily in terms of the island's encounter with a series of new playback, amplification, recording, and sound treatment technologies. Section I focuses on the formation of the Jamaican *sound system* (a network of powerful mobile discos) and its pivotal role in the birth of a fertile domestic record industry. Section II extends the investigation to the Jamaican recording studio and record industry. What distinguishes this work from others on Jamaican dub is its emphasis on technology, and theories of technology, within a geo-political framework. In Section I, this emphasis is most notably informed by the work of Harold Innis, Karl Marx and Lewis Mumford, with Marshall McLuhan and Walter Benjamin becoming more prominent in Section II. Key technologies in this analysis include mechanization (mechanical reproducibility), the Williamson amplification circuit, the *House of Joy* speaker, the *dub plate* (acetate phonograph) and vinyl record, twin-turntables and the microphone, the magnetic tape recorder, and perhaps most importantly, the multi-track recorder and interface (the multi-track mixing-board).

RÉSUMÉ

Le présent mémoire est une tentative pour établir le portrait de l'évolution d'une forme musicale jamaïcaine connue sous le nom de «dub». Cette évolution est principalement considérée à travers la rencontre de l'île et une série de nouvelles technologies comme celles de la présonorisation, de l'amplification, de l'enregistrement, et du traitement du son. La première partie du mémoire est concentré sur la formation du «sound system» jamaïcain (un réseau de discothèques puissantes et mobiles) et le rôle primordial qu'il a joué lors de la naissance d'une industrie locale du disque très fertile. La deuxième partie étend l'étude au studio d'enregistrement jamaïcain et l'industrie du disque. Ce qui distingue cette recherche d'autres sur le «dub» jamaïcain est l'accent mis — à l'intérieur d'un cadre géopolitique — dans la technologie et les théories sur les technologies. Cette insistance est alimentée, dans la première partie, par l'apport de Harold Innis, de Karl Marx et celui de Lewis Mumford. Toutefois, nous constatons que dans la deuxième partie du travail c'est plutôt l'apport de Marshall McLuhan et celui de Walter Benjamin qui deviennent plus importants. Les technologies clé de ce mémoire sont la mécanisation (reproduction mécanique), le circuit d'amplification de Williamson, le haut-parleur «House of Joy», le «dub plate» (phonographe), les disques en vinyle, des plaques tournantes doubles, le microphone, les enregistrements magnétiques, et probablement le plus important, l'enregistrement sur plusieurs pistes et interfaces (la console de mixage multipiste).

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My thesis has also been informed by informal discussion. Numerous people have been helpful in this regard, too many to mention, however I feel I should single out Jim Dooley and Chris Harper for their recommendations concerning the collection of material and data. The translation of the Abstract was carried out with the help of Jorge Frozzini. Finally, I would like to pay tribute to those practitioners and participants who would turn recorded music and multi-track technology upside down.

PREFACE

This thesis will attempt to explore the development of a musical form known as *dub*. This form is the result of a revolution in multi-track mixing technique. Rather than attempting to preserve the organic unity of a live performance, the multi-track studio becomes an instrument for tearing a composite recording into fragments. Fragments of the assembled performance erupt and vanish without warning; shuddering swells of degenerating echo often follow in the wake of their disappearance. By "playing" the multi-track mixing board interface, the thresholds of the individual tracks take on a deep form of expression, revealing the hidden worlds of the *dub-version*.

Dub-mixing techniques first began to emerge around 1967 in Jamaica, shortly after the introduction of multi-track capabilities to the island. By the end of the 1960s, dub-versions (or simply "versions", as they were then called) were appearing on the B-sides of most Jamaican singles (Barrow and Dalton 2001: 227). These mixing techniques developed out of the close relationship between Jamaican recording studios and the *sound system*[1]. Due to the mounting pressures of sound system competition, multi-track recording technologies were pushed into practices essentially antithetical to their designed function (i.e., flaunting the fragmented multi-track process of production rather than hiding it). The significance of these mixing practices is of central concern to this work.

Yet before focusing attention on such practices, I have outlined some of the circumstances which help to put these practices into perspective. I describe these circumstances in chronological fashion, beginning with the emergence of the sound system in Chapter One. The sound system form is found to grow largely out of the restrictive social relations of the 1940s and '50s. Access to live music, which was largely

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[1] The *sound system* can be provisionally understood as a system of competing, technologically "excessive", mobile discos. However, it should also be noted that defining the sound system as a form of disco is an anachronism (i.e., akin to describing "toasting", a Jamaican deejay style of lyrical accompaniment, as a form of rap). Discos also have a glittery association, as represented by the glimmering disco ball, that the early sound system certainly lacked. Sound system dances began appearing in basic form around Kingston in the 1940s, particularly following W.W.II (Barrow and Dalton 2001: 11; Stolzoff 2000: 38, 42; Katz 2003: 1) .

the domain of the upper echelons of society, is prohibited to the majority of the population. This prohibition forces the disenfranchised to turn to newly arrived playback technologies as an alternative source of musical entertainment. Imported U.S. rhythm and blues records become the initial model by which cultural autonomy of the working poor is asserted through the sound system. The encounter with a foreign medium and style thus enables the sound system to bypass the musical monopoly of the local elite. In the process, a powerful new force in Jamaican music is born.

The encounter with new communication technologies is a central theme throughout this thesis. Such technologies typically come integrated with larger patterns of organization. For example, in the first two chapters, I explore how the arrival of new technologies and musical styles is closely bound-up with routes established through military expansion and the postwar economic boom. I attempt to examine the formation of these networks and their importance to the development of the sound system and Jamaican record industry. In addition to aiding the spread of U.S. rhythm and blues records, these networks also exposed Jamaican sound system and recording pioneers to powerful new models of musical expression. These models include the deejayed block-parties of black Americans, witnessed by Jamaican seasonal migrant labourers[2] while working in the American south. Such networks also brought a proliferation of playback technologies, such as public address systems, which served as the first form of sound system amplification. Over the next few years, these rudimentary technologies were being improved upon by the local technologically adept. Skilled labour, returning from military service following the war, appears to play a significant role in these advances. Hedley Jones is an extremely interesting figure in this regard, and I spend some time discussing his innovation in amplifier technology, the "Williamson form" amplifier, in Chapter Two.

Associated with this notion of encounter is the idea of technology penetration as means of extending territorial control. For this reason, I explore the role of various media in extending control over populations, an

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[2] Such as sound system and recording mogul Clement "Coxsone" Dodd, whom I discuss in Chapter One.

area of study most notably pioneered by Harold Innis (1951). I take particular interest in Innis's notion of medium "rigidity" ("a medium disposition characterized by restricted access and limited interactivity") and attempt to apply it to the situation in Jamaica. I detect this pattern of inflexibility in numerous instances, from print and radio to record players and imported vinyl records. Equally important, I also discover many creative responses to these restrictions. The sound system itself, especially with the growing importance of the deejay, is a particularly striking example of such a response. Indeed, Innis is interested in how control breaks-down as much as he is in how it is maintained. Lopsided (i.e., imperialistic) expansion, via an inflexible medium, tends to invite competition from a less rigid medium.

According to Innis, infiltration and breakdown (via technological innovation and the vernacular) begin at the margins of empire, where exposure to the respective monopoly of knowledge is limited. Significantly, Jamaica finds itself on the margin of two of the most powerful empires of the modern period: British and American. The Second World War signals a shift toward increasing American influence, a presence that becomes especially pronounced with the aforementioned postwar economic boom. It is the local elite who broker this relation with foreign capital and, to a large extent, technology. The spread of technology from imperial centres is thus tempered by these interacting (foreign and local) ruling interests. Dub-mixing techniques, along with numerous other influential sound system-based innovations, are therefore positioned against these efforts at maintaining ruling order. Carefully considered, these innovations are indicative of breakdown in the technological extensions of empire. Further, the influence these innovations have exercised on a world-wide scale might also be considered as a form of *counter-transmission*.

In order to explore these ideas, I attempt to demonstrate how the possibilities of each new technology are produced out of a conflict with the rigidities of a society's dominant media. The example of print provides much insight into this pattern in the European context. However, Jamaica's beginnings as a plantation colony require an account of slavery that goes beyond simply categorizing it as another form of rigidity. In Chapter One and Two, I have tried to stress the excessive

brutality which characterizes slavery in a plantation colony. This history is important to consider because change happens far less slowly than many like to think; where there are not open wounds, there are scars. Technological change does not start with a clean slate, despite the fact that it is often credited with creating one. As I will explain, sudden access to print and the parliamentary system does not wipe away what came before it; in many ways it amplifies it.

It is in this sense that I position the sound system against not only print-based monopolies of knowledge, but also those of competing audio technologies. As touched on above, attention is focused mainly on radio, imported vinyl records and record players, particularly as forms of private property directed at individual consumption. In terms of vinyl records and record players, I also attempt to draw attention to their position as imported commodities and consider the implications this has for access.

In order to explore the central role of the *exclusive* (or *special*) in sound system competition, I conclude the first chapter with a dramatic incident involving Clement Dodd (a.k.a. "Coxsone"), Prince Buster and "Duke" Reid. An exclusive is a tune that is unique to a particular sound system. In marketing language, the exclusive functions as a form of *branding*; as a means of distinguishing oneself from one's rivals in an environment of intense competition. As the term implies, the value of an exclusive rests on a sound system's exclusive monopoly over that recording. The role of the exclusive is important to consider for a number of reasons. While restricted access and limited supply are largely what makes an exclusive so valuable, as the supply of these foreign commodities dwindles, *soundmen* are forced to turn elsewhere. Local musicians and recording facilities are discovered to be an excellent source of exclusive recordings. Cut onto *dub plates* (metal phonograph shaped disks coated with an acetate lacquer), these early Jamaican rhythm and blues recordings proved to be extremely popular with the sound system public. This discovery shifts the circuit of production almost entirely to the local level, with the general discarding of imported vinyl in favour of locally produced dub plates. This transition appears to occur primarily over the latter half of the 1950s. By the 1960s, "exclusive" generally means locally recorded, and it generally means *dub plate*.

Perhaps most importantly, this transition marks the first major surge of locally produced recordings directed at local consumption. As I explore in Chapter Two, the dub plate ushers in a fertile new phase in the domestic record industry, and introduces an inexpensive way of testing and experimenting with recordings. A dub plate can be played in the sound system immediately, thus avoiding the costly and time consuming intermediate stages involved in releasing a vinyl recording (Barrow and Dalton 2001: 21, 449). The dub plate also offers a means of building up mass demand for a recording prior to its release on vinyl (ibid.).

Most significant in terms of the investigation of dub-mixing practices, the dub plate enabled the development of the first proto-dub instrumentals. In late 1967, a Spanish Town sound system operator named "Ruddy" Redwood was having a dub plate cut by the engineer at Treasure Isle Studio (ibid.). The engineer, Byron Smith, was having difficulty dropping in the vocal track and wanted to stop cutting, but Redwood insisted Smith continue to the end. When the miscued dub plate finished cutting, Redwood apparently pronounced it "art" (Bunny Lee in Katz 2003: 166). The enthusiastic reaction to Redwood's dub plate in the sound system that night confirmed the arrival of the first proto-dub instrumentals. As touched on earlier, within the next few years, "versions" became a standard feature on the flip-side of most Jamaican singles. By the mid 1970s, the growing popularity of these versions pushed dub-mixing practices into increasingly experimental realms.

Given the centrality of sound system, dub plate and multi-track technologies in the development of these practices, a number of theories of technology will be elaborated on in the following chapters. The spread of technology as a means of extending imperial control has already been noted in connection with Harold Innis. This understanding of the geo-political dimensions of "technology transfer" is a central and distinguishing feature of this analysis of dub.

The development of dub-mixing techniques has already been well documented in a number of works, particularly Steve Barrow and Peter Dalton's foundational *The Rough Guide To Reggae* (2001; 1997, 1st ed.), David Katz' equally impressive *Solid Foundation: An Oral History Of Reggae* (2003) and *People Funny Boy: The Genius of Lee "Scratch" Perry*

(2000), as well as Dave Hendley and Ray Hurford's pioneering piece on King Tubby, "King Tubby - King Tubby's In Fine Style" (*More Axe* 1987). However, due to the broader scope of these works, a comprehensive investigation of the role and movement of technology is not possible, or even desirable, in such endeavours. This thesis attempts to extend this and other important groundwork into an analysis centred around the spread and translation of technology and its protocols. I approach this spread and translation in the tradition of Dick Hebdige's notion of "versioning" (1987: 12-16); a practice residing somewhere between quoting and translating.

In Chapter One, the emergence of the sound system is outlined, particularly in relation to the work of Innis. In Chapter Two, I continue to follow the genesis of the sound system, largely in terms of amplification, the deejay and the dub plate. The sound system is investigated for its role in the birth of dub-mixing practices and the growth of the domestic record industry in general. With this background, the stage is set for appreciating the interacting nature of sound system and recording studio innovations. The relation between these two interdependent spheres is such that I have considered them as one single circuit of production: the *sound system-recording studio circuit of production*, as I refer to it.

Although this interfused circuit functions as a singular system, for thematic and organizational purposes, this thesis will break the investigation of this entity down into two parts. Chapter One and Two constitute Part I, entitled Medium Rigidity, The Sound System and Dub. As the name suggests, attention in these first two chapters is focused on dub as an outgrowth of the sound system form. In Part II, by contrast, the focus is shifted from the sound system to the recording studio; the primary site of dub experimentation.

In a similar manner to Part I, in Part II (Chapter Three and Four) the emergence and development of Jamaican recording studios is mapped out through the arrival of a series of new recording technologies and sound treatment devices. This chronology takes us from the rudimentary turn-crank disc recorders of the late 1940s, to the first multi-track facilities in the late 1960s. Experimental uses of the new multi-track form are almost immediate, and it is for this reason that I have put considerable

effort into attempting to date the arrival of each new technology as well as explore the subsequent reactions.

Due to the fundamental importance of multi-track recording to the dub form, in Chapter Three, I also map out this technology's beginnings with Les Paul. This history is interesting to consider because it helps situate the translation of function as this technology moves from the U.S. to Jamaica, under the sound system-recording studio circuit of production. In this circuit, multi-track recording, particularly the multi-track mixing-board interface, suffers a violent reversal in application. Marshall McLuhan's notion that a medium, when pushed to the extreme, tends to reverse itself (1964: 33-40, 262), provides an instructive model here. Keeping this notion of medium reversal firmly in the political, these and other such unorthodox studio practices are positioned as a translation of political struggle to the realm of technological practice.[3]

As I chart out the construction of the first wave of multi-track studios in the late 1960s and early 1970s, particular attention is paid to the role of the engineer in these facilities. Errol Thompson, Lynford Anderson and Sylvan Morris are the first group of engineers considered, with both Anderson and Morris receiving valuable training from the talented Graeme Goodall (the Australian radio technician who came to Jamaica to help set up Jamaica's first commercial radio station, Radio Jamaica Rediffusion [Katz 2003: 9]). However, by Chapter Four, it is King Tubby and Lee Perry that become of greatest concern. The construction of both of their studios is considered for its interesting combination of "obsolete" recording equipment and cutting edge devices. Unorthodox recording and mixing practices abound in these two studios, and for this reason, many of the themes circulating throughout the thesis

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[3] Steve McCaffery describes a similar dynamic between designed function and use in relation to the emergence of the audio poem (1997). McCaffery makes reference to the *audio-poémes* of Henri Chopin (b. 1922) and John Cage's prepared piano in *Sonatas and Interludes* (1946-1948), considering both to be examples of a transgressive, or an abusive, relation to technology's designed function (ibid. 158-162). Yet, the potential significance of this kind of transgressive relation to technological protocol seems prematurely limited in McCaffery's discussion. For example, McCaffery states: "It is this transgression of designed function that situates Chopin's art within the wider issues of the politics of poetic form and the sociocultural domain of tactics" (ibid. 162). A brief glance at the work of Harold Innis suggests that this tension between design and use can be used to confront broader issues. Most notably, this tension seems to be involved in shifts in patterns of political and territorial control and resistance.

are brought to the fore in these last sections. King Tubby's thunderclap effect and Lee Perry's phoneme-dropping dub-mixing style are held up as powerful examples of the potential of such techniques to translate and amplify meaning. While Perry's mixing style, and dub-mixing in general, essentially reverses the function of the multi-track mixing-board interface, Tubby's thunderclap effect cuts across function on a completely different axis.

It is the discussion of the *dub fragment* that attempts to do justice the process of intensification identified in the dub-version. Throughout the thesis, the dub fragment is linked to the historical conditions of mechanical reproducibility. In Chapter Four, particularly with the discussion of Walter Benjamin, these conditions are once again brought to the fore. As touched on earlier, the concepts on which mechanized production are based become turned on their head in the dub-version. Invaluable insight into this revolution in the process of production is provided by Walter Benjamin, most notably with his discussion of the "highly significant" baroque fragment. With the baroque fragment, it is revealed that meaning is not dissipated, but rather intensified and transformed through the process of fragmentation. Here, the remnant meaning of isolated fragments of the original totality become imbued with a threatening new quality.

I conclude the thesis by noting the *hybrid* position, between mechanical fragmentation and electrical incorporation, which the dub-version appears to occupy. Marshall McLuhan finds that such hybrid moments tend to breed a "furious release of energy and change", a diagnoses which seems especially suited to the dub-version. Digital rhythms would take the sound system by storm in 1985, yet many of the techniques on which the digital age modeled itself were already present in the (pre-digital) dub-version. Using pre-existing material to construct new rhythms from the fragments of older ones is the very basis of dub-mixing. This "cut 'n' mix" method (Hebdige 1987), which would later become the foundation of nearly all beat-driven music (i.e., hip hop, house, industrial, jungle, electro, etc.,), had already reached a surprisingly advanced state in Lee Perry's work by 1973. Similarly, the idea of shifting instrumentation to the mixing device itself was present in Jamaica years before this was even possible in a digital format (i.e., via a sampler).

For all of the above reasons, I suggest the period leading up to this decisive shift to digitization (in 1985) as a fascinating area for further study.

I then close the concluding section with a quote from McLuhan concerning the power of the hybrid threshold; that place and moment of encounter in which "the meeting of two media is a moment of truth and revelation from which a new form is born" (1964: 55).

PART I
MEDIUM RIGIDITY, THE SOUND SYSTEM AND DUB

CHAPTER ONE
AN INTRODUCTION TO THE SOUND SYSTEM FORM

SECTION I
THE EARLY SOUND SYSTEM

In the decade following the Second World War, something happened to the way that many Jamaicans enjoyed music (Hebdige 1987: 62-63). In Kingston, big-band "orchestra dances" were no longer the only place to go for musical entertainment (Barrow and Dalton 2001: 3). A new, more accessible space for dancing was taking shape, and it thrived on the support of those prohibited from attending such middle and upper-class orchestra dances. This space was the *sound system*. The flexibility of this new form came largely from the fact that it featured no live band (ibid. 11; Katz 2000: 11). Records, blasted through enormous speakers and increasingly sophisticated amplifiers, were the feature attraction at the sound system.

Initially, the equipment was as simple as a single record player with extension speakers (Barrow and Dalton 2001: 11). These early sound systems first appeared in storefronts as a means for local shop owners to boost sales. Liquor stores, in particular, figure prominently in many accounts.[1] However, such commercial motivations alone do not

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[1] For example, sound system giants Arthur "Duke" Reid and Clement "Coxsone" Dodd were introduced to the sound system via this route. Both men first started playing records from their respective family liquor stores in order to draw and hold customers (Chang and Chen 1998: 110; Barrow and Dalton 2001: 15). The trajectories of these two figures warrant mention because, as Stolzoff notes, "They became the two most important soundmen in the business. . . [their] contribution to the development of the sound system and later to the development of the Jamaican record industry is almost beyond measure" (2000: 48, 225). However, Stolzoff also overstates his case by claiming that Coxsone and Reid were also the "first to go into the studio to record music exclusively for the sound system" (ibid. 48). According to David Katz' interview with Noel "Zoot" Sims, a.k.a. "Skully", the first Jamaican rhythm and blues was recorded for the sound system by an earlier wave of producers (Katz 2003: 14). More on this in Chapter Three.

sufficiently explain the genesis of the sound system. For instance, band leader Roy White would often play (blues and jazz) records from his woodworking shop, "where swarms of school-age boys and unemployed young men would hang out to catch his sound system at work" (Stolzoff 2000: 43). This was a curious demographic for shop owners to attract: having little or no buying power, the mere presence of these young men idling about would likely repel more prosperous segments of society.

According to Bunny Goodison of Soul Shack sound system, Roy White was also one of the first to hire himself out as a kind of mobile dance party in the 1940s (ibid.). Using a public address system, White began by "playing out" at political rallies due to his affiliation with "some political grouping" (Goodison qtd. in ibid. 42). Between speeches, White would attempt to "keep the crowd involved and attentive" by playing records (ibid.). Soon White joined the handful of other sound system pioneers (such as Count Nicholas, Count Goody and Tom "The Great Sebastian" Wong) who were hiring themselves out to the greater public (ibid. 43).

For both promoters and their clientele, this new form of musical entertainment was less economically prohibitive than orchestra type dances (ibid.; Katz 2000: 11; 2003: 4). Bunny Lee explains the situation from the perspective of promoters:

> Y'see, after the orchestra play all an hour, dem stop fi a break, an' dem eat off all the curry goat, an' drink off all the liquor. So the promoter never mek no profit - dem did prove too expensive fi the dance promoter. Dem alone eat a pot of goat! So when sound [system] come now, the sound no tek no break. When these few sound system come, it was something different.
>
> (Bunny Lee qtd. in Barrow and Dalton 2001: 11)

The lower costs and greater versatility of the early sound system meant that anyone who could scrape together the requisite "three to five pounds" could have a sound system come directly to them (Goodison qtd. in Stolzoff 2000: 42). Entry price was around two shillings and, because of its mobility, the sound system was also able to penetrate into country towns that did not have any formal music venues (Katz 2000:11). As Norman Stolzoff points out, even in country towns that had a suitable venue, access to live music there was restricted to an elite, just as in the

city (2000: 45-46). In the following, he describes how this rural musical scarcity intensified with the growth in tourism along the North Coast during the postwar economic boom.

> The relative lack of lower[?]-class popular entertainment was compounded when the local village bands left their communities to play in the North Coast hotels of Montego Bay and Port Antonio. With the boom in tourism, the cost of hiring a band was out of the ordinary person's reach. Only people from the upper crust could afford to bring in live bands. . . it was clearly understood that these [live dance] affairs were not open to the masses. . .
>
> (ibid.)

Stolzoff's interview with sound system pioneer Winston Blake[2] offers further insight into this restrictive environment, and particularly the central role of class [read: antagonistic social relations] in the development of the sound system. As Winston Blake states:

> There was an aura definitely of place--lower class, middle class, upper class--three distinct classes. There is no way you [the poor person] could even think of going there [to middle- and upper-class dances]. You know your place, and you know you don't go to that dance. You understand? Those are the big people dem dance. . . So the space was left wide open for the sound system to come in and create their entertainment for them [the working-poor]. We saw this medium, and we went right in. And we got very popular overnight. Because it was there waiting for, to be taken, you know. And that is how the sound system became popular.
>
> (Blake qtd. in ibid. 46)

While the sound system also moved into many of the same "top venues" that featured orchestra dances (Barrow and Dalton 2001: 12-13), as the above suggests, its establishment was largely in response to the exclusiveness of upper and middle class dance spaces. Ready at hand was a diversity of locations--from sidewalks to clubs, Friendly Society Halls and Masonic lodges to enclosed outdoor venues called "lawns"--in which the sound system proceeded to circulate (ibid.). Competition to outdraw each others' clientele was fierce, particularly in the downtown area of Kingston known as "Beat Street" (ibid.). Success was largely based on the ability of the sound system operator

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[2] Winston Blake is the operator of the Merritone sound system. Established in 1950, Merritone is "the longest-running sound system in Jamaica" (Katz 2003: 2).

to maintain a superior selection of records and, increasingly, powerful audio equipment to do it justice (Hebdige 1987: 62-63).

Imported U.S. Rhythm and Blues Records

By 1950, the sound system was generally ruled by imported U.S. rhythm and blues, which was enjoying enormous popularity on the island, specifically among poor black urban youth (ibid.; Katz 2003: 4). Considering the circumstances behind the spread of this imported commodity for a moment may be helpful. According to Jacques Attali, the postwar spread of U.S. rhythm and blues records is based on a brutal internal process of colonization, involving the "pillaging of the patrimony of southern blacks" by the American industrial apparatus (1985: 104). It is this process which distinguishes music of the mid-twentieth century from the three period-based styles Attali outlines before it (liturgical music of the tenth century, polyphonic music of the sixteenth, and harmony of the eighteenth and twentieth centuries [ibid. 10]).

Ushered in during the 1950s, this fourth period takes shape in the completion of the transformation of music into a commodity. "The history of this *commodity expansion* is exemplary", states Attali (ibid. 103-emphasis added). "A music of revolt transformed into a repetitive commodity. An explosion of youth -- a hint of economic crisis in the middle of the great postwar economic boom -- rapidly domesticated into consumption" (ibid.). Significantly, the ability to capitalize on this music of revolt and explosion of youth during the postwar economic boom hinged on "a new economic organization of distribution *made possible by recording*" (ibid. 10-emphasis added). This history of medium-enabled expropriation and commodity expansion is particularly instructive when considering the political dimensions of the emergent sound system form. By drawing attention to the social relations on which the spread of rhythm and blues records is based, Attali's work provides important clues as to how some of these relations are being re-negotiated within the sound system. Without a doubt, the swelling population of urbanite Kingstonians were greatly inspired by these imported rhythm and blues records, however, with the shift to rock and roll in the U.S., this supply of records began to dry up. Alternate sources had to be found.

Sound Clash: Competition, Experimentation and the Deejay

Each sound system was associated with an area--"typically a tough patch of the ghetto"--and generally came "with a set of fanatically loyal followers attached to it" (Katz 2003: 4). This situation also made for a more specialized type of sound system dance, called a "clash", in which competing sound systems would battle for dominance of an area based on the response of the patrons. Sound system legend Duke Vin states that:

> The two first sound system clashes in Jamaica was between Tom the Great Sebastian and Count Nick in 1952. Tom beat Nick, and the return was up at Nick's yard in Waltham Park Road - Tom beat him both times. Tom was great, man! Him friend send some big tune for him from New York and that night, if you see the crowd. . .
>
> (Duke Vin qtd. in ibid. 1)

As Duke Vin notes above, success in these clashes depended largely on who had a better supply of exclusive records (ibid., 5).

In this climate of intense competition, any potential advantage was worth exploring. Every negotiable facet of the sound system was restlessly subject to experimentation and modification. Few took up this challenge with greater gusto than the deejay, who, as a direct result of the sound system form, had suddenly been thrust into centre-stage. The emergence of this new role is interesting in itself. Although certainly connected with the demand for exclusivity in the sound system (Barrow and Dalton 2001: 3, 11-17), the ascent of the deejay also represented something else. This position arose as an ambassadorial role, as a means of brokering the local popular encounter with a foreign medium (imported vinyl) and style (U.S. rhythm and blues). Deejays found that by adding their own spoken introductions and commentary, even widely available foreign records could be repositioned so as to acquire a new found local valence. This dynamic is illustrated nowhere better than in the testimony of Count Machuki (b. Winston Cooper), who Barrow and Dalton describe as "Jamaica's foundation deejay" (ibid. 18-19).

"Nobody else was doing it [deejay toasting] at the time and I really did it to take away the drabness, to make the sound system sound

different from a juke box" (*The Gleaner*, 13 March 1994; Stolzoff 2000: 56). In addition to his legendary status as "the first man to speak over records at dances", Machuki pioneered a percussive vocal technique he called "peps" (Barrow and Dalton: 2001: 18-19). Recounting the circumstances behind this latter innovation, Machuki states:

> There would be times when the records playing would, in my estimation, sound weak, so I'd put in some peps: chick-a-took, chicka-a-took, chicka-a-took. That created a sensation! So there were times when people went to the record shop and bought those records, took them home, and then brought them back, and say: "I want to hear the sound I hear at the dancehall [sound system] last night!" They didn't realize that was Machuki's injection in the dancehall!
> (Machuki qtd. in ibid. 19)

"Machuki's injection", although certainly a demonstration of individual ingenuity, is also indicative of broader phenomenon in the sound system. While the medium of the vinyl record inherits certain rigidities in terms of interactivity[3], within the sound system form, these constraints are partially undermined. In Harold Innis's study of the role of communication technologies in empire and monopolies of knowledge (1951), the pattern above is a familiar one. Throughout his account of successive and competing communication innovations in the rise and fall of empires, numerous examples suggest that a bias towards rigidity makes a medium particularly susceptible to circumvention.

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[3] For example, as a "uni-directional" medium, as vinyl records would be qualified within *medium theory* (Meyrowitz 1994: 50). According to Joshua Meyrowitz, medium theory offers a research model that goes *against the grain* of the dominant tradition in media scholarship. This dominant tradition, typically know as "*media* theory", tends to focus exclusively on the content of media messages (ibid.). In contrast, medium theorists, such as Harold Innis and Marshall McLuhan, have attempted to consider the implications of various communications technologies "in addition to and apart from the content they convey" (ibid.).

SECTION II
MEDIUM "RIGIDITY" AND THE WORK OF HAROLD INNIS

"Rigidity" is a medium disposition characterized by restricted access and limited interactivity. These features stem from the physical form of the medium in question as encountered under pre-existing institutional structures (Heyer and Crowley 1991: xix). This relationship between power and the material qualities of a medium becomes further reinforced with the growth of specialized knowledge incidental to that form (Innis 1951: 4). Such a restrictive environment weakens the ability of empires to reproduce themselves and extend their control over populations. With this widening of a gap between specialized knowledge and public opinion, the hold of an inflexible medium over a population becomes increasingly susceptible to breakdown, and eventually succumbs to competition from a less rigid medium (ibid.).

Innis explores how this vulnerability is repeatedly exploited in the spread of technological developments from marginal regions (where exposure to the respective monopoly of knowledge is limited) to imperial centres (ibid.). Peripheral encounters and the "sudden extensions of communication" which result are thus able to infiltrate back into the weakening centre, often via the neglected vernacular (ibid. 128). This pattern might be more concretely grasped by briefly considering the routes by which paper and printing undermined the monopolies of knowledge built up by parchment under monasteries (ibid. 20) and the copyist guilds (ibid. 53).

The (European) invention of printing and beginnings of mechanical reproduction take place, rather significantly, "on the margin of the area dominated by copyists" (ibid. 23). Technically, Gutenberg's "invention" is not printing, but rather the introduction of movable types, or "repeatability" ("the core of the mechanical principle that has dominated our world" [McLuhan 1964: 160]), to the process of printing.[4] Paper

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[4] Interestingly, the previous process of block printing develops in the cleavage between Confucianism and Buddhism in China (Innis 1951: 18). The invention and manufacture of paper occurs in the second century A.D., but due to the complexity of the writing system used in conjunction with it, paper primarily extends the interests of a learned class, limiting the influence of public opinion. Innis situates the coming of block printing as a kind of counter-irritant to this

makes its way from China to the west through the expansion of Islam and the capture of Turkestan in 751 (Innis 1951: 19).[5] By the late eighth century, paper is manufactured in Baghdad with production spreading to Spain and Italy in the twelfth and thirteenth centuries (ibid.). As will be discussed, the movement of knowledge this new medium facilitates is overwhelming, particularly when combined with movable type print in the fifteenth century (McLuhan 1964: 101).

The transmission of paper and print from these relative marginal regions[6] is thus able to undermine the monopoly of knowledge and thorough system of censorship built around parchment and the dominance of Rome (Innis 1951: 48/49). Although the flexibility of the phonetic alphabet (Innis 1951: 55) is unsurpassed in its ability to translate "the sounds of any language into one-and-the-same visual code" (McLuhan 1964: 87), under print, new dynamics of access and interaction emerge. Print and the world of mechanical repeatability it represents are only able to translate a narrow, albeit magnified, spectrum of meaning out of the vast range of possibilities in human communication. As Carlo Ginzburg explains, the significance of this "radical decision to exclude all but the reproducible" is "incalculable" (1980: 16). For example, this "cultural choice" provided the basis for the "decisive shift" represented by Galileian physics. Using mathematics and the experimental method, with their emphasis on measurement and repeatability, Galileian science

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medium-based friction between traditions. "Printing", he explains, "emerged from the demands of Buddhism in its appeal to the [neglected] masses and of Confucianism with its interest in the classics, the literature of the learned" (ibid.).

[5] As Ahmed al-Hassan and Donald Hill note, "The introduction and spread of the paper-making industry in the Near East and Western Mediterranean was one of the main technological achievements of Islamic civilization. It was a milestone in the history of mankind" (1986: 190). It was during the Battle of the Talas River in 751 AD that several Chinese artisans were taken prisoner and brought back to the Muslim city of Samarqand (ibid. 191). Zakariyya Al-Qazwini (1380), quoting from another source writes, "Prisoners of war were brought from China. Among these was someone who knew [about] the manufacture of paper and so he practiced it. Then it spread until it became a main product for the people of Samarqand, from whence it was exported to all countries" (qtd. in ibid.).

[6] "Relative", cannot be stressed enough in this statement. In fact, "relative marginal regions" should be qualified further by emphasizing that these regions are marginal only in relation to the modern Eurocentric bias of the times. Technologically, during this period it was Europe that was the real margin, and which continued to be so until 1500 AD (Charles Singer in Ahmed al-Hassan and Donald Hill 1986: 32-33). For further discussion of this dynamic of technological development, please see footnote 18 in Chapter Two.

was able to do something previously unheard of: displace the qualitative with the quantitative (ibid.).

Ginzburg turns to the "atypical" case of philology, particularly textual criticism, to demonstrate how this new scientific paradigm was related to a shared medium-specific movement towards abstraction. He argues that each new inscribing technology has resulted in a "progressive dematerialisation" in which, first, voice and gesture were stripped away *through writing* and following that, *with print*, the characteristics of handwriting were similarly discarded. "We know that textual criticism evolved after the first, with the writing down of Homeric poems, and developed further after the second, when humanist scholars improved on the first hasty printed editions of the classics" (ibid.).

As a result of this "progressive dematerialisation", textual criticism was able to jettison any appeal of the original to our various senses and appear exterior to qualitative specificity. "This thoroughly abstract notion of a text explains why textual criticism, even while remaining to a large degree divinatory [read: conjectural], could (and during the 19th century did) emerge as rigorously scientific" (ibid.). Even more significant, this medium-based progression also explains how "Galileo, while laying the foundations of modern natural science by a similarly drastic conceptual reduction, himself turned to philology".[7]

Thus, while print "opened access to world understanding for larger numbers of people than ever before", "this technology, like others before it, developed restrictions on what was acceptable content, and fostered a particular kind of social control, which in turn led to a new series of monopolies of knowledge" (Heyer and Crowley 1991: xx). Perhaps most notably for Innis, print represented a shift in orientation, from monopolies of time[8], under parchment, to monopolies of space. The technologies and

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[7] For instance, Galileo felt that the language for understanding the universe, "this great book standing open before our eyes", could be decoded through "figures, numbers and movements, but not smells or tastes or sounds, which cannot be separated from the living animal except as mere words" (G. Galilei qtd. in Ginzburg 1980: 16). According to Ginzburg, "Galileo here set the natural sciences firmly on a path they never left, which led away from anthopocentrism and anthropomorphism (from an approach explaining everything in relation to human beings), and continued to widen the gap between fields of knowledge" (Ginzburg 1980: 16).

[8] For example, in those organizations exhibiting a concern for longevity rather than an emphasis on the securing and maintaining of territories.

nature of modern European colonial expansion are particularly compelling evidence of this change in orientation. Indications of this change include the development of the mariner's compass, the lens, the invention of Renaissance space[9] and linear perspective, the undermining of the Ptolemaic system (with the invention and improvement of the telescope) as well as the "discoveries" of Columbus and Magellan (Innis 1951: 128). To this list, one might also add the discovery of (linear) military applications for gunpowder, which Marx describes as one of the "necessary prerequisites of bourgeois development" and, following this, of machine-operated industry ("Marx to Engels, 28 January, 1863").[10]

Medium Struggle: Rigidity Meets Flexibility in the Sound System

As Heyer and Crowley point out in their introduction to *The Bias of Communication*, space-biased media, such as print, "facilitate expansionist empires that subjugate marginal groups" (1991: xix). "Each new communication technology in the modern period", accordingly, "worked to draw more and more aspects of economic life, and further and further reaches of territory, into the influence of organized commerce and its systems of markets, prices, and credits" (ibid. xv). For example, it has been noted that in the sphere of music, the postwar spread of vinyl recordings marks the expansion of the commodity form into further reaches of both cultural and geographic territory (Attali 1985: 103-104 + Innis). Undoubtedly, one of the main justifications for introducing such a technology is the implicit appeal to better access for greater numbers of people. While improving access is indeed central, as discussed above, it is not in the generous sense one is often led to believe.

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[9] McLuhan 1964: 157-158.

[10] Along these lines, McLuhan describes an interesting interaction between gunpowder and linear perspective in the intimately related developments of the gun-barrel and machine industry. "The techniques developed over the centuries for drilling gun-barrels provided the means that made possible the steam engine. The piston shaft and the gun presented the same problems in boring hard steel. . . it had been the lineal stress of perspective that had channeled perception in paths that led to the creation of gunfire. Long before guns, gunpowder had been used explosively, dynamite style. The use of gunpowder for the propelling of missiles in trajectories waited for the coming of [linear] perspective in the arts" (1964: 340).

The growing influence of U.S. rhythm and blues records in Jamaica is by no means an insignificant component of this invasive movement. The postwar economic boom signaled, among other things, the new global reach of American cultural commodities, particularly in relation to "peripheral" regions, such as the Caribbean.[11] In Jamaica, as in other areas subject to U.S. military presence, the flow of such commodities was greatly facilitated by routes established through wartime military expansion (Hebdige 1987: 62). The current and following chapter will therefore partly explore the role of militarization during this period, as well as how this gave way to increasing multinational corporate involvement after the war, most notably with the aluminium and tourist industries.

Jamaica thus provides an excellent instance of how this medium-based cultural outspreading can operate. As will be discussed, the disproportion toward the importing of records rather than of recording equipment, and later, between the pressing of foreign over local recordings, is indicative of rigidities associated with centre-margin patterns of control. However, this is also where the hope of this thesis lies: in the fact that such patterns of control were largely undermined in Jamaica, at least in the sphere of recorded music.

The success of this evasion becomes especially apparent in the emergence of a fertile local recording industry which, by the end of the 1950s, was increasingly displacing imported vinyl in the sound system. This local displacement of foreign product in the sound system is as fascinating as it is intricate, and thus perhaps best left to the following

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[11] It is interesting to note that the work of Innis was largely prompted by this same transition and expansion of imperial control. As Ian Parker states: "It must be recognized that Innis' preoccupation in his later works with the preconditions for the spatial and temporal survival of historical empires, with the role of communications in sustaining them and with the possibilities for successful marginal resistance to imperial control, was not unrelated to the shift from British to United States imperial hegemony in Canada and globally during the twentieth century, of which Innis had become increasingly conscious during the 1930s and 1940s" (1981: 136). "Moreover", Parker states elsewhere, "just as Marx's marginal German origins heightened his awareness of the significance of characteristic features of English capitalism in his day, and as Veblen's marginal Wisconsin-Norwegian agrarian origins heightened his awareness of the significance of emergent U.S. industrial and finance capitalism, so Innis' marginal Canadian and agrarian origins, heightened by his experiences in World War I, sharpened his concerns with the dialectical relationship between imperial centers and colonial margins (insofar as Canadian development had been conditioned by successive subordinate relations to French, British, and U.S. empires). . . (ibid. 134).

chapter. For the moment, one might note the inspiring tenacity of this embryonic record industry, particularly in its ability to resist the onslaught of cultural commodities radiating from perhaps the most powerful empire of the modern period. As the discussion of the Kingston music scene following the Second World War suggests, this tenacity is a direct outgrowth of the resilience of the sound system. The fundamental importance of the sound system to all successive innovations and developments in the record industry cannot therefore be emphasized enough.[12]

Given the interconnected nature of these two spheres, the first two chapters are primarily used to explore the development of the sound system form, especially as a means of understanding the growth of Jamaica's record industry. Building on this context, Chapter Three and Four will then shift focus to the sphere of recording itself. In the examination of both realms, particular attention will be paid to the connections and interactions between these two areas of production.

Among the numerous innovations which grew from this interfused *sound system-recording studio circuit of production*, several have left an undeniable imprint on musics far beyond the shores of this "developing nation". As David Katz succinctly explains:

> Its distinct musical elements increasingly permeate other popular forms: for instance, the dub techniques of Jamaica's pioneering engineers have become the bedrock of modern dance remixes, and sub-genres such as ska, roots and dancehall are the basis of prevalent hybrids abroad. Perhaps most notably, the innovations of Jamaican toasters helped spawn the earliest versions of rap and hip-hop culture, and vibrant cross-fertilization of those forms continue. (2003: 1)

This permeation of popular forms on a worldwide scale is not unlike the twin-processes of expansion and counter-transmission observed in the work of Innis. The translation of dub and toasting techniques into contemporary dance remixes and hip hop culture demonstrates the extent to which these peripheral innovations were able to infiltrate back

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[12] For example, Barrow and Dalton refer to the sound system unequivocally as "the main engine of development for all Jamaican popular music, spawning such practices as dub mixing and toasting (a.k.a. deejaying)" (2001: 3). As will be evident shortly, these two practices are of central concern to the present work.

into American urban centres.[13] Following these international routes of counter-transmission, however, will not be the primary task of this thesis. While these routes provide an excellent context from which to launch the investigation, the main focus of this project is the formation of those two practices which unavoidably come up in any account of Jamaica's wider influence on popular music: toasting and dub-mixing. Although priority will be given to dub-mixing, a thorough account of its genesis would be impaired without the inclusion of the ambassadorial role played by the deejay.

The investigation of dub-mixing techniques will also necessarily involve a history of developments in recording studio technology and engineering. Most notably, this history will be oriented around the turning point represented by the arrival of multi-track recording capabilities on the island, and the almost immediate response to its new possibilities for expression. Given the fundamental enabling power of newly arrived technologies, the position of various media, and particularly their interaction, will receive considerable attention. As will be discussed, the possibilities of these new technologies are produced out of a conflict with the rigidities of various dominant media, particular those which regulate political access and expression.

Slavery in a Plantation Colony

A brief review of Jamaican history may be instructive at this point. The slave population of Jamaica suffered extremely restrictive and brutal treatment under the colonial plantation system and institutions of slavery. Production in a plantation colony is directed largely at overseas markets and this has dire consequences for the living conditions of slaves. While production for immediate local consumption tends to provide *some degree* of humane treatment for slaves, "by identifying the master's interest with the slave's preservation" (Cairnes qtd. in Marx, *Capital*, vol. 1: 266), such concerns are jettisoned when international markets and slave trading enter the equation. As Marx explains, once production is

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[13] Significantly, this infiltration reached back into many of the same urban centres from which (U.S. rhythm and blues) vinyl recordings initially emanated.

drawn into "the whirlpool of an international market dominated by the capitalist mode of production" (ibid. 236), the depravity of slavery reaches a new extreme. Here, "the civilised horrors of over-work are grafted on the barbaric horrors of slavery" (ibid.) and the most effective economy becomes:

> that which takes out of the human chattel in the shortest space of time the utmost amount of exertion it is capable of putting forth. It is in tropical culture, where annual profits often equal the whole capital of plantations, that negro life is most recklessly sacrificed. It is the agriculture of the West Indies, which has been for centuries prolific of fabulous wealth, that has engulfed millions of the African race.
>
> (Cairnes qtd. in ibid. 266)

Thus, in the Southern States of the American Union, "as the export of cotton became of vital interest to these states, the over-working of the negro and sometimes the using up of his life in 7 years of labour became a factor in a calculated and calculating system" (ibid. 236).

Not surprisingly, the degree of African cultural retention in English plantation colonies tended to be quite low in comparison with Iberian and French settler colonies (Manuel 1995: 10-12). In contrast with the substantial freed black population of a settler colony like Cuba, Jamaican slaves, who constituted almost 90 percent of the population by 1800, "were subject to rigid cultural repression and could exert little cultural influence" (ibid. 12). This difference had partly to do with the fact that Iberian settler colonies continued to import slaves some seventy years after British colonies ended the practice in 1804 (ibid. 11). Yet, for Peter Manuel, perhaps the most important factor in these lower rates of retention is the aforementioned severity of rule in British plantation colonies.[14] For instance, Manuel explains how:

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[14] This explanation touches on the controversial "Tannenbaum thesis", which maintains that slavery in Roman Catholic colonies was milder than British and Dutch colonies, at least in terms of the degree of cultural autonomy tolerated by authorities (Manuel 1995: 10). As Manuel points out, the validity of this argument depends largely on the criteria by which the severity of slavery is measured (ibid. 10-11). For instance, North American slaves favoured better than Caribbean and Brazilian slaves in terms of diet, longevity and reproduction rates (ibid. 11). However, slaves in Spanish and French colonies could buy their own freedom much easier ("manumission"), and tended to have less restrictions on the practice of neo-African religions and cultures (ibid.).

> Most of Trinidad's musical vitality and cultural dynamism has developed in spite of rather than because of British rule. Until well into the twentieth century, the colonial government, as elsewhere in the British West Indies, took little or no interest in education, preferring to spend its money on prisons; a 1797 law in Barbados explicitly forbade teaching slaves to read or write. The British. . . tried further to stamp out everything they found distasteful or excessively foreign, from Chinese *whe-whe* games to neo-African religion and music.
>
> (ibid. 184)

Indeed one can detect the long term effects of these policies given that, as late as the mid-1940s, one-quarter of Jamaicans over the age of seven remained illiterate (Post 1978: 34; Stolzoff 2000: 47). Even access to voting, already an extremely narrow form of participation, remained confined to 20 000 people until a new constitution was introduced in 1944 (Sherlock 1966: 120). This constitution expanded voting rights to all Jamaicans over the age of twenty-one, increasing the number of voters thirty-fold, to 700 000 (ibid.). However, with a 25 percent illiteracy rate, this sudden expansion simultaneously served to reinforce the legitimacy of a system of governance based on further excluding those with the least amount of access.[15]

It is the rigidities associated with the restrictive environments described above, from slavery and colonialism to illiteracy and the parliamentary "regulation" of popular political access, which helps to explain the importance of new audio technologies, as well as the significance of efforts by the political elite to tightly control them. In addition to the exclusiveness of middle- and upper-class dance spaces mentioned earlier, the sound system can also be positioned against the inflexibilities and interactions *within* competing audio technologies.

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[15] In fact, even in highly literate and industrialized societies, this same pattern of restriction is at work in constitutions oriented around "the freedom of the press", according to Innis. An extremely deceptive and lopsided "individual right", the "guarantee of the freedom of the press in print [under the Bill of Rights] was intended to further sanctify the printed word and to provide a rigid bulwark for the shelter of vested interests" (Innis 1951: 138).

SECTION III
PRIVATE PROPERTY: RADIO, RECORD PLAYERS AND RECORDS

The radio, while initially quite closed to Jamaican popular tastes and expression, at other times greatly complimented local musical production and experimentation. For instance, one of the high points in exploring this latter potential of radio is the establishment of *Dread At The Controls* by Michael Campbell (a.k.a. Mikey Dread) in 1976 at JBC (Jamaican Broadcasting Corporation). As David Katz observes, "Campbell completely changed the realm of broadcasting in Jamaica with his *Dread At The Controls* radio programme, the first to continuously present raw reggae and dub to the nation".[16]

Such progressive uses can be contrasted with the original distaste for local preferences demonstrated in the playlists of RJR (Radio Jamaica Rediffusion). Not only did RJR enjoy a national monopoly on the airwaves from the time of its establishment in 1950, until the arrival of JBC in 1959, Jamaica's first commercial radio station was a British owned-franchise (Bradley 2000: 88; Katz 2003: 9). Not surprisingly, RJR programming roughly followed the "BBC Radio 2-style schedule of American and British popular hits and easily digestible classics" which characterized its predecessor, the government wartime station, ZQI (Bradley 2000: 88; Katz 2000; 16).[17]

Put simply, until the late 1950s, if one wanted to hear the kind of "harder edged" rhythm and blues that so enthralled poor black urban youth, "you had to go to the [sound system] dances, because the radio would not play it, preferring to cater to what one critic described as the 'antiseptic tastes' of the uptown crowd (Clarke 1980)" (Stolzoff 2000: 49). Further, even with the arrival of sound system sponsored radio programmes (of Tom "the Great Sebastian" Wong and Arthur "Duke" Reid) near the end of the decade, the situation remained largely unchanged. The ongoing inertia of radio management concerning this issue is glaringly evident in Augustus "Gussie" Clarke's description of the

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[16] Sleeve notes, *African Anthem: The Mikey Dread Show*, Auralux Recordings: 2004.

[17] As Lloyd Bradley notes, "With absolutely no sense of irony, the station's [RJR's] much trumpeted first Jamaican Top 30 was made up entirely of American records" (2000: 89).

climate in the early 1970s (Bradley 2000: 305). Shortly after finishing school in 1972, Gussie Clarke had already produced two of the most groundbreaking deejay debut LPs (Big Youth's *Screaming Target* and *Presenting I-Roy*). His disappointment with the lack of receptivity from Jamaican radio broadcasters is brought to the fore in the following reflection:

> It was like a class situation - like certain people with certain kind of musical tastes. The wrong people were in the wrong place - I mean in the position to decide what is played on the radio and what is not. The radio stations in Jamaica were just not into Jamaican music - they were run by people who grew up with a calypso or an R&B environment, so what interest or love are they going to show reggae?. . . They're not part of the music. Once, one of the radio station did break up and t'row away thousands of Jamaican records that they had - because they ran out of space. What sort of message does this give out? It is something you should never see a radio station do. . . so they were never going to play roots music or that kinda cultural deejay toasting. Because of this, the sound systems get big again. Bigger than they were before in the sixties. People went flocking to the [sound system] dance to hear *new* records, they go to specifically hear what new records this sound have by what new artists, because that is how the Jamaican music industry's always worked - *the latest* records is what the people want and the sound system was the only place to hear them.
>
> (Gussie Clarke qtd. in Bradley 2000: 305-306)

As in the formative period of the Jamaican record industry some fifteen years earlier, this relationship with radio had an immeasurable impact on the development of the sound system-recording studio circuit of production. As Gussie Clarke explains below, this antagonistic relationship fundamentally shaped the evolution of "the sound".[18] Pushing away from a radio aesthetic for which there was little or no outlet, producers fiercely pursued what might be called a "sound system aesthetic". Clarke states:

> This [relationship] definitely had an effect on how the music developed, because *as opposed to how the radio would want records to sound, the sound systems needed a different sort of sound entirely.* The deejays were representing the people around them with what they talked about. . . And as the rhythms started moving in one direction, like with the roots thing, because the sound systems have such a competitive mentality - they were trying to pull the biggest crowds - they each wanted to take it a bit further. Outdo each other. Remember, the

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[18] As King Jammy (one of King Tubby's most successful apprentices) adds: "All the sound systems worked like that, which is a tradition in Jamaican music because in those earlier days we couldn't get no radio play. They used to play pure foreign songs on the radio, or just the very big established Jamaican producers. I never used to get no play, nor did anyone else just coming into the music. So the sound systems were vital to anybody who didn't have the clout to get their songs on the radio, as it was the only way people could get to hear them. They were the lifeblood of the reggae business" (Jammy qtd. in Bradley 2002: 29).

> sound systems were the only source we producers had to guarantee us to get our records to the public - we had to make what we think they would want to play, so producers took it down that route. That definitely never woulda happened if we'd had to go for radio play.
> (Clarke qtd. in Bradley 2000: 306-emphasis added)

The arrival of the sound system also addressed another major obstacle associated with radio: the prohibitive cost of radios themselves.[19] In fact, the scarcity of radios in the 1940s among the working class meant that listening developed as a much more communal activity. "Poor Jamaicans would gather together, especially at night, wherever a radio could be found, because radios were still hard for the working people to afford" (Stolzoff 2000: 38). This communal aspect of reception is very much at the heart of the sound system as well. In the sound system, collective reception and participation provide a platform for the otherwise excluded to express themselves. This tradition of collective reception is explored further in the last section of Chapter Two, "Dancing in the Sound System".

Due to the transnational character of radio transmission, these communal radio listening sessions were able to bypass the confines of national radio and introduce new musical influences, most notably those from the American south. On a clear night, broadcasts from stations such as Nashville's WLAC, Miami's WNIZ, and New Orleans' WNOE, further fueled the obsession with in rhythm and blues which so propelled the early sound system (Barrow and Dalton 2001: 11). Yet despite the greater access afforded by communal listening and the international nature of radio transmission, the aforementioned cost and scarcity of radios meant that the possibilities of radio remained limited, at least during the first decade of the sound system.

The scarcity of radios was also paralleled by similar situation in relation to home record playback systems. For example, a modest turntable system in 1950 required an entire year's wages for the average Jamaican (Chang and Chen 1998: 19). An American, by contrast, would need only five percent of their yearly income for such a purchase (ibid.). Even if a Jamaican could afford such a purchase, there was still the

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[19] For example, Alvin Ranglin, founder of the GG label, states that most people "didn't have a radio, only the middle class or wealthy could afford to buy that. . ." (Katz 2003: 116).

problem of how to secure the records themselves, which, in the case of rhythm and blues, had to be imported. While American pop and jazz records could be found locally at stores like Bop City, Stanley Motta and Jamaica Electrical Supply, rhythm and blues was far less sought after by the "uptown" record buying public (Stolzoff 2000: 51). This lack of uptown demand meant that hard-edged rhythm and blues records had to make their way to the island through other routes (ibid.). The movement of these rather difficult to transport commodities was thus achieved by two main routes, both of which related to changes brought about by the war and its aftermath.

Military Routes and Trade Networks

The swelling traffic of navy ships during the war set the precedent for an informal network that would continue with merchant sailors after the war. Bunny Goodison explains how early soundmen like Tom Wong secured sought-after records through this network in the following passage.

> You know how he [Tom Wong] got his records? You had what they call houses of ill-repute. We call them sport houses or whorehouses. And then you had these guys you call pimps or touts, who would take the various sailors to the particular place where he had a connection, because this pimp might be friendly or close to the owner of this particular place. . . And the sailor used to bring records off the boat, you see, and this is how the pimps got them, as payment for services they provided by finding these girls for them. . . the sound system was fueled by the records coming off the boats to the sailors who came on shore leave for whatever.
>
> (Goodison qtd. in Stolzoff 2000: 51-52)

The second route extended with the spread of Jamaican seasonal migrant labour into the American south, a circuit which grew rapidly following the war. Contracted from six months to a year, these labourers began bringing back sound system equipment and rhythm and blues records in the late 1940s.[20] The experience of Clement "Coxsone" Dodd helps to illustrate the appeal of U.S. farm work for many Jamaicans, as well as how these networks brought a new surge of rhythm and blues into the country.

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[20] Chang and Chen 1998: 19; Barrow and Dalton 2001: 11; Katz 2000: 11; Stolzoff 2000: 52.

Although Dodd found work as a cabinetmaker in his teens, "and later trained at the Ford garage on Church Street after completing a course in automobile mechanics", working as a crop picker in the American south proved to be "more profitable employment" (Katz 2000: 13). One can begin to appreciate the disproportion between American and Jamaican wages from the fact that unskilled farm labour in the U.S. far out-paid skilled labour in Jamaica. However, what Dodd witnessed abroad made him seriously reconsider the necessity of working manual labour in either country. It was during one of these stays, in the early 1950s, that Dodd saw how black Americans were earning good money by "spinning rhythm and blues at outdoor dances and city block parties" (ibid.). One event in particular made this calling more tangible than ever (ibid.). As Katz reports:

> According to the late George Peckings, a long-time associate of Coxsone, Dodd came into the [sound system] business almost accidentally, after he met a man on a farm in America who had been buying rhythm-and-blues records to bring back to Jamaica. When the man disappeared, Dodd decided to bring back the records himself, and promptly delivered them to Duke Reid. . . Coxsone began to make guest appearances on Duke Reid's sound system with his growing stack of vinyl, and after seeing the effect his new discs had on the ecstatic Jamaican dancing public, Dodd became determined to give Duke a run for his money by starting his own system.
>
> (ibid.)

As Dodd continued to build his collection, it certainly did not hurt that his father was a foreman at the docks, and would pick up rhythm and blues, swing, and bebop records from the ships' crews to pass on to his son (Barrow and Dalton 2001: 15).

According to Stolzoff, the narrow supply permitted by these two routes (seasonal migrant labour and navy personnel/merchant sailors) soon led to a monopoly on the importing of rhythm and blues (2000: 52). Both Duke Reid and Coxsone Dodd made special trips to search the U.S. for records that no other sound system would have, and eventually began importing records for local distribution themselves (ibid.). As Prince Buster[21] explains, Dodd and Reid would locate and bootleg the hottest

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[21] After being approached by Dodd around 1957, Prince Buster (b. Cecil Bustamante Campbell) joined the team of Coxsone Downbeat sound system defenders (Buster in Katz 2003: 12). By the end of the 1950s, Prince Buster launched his own Voice Of The People sound system, posing a

exclusives of competitors and flood the market with pressings of them on blank labels (Katz 2003: 28; Bradley 2000: 33). "This further cemented their dominance over the R&B market, because they now controlled the supply" (Stolzoff 2000: 52). Winston Blake offers this synopsis of the implications for other aspiring soundmen: "You couldn't beat them 'cause they controlled the records" (Blake qt. in ibid.).

SECTION IV
THE ROLE OF EXCLUSIVES

Although Dodd and Reid temporarily controlled the local supply, they could not control each others'. "Exclusives", tunes exclusive to one's own sound system, were central to the ongoing pursuit for sound system supremacy. In the sound clashes of the 1950s, bringing out an exclusive like "Coxsone Hop" served as a daunting exclamation mark and challenge. Countering with the same degree of intensity was near

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major challenge to the dominance of "The Big Three" (consisting of sound system heavyweights Duke Reid, Coxsone Dodd and Vincent "King" Edwards) (Barrow and Dalton 2001: 14-15).

Prince Buster describes the event which led to his being approached by Dodd as follows: "How I came to work with Coxsone was that on Luke Lane and Charles Street corner, there was two sets of gangsters, and one night Noel Horse Jaw and them big men were gambling, playing Parapinto dice. I had some money, asked them if I can join the game and I broke the whole of them. . . When I start to scrape up the money, one of them named Mean Stick just fling up a foot and kick the felt hat offa me head. The whole of them draw them knife and I couldn't see where my money went to. A week later, I was in the bathroom at Drummond Street and someone call me and say, 'Them 'pon the corner!', so I just draw on the clothes on my wet skin and come out and chase Mean Stick with me knife in hand, and Coxsone and Count Machuki was coming down Luke Lane. Machuki told me later that as Coxsone was scared of people like Mean Stick, it shocked him. He said to Machuki, 'Who's the little youth?' Machuki said, 'Oh, we grew him, that's who you want to have on your side to take the face off Duke Reid'" (Buster qtd. in Katz 2003: 12).

Machuki later approached Prince Buster and told him that Dodd would like to see him. "So me and some youth go in him [Coxsone's record] shop, have some nice drink, and him nice and friendly and say he would like me to move with him" (Buster qtd. in ibid.). After going back to his corner at Luke Lane and Charles Street to "have a meeting with the youths", Buster agreed to join Dodd, despite the risk to personal safety (he was allying himself with the rival camp to the rough neighbours he had grown up with) (ibid.; Katz 2000: 25.). Dodd's offer was also made more appealing by that fact that Buster had a personal grudge against Duke Reid: "I had a vengeance in my heart for Duke Reid, 'cause the man Tom [Wong] was a nice, decent, calm, respectable man who want to just play music, but Duke Reid come with a band of Back-O-Wall bad man to the dance, they jump the fence and pull over the amplifier, mash up the boxes" (Buster qtd. in Katz 2003: 12).

impossible unless the rival had an equally devastating exclusive up their sleeve. The seriousness with which such exclusives were, and still are, regarded becomes dramatically apparent in the confrontation Prince Buster describes below.

Despite the fact that the sound system was rife with "spies", Dodd managed to keep the real name of his theme song, which he dubbed "Coxsone Hop", a secret for seven years (Bradley 2000: 37). (One of the first things done to guard against spies is to scrape all identifying markings off the label and record, including the serial number engraved on the disc itself.) According to Lloyd Bradley, "Coxsone Hop" guaranteed "a victory in practically any contest" (ibid.). This success left Duke Reid "seething" and he became obsessed with getting his hands on a copy (ibid.). Duke Reid apparently made fifteen trips abroad before discovering that the real name was "Later for Gator" by tenor saxophonist Willis "Gatortail" Jackson (Chang and Chen 1998: 20; Bradley 2000 : 37).

As Prince Buster explains, Duke Reid made no secret of his find, in fact, Reid used the occasion to create as much suspense as possible around the impending unveiling. After putting the word out that he had "Coxsone Hop" and several other Coxsone specials (exclusives), Reid announced his plans for a special dance, "at which he said he would bury Coxsone because he was going to play all these tunes" (Prince Buster qtd. in Bradley 2000 : 38).

> But before he did, to lead up to the event, he set up his sound system on the street outside [his] Treasure Isle liquor store and for about a week he played music day in day out. Right through the night, until that Monday night when the dance was going to be. . .
>
> (Prince Buster qtd. in ibid.)

With all this buildup, Prince Buster wanted to find out if Reid really had these specials or was just trying to rattle Dodd with a bluff. Buster offered to go to Reid's headquarters himself, as he and Count Machuki were the only ones from Dodd's camp that could manage this without altercation ("any other of Coxsone's guys woulda got licks and had to run" [Buster qtd. in ibid.]). But Dodd declined the offer to investigate: "he said 'No', like he don't really want to find out. But I went anyway" (Buster qtd. in ibid.).

Dodd's reluctance is entirely understandable. Reid was an intimidating figure indeed, drawing on his years as a police officer to bludgeon "his way to the top of Kingston's popular music scene" (Katz 2000: 12). According to David Katz, the decade Reid spent on the force left him a troubling obsession with firearms[22] as well as close ties with the Jamaican criminal underclass and factions of American organized crime (ibid.). He could be seen entering dances decked-out in an ermine cloak and a fake-jeweled guilt crown, topped off with a pair of Colt .45 revolvers in cowboy holsters and two bandoleer ammunition belts crossing his chest (Hebdige 1987: 63).

Not one for understatement, Reid was also fond of keeping a loaded shotgun slung over his shoulder with which he would announce, in the form of gunfire, his arrival or displeasure (ibid.; Bradley 2000: 31). Typically, these punctuating rounds would be fired into the air, or just above the heads of an unruly crowd (Hebdige 1987: 63). However, Reid was apparently also "much given to firing into rival's equipment as a way of disrupting their performance" (Bradley 2000: 31).[23] More than one of his former supporters recall dances in which Reid would be conspicuously toying with a live hand-grenade (ibid.). Reid's supporters were equally fearsome. Katz states that:

> Reid. . . had a legion of rough ghetto-dwellers and off-duty policemen who were always willing to lend a heavy hand after getting tanked up on Duke Reid's rum - men like the greatly feared Whoppi King, a notorious criminal commonly know as Public Enemy Number One for his ruthlessness.
>
> (Katz 2000: 12)

Given this background, one can begin to appreciate the gravity of a confrontation with Reid. Despite his boldness, Prince Buster was well aware of the precariousness of a visit to Reid's headquarters:

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[22] Reid had been a champion marksmen while on the police force (Barrow and Dalton 2001:14).

[23] For instance, Barrow and Dalton refer to a clash between Reid and Count Buckram in which Buckram's selection of records was putting Reid's to shame (2001: 14). Despite the fact that Count Buckram's equipment was just an American jukebox hooked up to an extension speaker, Reid became annoyed to the point where he ordered his followers to shoot up the offending jukebox (ibid.).

> Duke was sitting there, carrying a big gun, and he hold up his hand full of rings and laugh real deep. He say "Him [Dodd] sen' yuh, eh? Him sen' yuh?" It was very tense, as all of Duke Reid's men were there. And they still dread me inna sense. So I ask Duke to put the tune on the sound that was playing out there [in front of Treasure Isle liquor store] and he just laugh again.
>
> So I ask him straight out what is the name of the tune. And Duke Reid said "Later". . . Then I know, so when I get back all I can say is "Duke have it. The man have the tune." Coxsone said "What him say?" I said "The Duke said 'Later'", and I watch Coxsone *rock back*.
>
> (Buster qtd. in Bradley 2000: 38-emphasis added)

In order to lessen the damage of Reid's find as much as possible, Prince Buster insisted that Dodd and himself be at the dance during the climactic unveiling. Dodd was resistant, and his parents were convinced Prince Buster was mad and that if Dodd "went there they'd kill him" (Buster qtd. in ibid. 39). Prince Buster was blunt: "I told him if he didn't go he was finished" (qtd. in ibid.).

At about seven in the evening, the two walked over to Jubilee Hall Gardens where the dance was being held. Their walk from Dodd's liquor store to the dance seems like a scene from Sergio Leone's *For a Few Dollars More*: "We walk up King Street *tough*" (Prince Buster qtd. in ibid.). The dance was packed and all of Reid's top men were at the gate, but the two had no trouble getting in because of what was in store that night. Dodd and Buster's arrival was announced over the mic as they went over to the bar with Phantom, one of Reid's right hand men. Dodd bought some stout for the three of them and he and Buster waited apprehensively for some time.

> After a while Coxsone wanted to go, but I wouldn't let him. We had to wait until they play the tune because any time they play it and we're there the effect will die right away there, but if we'd gone it would go wide.
>
> So we wait. Then as the clock struck midnight we hear "Baaap. . . bap da dap da dap, daaaa da daap!". . . I was at the counter with Coxsone, he have a glass in him hand, he drop it and just collapse, sliding down the bar. I had to brace him against the bar, then get Phantom to give me a hand. The psychological impact had knocked him out. . . We hold him up against the bar and try to shut out the noise. Not only they play "Coxsone Hop", but they play seven of Coxsone's top tunes straight. When that happen, you know that tomorrow morning those tune'll be selling in every fried-fish shop. All we could do was wait it out until they stop playing his exclusive tunes, then we went up to where Tom [Wong] was playing for the rest of the night.
>
> (Buster qtd. in ibid.)

Prince Buster's blow by blow account offers practical insight into several important aspects of the sound system. The vital role of exclusives draws attention to the intensity of competition in the sound system, as well as how this competition pivots on what could be considered as a medium inflexibility (i.e., a constricted supply of imported U.S. rhythm and blues records). Of equal importance, the event at Jubilee Hall Gardens has been considered at length because it sets the stage for a crucial development taken up in the coming chapter.

This development centres around the growing importance of the *dub plate* in the sound system. As will be discussed, the encroachment of this new medium signals a major shift in the direction of the sound system and domestic recording industry. It is in this encroachment that one can perceive the increasing displacement of foreign influence in the sound system, as well as the beginnings of a fertile local recording industry. With these two related developments, Jamaica entered a new phase of musical self-sufficiency. As Barrow and Dalton point out, by the end of the 1950s:

> the cultural network which would nourish and sustain Jamaican music was in place, with all its salient features -- the dancehalls, the many specially designed sound systems, the deejays and selectors, the pool of musicians and singers, and *the entrepreneurs who could record the material.*
>
> (2001: 21-emphasis added)

Turning the last feature of this cultural network on its side, the following chapter begins by focusing, not on "the entrepreneurs who could record the material" but rather, on the *material* that "could record the material": the dub plate.

CHAPTER TWO
TECHNOLOGY VERSION

SECTION I
INSTRUMENTAL DUB PLATES: THE FIRST DUB-VERSIONS

Date: Late 1967
Locations: Duke Reid's Treasure Isle Studio, Kingston
"Ruddy" Redwood's "Supreme Ruler of Sound" sound system, Spanish Town

> One evening them a cut dub plate - soft wax they used to call it. When them cut, it's difficult to put in the voice, and Smithy [Treasure Isle engineer Byron Smith] a go stop it and Ruddy say, "No, make it run." When it done, him say it art, and me and Tubbys [Osbourne Ruddock, a.k.a. King Tubby] stand up right there so, me look 'pon Tubbys and Tubbys look 'pon me.
>
> Saturday night him [Ruddy] drop the singing cut first and the deejay name Wassy said, "I'm going to play part two!" and the whole dancehall start to sing the song pon the pure rhythm - him have to play it about ten, fifteen times because it's something new. I say, "Boy Tubbs, you see the mistake whe Smithy make? A serious thing!"
>
> (Bunny Lee qtd. in Katz 2003: 166)

"A serious thing" indeed! With this "mistake", a new approach to multi-track recording technology is initiated that would send shock waves through virtually all popular dance-based music. In Chapter One, I concluded with a discussion of the centrality of the exclusive in sound system competition. In the passage above, the quest for exclusivity leads to a new form of expression, discovered at the intersection between multi-track and dub plate technologies. Over the next decade, pre-existing recordings are broken into increasingly fragmented re-interpretations of the original. The lyrical space opened-up through this treatment creates vast new fields of expression for the deejay (Barrow and Dalton 2001: 231), as U-Roy's Treasure Isle recordings abruptly announced in 1970 (Katz 2003: 164). *Versions*, as they became known, assumed the B-side of most Jamaican singles that same year (Barrow and Dalton 2001: 227). Significantly, these versions offered even the smallest sound system a means of creating their own voice (ibid. 233). By having their resident deejay toast over these versions, each sound system could create a sound that was unique to them. In contrast to the

restricted vinyl supplies described in the previous chapter, instrumental dub plates, and later B-side versions, brought considerable flexibility to the sound system. With this flexibility came radical experimentation.

When put into relief against the broader context of innovation in Jamaican music, such experimentation reveals itself to be part of an extensive history of re-interpretation of pre-existing forms. For example, one can detect this tendency in Machuki's pioneering deejay practices (toasting and peps), described in Chapter One. A strikingly similar pattern also seems present in the songs of Slim and Sam. Active in Kingston in the 1920s and '30s, these itinerant troubadours would write lyrics about current-events and chant them over tunes "usually taken from the widely used Sankey hymnal" (Stolzoff 2000: 37). As Stolzoff explains in a footnote, the Sankey Hymnal has resurfaced repeatedly in Jamaican popular music:

> These hymns collected by Ira Sankey and Dwight Moody, known as the "Sankey Hymnal", provided the basis for much of Jamaica's sacred music -- from the Revivalists to the Rastafarians -- and has also served as a cultural reservoir that has been repeatedly tapped by the composers of popular songs in every generation (Waters 1985: 75).
>
> (Stolzoff 2000: 253 n. 24)

However, this is not to argue that these or any other Jamaican innovations are in any sense "derivative", in fact, quite the opposite is the case. Dick Hebdige identifies this uniquely Jamaican practice of modification and re-interpretation with the term "version" (1987: 12-16). In addition to its suitability and richness as "one of the most important words in reggae" (12), Hebdige explores "versioning" as a methodological tool and as a means of re-evaluating notions of originality. In doing so, he suggests certain relations between notions of originality and material constraints (i.e., constraints of access, ownership and property relations).

As a form of (re-contextualized) quotation, the practice of versioning also has implications for semantic closure, both in the immediate musical and print-based context and more broadly. "The original version takes on a new life and a new meaning in a fresh context. Just like a rhythm or a melody which is brought in from another source. . . It's a democratic principle because it implies that no one has the final say.

Everybody has a chance to make a contribution. And no one's version is treated as Holy Writ" (ibid. 14).[1]

Hebdige's examination of versioning provides an excellent basis for appreciating the genesis of the instrumental dub-plate. However, where Hebdige draws attention to versioning in its stylistic dimensions, this thesis attempts to explore how versioning also operates on a technological level. This is not an attempt to discount one in favour of the other, but rather, a way of examining how their movements are interconnected. Take the example of U.S. rhythm and blues, which provided the initial model for Jamaican boogie[2], later developing into ska. Several routes of transmission have been considered in the previous chapter. Imported records, in particular, have been identified as paramount to the stylistic and technological development of the sound system. As the following discussion of the dub plate suggests, the versioning U.S. rhythm and blues is also about a versioning of the American record industry and its protocols.

Both the beginnings of the Jamaican record industry and the event described in the opening quote are enabled by a medium that came to undermine the hold of imported formats and styles.[3] This medium is the acetate (a.k.a. dub plate, soft wax). The acetate is a metal phonograph-shaped disc, coated with an acetate lacquer, that typically functions as an intermediate stage in the process of commercial mass-production (Stolzoff 2000: 58). Using a dub plate cutting machine, or cutting lathe, the recording is cut directly onto the disc. Normally, a mold is then cast

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[1] "Holy Writ" is an interesting choice of words, for it suggests an interesting relation between written knowledge and notions of finality. According to Walter Ong, the tendency toward closure is a medium-specific characteristic: "Print encourages a sense of closure, a sense that what is found in a text has been finalized, has reached a state of completion. This sense affects literary creations and it affects analytic philosophical or scientific work. . . Print culture gave birth to the romantic notions of 'originality' and 'creativity', which set part of an individual work from other works even more, seeing its origins and meaning as independent of outside influence, at least ideally" ([1982] 1999: 105-106).

[2] Hebdige 1987: 64/65; Barrow and Dalton 2001: 3/4; Katz 2000: 16; 2003: 1. In order to avoid potential confusion, one might mention that boogie is a specific style of rhythm and blues. It was this "boogie-style" which dominated the first wave of Jamaican rhythm and blues vocal productions (Barrow and Dalton 2001: 21), beginning around the mid to late 1950s.

[3] For example, this pattern is present in Bilby (1995: 156), Barrow and Dalton (2001: 17, 20/21), Chang and Chen (1998: 22) and Katz (2003: 14), although not explicitly described as such (i.e., in terms of an Innisian medium rigidity and centre-periphery relation).

from the disc and this mold is used to create a metal stamper capable of pressing mass numbers of the product for commercial release in vinyl format. Unlike a master tape, acetates can be played directly on a record player and require relatively little investment in comparison with the overhead required to commit a recording to vinyl (Barrow and Dalton 2001: 21). However, in contrast with both a master tape and mass produced vinyl records, a dub plate wears out after about 30 to 50 playings. This rapid rate of degeneration makes for a precarious format for masters, particularly for those smaller producers who often did not have the resources to invest in more durable formats.

Due to the lack of any mastering facilities for cutting a metal stamper on the island until the end of the 1950s, pressing anything that diverged from foreign-established norms would be an exceptionally costly and risky endeavour (Chang and Chen 1998: 85). This point is reinforced by the fact that the first pressing facilities are primarily established to press foreign product for large U.S. record companies looking to expand into the Caribbean market during the postwar economic boom (ibid.; Bradley 2000: 23/24). The earliest rudimentary recording studios, such as Stanley Motta's on Harbour Street, may have cut directly on to acetates (Katz 2003: 349), bypassing a master tape altogether: literally "one-offs", as these dub plates became know. This form of master appears to have effected the understanding of ownership from early on: "as regards copyright, the producer would retain all rights on the finished acetate to do with as he liked. Importantly, it was ownership of that particular recording that counted, not ownership of the material it featured" (Bradley 2000: 41). With ownership being based on recordings, print-based copyright legislation was slow coming, and the first copyright law was not introduced by parliament until 1993 (Stolzoff 2000: 177). According to Stolzoff, many of the same difficulties around ownership and royalties persist (ibid.).

In addition to enabling producers to inexpensively gauge and build-up mass demand for a local recording or a new innovation (Barrow and Dalton 2001: 21), the acetate aided sound system owners in their quest for sound system exclusivity, so central to a successful operation. In fact, sound system giants such as Coxsone Dodd and Duke Reid had no intention of making music for commercial release when they began

recording local musicians on acetate for exclusive play on their respective sound systems.[4] Lloyd Bradley reports that "Coxsone burst out laughing when, in 1959, somebody casually mentioned to him that his recordings had a value way beyond the Downbeat sound system" (2000: 44). Despite the initial laughter, Coxsone Dodd, Duke Reid, "King" Edwards and (up-and-coming soundman/producer) Lloyd "the Matador" Daley would all be pressing these originally sound system-bound productions into 7" singles by the end of the decade (Barrow and Dalton 20/21; Katz 2003: 17).

Interestingly, the growing importance of this peculiar medium (the dub plate) is related to the dwindling supply of an imported style and format. Highly favoured by sound system clientele, 78 rpm records of "the more adult, harder-edged and 'blacker' style of jump blues" (ibid. 17) became increasingly scarce with the shift from rhythm and blues to rock and roll in the U.S.[5] Although the new style was having considerable "crossover success" with white teenage audiences in the U.S., rock and roll generally had a detrimental effect on the Jamaican dance floor (ibid.). "We always loved rhythm and blues", states Dodd.[6] "But that got obsolete because the rhythm and blues artists slowed down. The rock 'n roll didn't have the strong bouncy beat that we were looking for. This is why we eventually had to go in the studio and try to make recordings that the [sound system] fans would love".[7]

This is not to argue that recording facilities are absent or insignificant on the island up until this point, but that their function in relation to the sound system is different. What appears to change the situation is the entry of the acetate as a liaison and accelerator in the *sound system-recording studio* circuit of production. This entry parallels the transition in recording from "first wave" *mento*[8] productions to the

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[4] As Chang and Chen note, "The sound system operators had no intention of selling records when they began producing music. They simply wanted "hard" tunes for their system dances, records which people would dance to" (1998: 22).

[5] Hebdige 1987: 64/65; Bilby 1995: 156; Barrow and Dalton 2001: 3; Chang and Chen 1998: 21.

[6] Dodd qtd. in interview with Adam Glickman, *Tokion* 32, Nov./Dec. 2002: 41.

[7] Dodd qtd. in ibid.

[8] Mento is an indigenous folk style drawing on a diverse array of influences. Barrow and Dalton note such influences as "the music of the *Pocomania* church, the fife and drum music of the *Jonkanoo* masquerades, the adoption of the European *quadrille* and the long tradition of *work*

second, "more substantial", wave of Jamaican rhythm and blues (ibid. 17). "Calypso and mento were being usurped by Jamaican rhythm and blues as a direct byproduct of sound system activity", confirms David Katz (2003: 13). In the process of turning the local Jamaican musical network increasingly inward, in a *tightening* of the sound system-recording studio circuit of production, the conditions for a fertile domestic record industry are established (Barrow and Dalton 2001: 21).

Roughly ten years after this second wave of recordings, the acetate and the arrival of multi-track recording combine to unleash another pivotal medium-specific innovation. With Ruddy Redwood and Byron Smith's "mistake", this combination yields the *instrumental-version*, forerunner to what would later become the *dub-version*. Here, the experimental and re-interpretive function of the acetate is accelerated and intensified into a mixing technique reveling in fragmentation. Barrow and Dalton break this development into three general phases: "instrumentals", beginning in 1967 at Ruddy's sound system, "versions" emerging around late 1968 and, in 1972, dub proper, "in the now familiar sense of radically remixed versions" (2001: 227). As touched on above, this last phase is characterized by a mixing technique which forefronts the technologically fragmented process of multi-track production, often through a minimalist, "heavy", bass and drum driven sound. It is precisely these kind of treatments which underscore the notion of dub as a versioning of technological protocol. In the following section, various approaches to such technology movements and translations are considered.

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songs derived directly from Jamaica's plantation system" (2001: 3). Prior to the 1950s, mento was "the closest thing to an indigenous popular music" (Bilby 1995: 153). Perhaps not surprisingly, with the formation of a rudimentary domestic recording industry, mento became "the first recorded Jamaican music" (Barrow and Dalton 2001: 3). Although its roots in indigenous traditions would appear to make mento a natural choice, it was not so much local markets that initially led to its being recorded. Rather, pioneering mento recordings were largely an attempt to capitalize on the recent international vogue for calypso (a Trinidadian form bearing a superficial resemblance to mento), particularly in "the overseas 'ethnic' market" (Katz 2000: 16; Barrow and Dalton 2001: 7). Although met with little interest abroad, Katz states that mento airplay on RJR (Radio Rediffusion Jamaica), Jamaica's first and only station at the time, helped demonstrate the viability of recording local rhythm and blues for the sound system (2000: 16).

SECTION II
TECHNOLOGY: WHAT'S IT TO YOU?

The influences of the Jamaican sound system and record industry on western popular music and culture have been duly noted in much of the most recent flood of literature on the subject.[9] Although much thorough work has been done which takes technology into account when tracing developments in this circuit of production, a comprehensive history of the role of technology has yet to be written.

One way of exploring this generally overlooked area is to approach technology as a translator of experience and shaper of new social worlds. According to Marshall McLuhan, "technologies are ways of translating one kind of knowledge into another mode" (1964: 56). For McLuhan, this translating function is expressed in Lyman Bryson's phrase, "technology is explicitness" (qtd. in ibid.). "Translation is thus a 'spelling-out' of forms of knowing" (ibid.). McLuhan examines this process of translation as a means of better understanding the explicit nature of technology. As Marx identifies below, such studies of technology have been conspicuously lacking, and for good reason.

In Chapter One, considerable time was spent reviewing the work of Harold Innis, specifically the role of communication technologies in extending the power of empires. Innis's understanding of communication technologies also holds significant value as a research tool. This argument is made by Joshua Meyrowitz, who characterizes this approach with the term "medium theory" (1994: 50). Medium theorists hold that media, rather than simply channeling data between environments, might actually be "shapers of new social environments themselves" (ibid.). This understanding is at the heart of McLuhan's notion of media as translators. The influence of this approach can perhaps already be detected in Section I of this Chapter. Here, and in the following sections, the sound system is positioned as an environment and system of production which is fundamentally embodied in the encounter with a series of new

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[9] As discussed by such authors Bilby (1995), Barrow and Dalton (2001; 1997, 1st ed.), Katz (2000; 2003), Lesser ([1989] 2002), Chang and Chen (1998), Bradley (2000; 2002) and Stolzoff (2000).

technologies. In this sense, new media are not simply neutral containers into which raw data, or content, can be injected, stored and transported[10]. Rather, engagement itself entails the creation of new social worlds.

In the previous chapter, it was also noted that print represents a revolution in the process of production. As McLuhan states, "With typography, the principle of movable type introduced the means of mechanizing any handicraft by the process of segmenting and fragmenting an integral action" (1964: 160). This revolution in the process of production is the same that would eventually tear its way through every area of manufacture, resulting in the industrial revolution of the eighteenth century, among other things.[11]

Mechanization had a decisive effect on the relation between the capitalist and the wage-labourer (Marx, *Capital*, vol. 1: 427). While the ongoing contest between these two forces dates back to the very origin of capital, "only since the introduction of machinery has the workman fought against the instrument of labour itself, the material embodiment of capital" (ibid.). Indeed, the introduction of machinery into the capitalist process of production marks the emergence of a new social world in which *machine becomes mediator* of the class struggle.[12] (The mediating position of mechanization in this process is discussed further in footnote 20 of this chapter.)

As the attempts to introduce the ribbon-loom testify, the penetration of machinery into manufacture was not without altercation. Marx states that, in the seventeenth century "nearly all Europe experienced revolts of the workpeople against the ribbon-loom" (*Capital*,

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[10] Broadening the traditional scope of the concept of "media", McLuhan posits "the idea of transportation as communication". "Each form of transportation not only carries, but translates and transforms, the sender, the receiver, and the message" (1964: 90).

[11] As Walter Ong notes: "The first assembly line, a technique of manufacture which in a series of set steps produces identical complex objects made up of replaceable parts, was not one which produced stoves or shoes or weaponry but one which produced the printed book. In the late 1700s, the industrial revolution applied to other manufacturing the replaceable-part techniques which printers had worked with for three hundred years" ([1982] 1999: 98). It is on this basis that Ong states, "it was print, not writing, that effectively reified the word"; "Typography had made the word into a commodity" (ibid., 105).

[12] "The history of technology is a history of the moving resolution of class forces", notes Robert M. Young (*A Dictionary of Marxist Thought* 1991: 535).

vol. 1: 428). Abbé Lancellotti describes the shocking reaction to this machine's invention "in a work that appeared in Venice in 1636, but which was written in 1579":

> Anthony Müller of Danzig saw about 50 years ago in that town, a very ingenious machine, which weaves 4 to 6 pieces at once. But the Mayor being apprehensive that this invention might throw a large number of workmen of the streets, caused the inventor to be secretly strangled or drowned.
>
> (Lancellotti qtd. in ibid.)

Despite the secrete execution of its inventor, the ribbon-loom design spread throughout Europe, followed immediately by widespread revolt and prohibition. For example, in Lyden, the Town Council was forced to ban the machine until 1629 due to the riots of ribbon-weavers. "It was also prohibited in Cologne in 1667, at the same time that its introduction into England was causing disturbances among the working people. By an imperial Edict of 19th Feb., 1685, its use was forbidden throughout all of Germany. In Hamburg it was burnt in public by order of the Senate" (ibid.).

A curious reaction, one might think, to "a machine for weaving ribbons and trimmings" (ibid.). However, as Marx explains:

> This machine, which shook Europe to its foundations, was in fact the precursor of the mule and power-loom, and of the industrial revolution of the 18th century. It enabled a totally inexperienced boy, to set the whole loom with all its shuttles in motion, by simply moving a rod backwards and forwards, and in its improved form produced from 40 to 50 pieces at once.
>
> (ibid.)

As the above suggests, technology occupies a fascinating and instructive place in Marx' analysis of capitalist production. In many ways, his analysis confirms the notion of technology as "explicitness". For instance, in the passage above, the introduction of mechanization creates a new social world of production in which skilled adult labour can be replaced, with far greater cost efficiency, by that of a child. This translation of mechanization into manufacture thus transforms not only the process of production but also the workforce. What could be more explicit than the creation of a workforce composed of child labour.

Yet despite its initially foreign appearance, technology in this analysis is to be understood as an extension of human knowledge. In

Grundrisse, for instance, Marx states: "Nature builds no machines, no locomotives, railways, electric telegraphs, self-acting mules, etc. These are the products of human industry; natural material transformed into organs of the human will over nature, or human participation in nature. *They are organs of the human brain, created by the human hand*; the power of knowledge objectified" (Marx qtd. in Young 1991: 535).[13] But under capitalist production, with this creative extension of the human will and brain, this externalization into objectified knowledge, comes an inverted tendency towards dismemberment and alienation.[14] In fact, as the example of the ribbon-loom demonstrates, it is often quite difficult to distinguish on what side the formative impetus primarily falls. "It would be possible to write a whole history of the inventions made since 1830, for the sole purpose of providing capital with weapons against working-class revolts" (*Capital*, vol. I: 436).

Marx also provides suggestions as to how the study of technology might be used to penetrate the process of capitalist production. In a footnote of "Machinery and Modern Industry", he identifies the need for a critical history of technology demonstrating the collective character of the overwhelming majority of eighteenth century inventions (ibid. 372 n.3). This comment is made in connection with the spinning machine, the instrument credited with directly ushering in the industrial revolution of the eighteenth century. In contrast with Darwin's work on the history of "Nature's Technology" ("i.e., in the formation of the organs of plants and animals, which organs serve as instruments of production for sustaining life"), the history of human technology has been largely neglected. Marx finds this neglect of human history puzzling because, in addition to being easier to compile, "Technology discloses man's mode of dealing with Nature, the process of production by which he sustains his life, and

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[13] McLuhan's description of mechanization bears a striking resemblance here: "What we call 'mechanization' is a translation of nature, and of our own natures, into amplified and specialized forms" (1964: 56).

[14] On the negative side of this creative extension of the human mind, roots-dancehall singer Luciano similarly remarks: "I'm not really hitting against technology, but remember His Majesty [Haile Selassie] says, technology we cannot fight because the mind is so creative that we gonna create ourselves out of existence. Our inventions are things that destroy us. It's us that can be the problem" (Luciano qtd. in Bradley 2002: 149).

thereby also lays bare the mode of formation of his social relations, and of the mental conceptions that flow from them" (ibid.).

Appreciating all these dimensions requires a certain sensitivity to moments and regions of transition. In the 1970s, studies in the history of technology increasingly turned attention from "invention" to what has been called the "development phase of technological change" (Pursell 1980: 86). Rather than the linear progression that tends to emerge in investigations preoccupied with invention (i.e., invention-development-innovation), work on the development phase centers on the interaction between model and environment.[15] As the brief discussion of Marx suggests, the value of studying this interactive process has been identified for some time (i.e., consider the interaction involved in a study of the communal, socio-political and conceptual aspects of invention).[16] Nor is insight limited to those seemingly central technologies, such as the steam engine, which has commonly figured as the initiating force behind the industrial revolution. In fact, by examining the process of interaction between model and environment, Marx makes a rather surprising observation: "The steam-engine itself, such as it was at its invention, during the manufacture period at the close of the 17th century, and such as it continued to be down to 1780, did not give rise to any industrial revolution. It was, on the contrary, the invention of machines [i.e., the ribbon-loom and spinning machine] that made a revolution in the form of steam-engines necessary" (*Capital*, vol. 1: 375).

In the last century, the encounter with mechanization has been traced through some more obscure regions in the work of Siegfried Giedion (1948). Giedion's typological approach, panoramic yet close range, enables him to survey a diversity of "humble objects" (ones of little historical import) that have "shaken our mode of living to its very roots" (ibid. 3). He explores the eighteenth century as a transitional

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[15] Hughes 1976. For example, Hughes describes development as "a move away from the elegant but abstract concepts associated with invention to the construction and testing of models"; a construction and testing in which changes in design occur in response "to the demands of environment" (qtd. in Pursell 1980: 86).

[16] A parallel might be drawn between this more recent shift from "invention" to the development phase technological change, and Marx's analysis of capitalist production in terms of process (in contrast with the focus on product which characterized the classical economic model). Not unlike dub mixing, both approaches can be seen as shifting the focus from product to process.

period of coexisting mental conceptions, the miraculous and the utilitarian, with the mechanical duck of Rococo inventor Jacques de Vaucanson (ibid. 34-35). Baths, bread, locks, slaughterhouses, furniture, household technology, as well as more abstract themes, such the conceptualization and modeling of movement, are also among those things repositioned in the encounter with mechanized production. In a similar manner, Otto Mayr (1970) follows feedback control, a founding principle of cybernetics, back to its initial mechanical appearance in devices ranging from Hellenistic float valves to James Watt's centrifugal governor.

Closer to the present context of recording and playback technologies, Jonathan Sterne (2003) examines the development of Alexander Graham Bell and Clarence Blake's ear phonautograph. "A direct ancestor" of the phonograph and telephone, this "curious machine" translated sound vibrations into visible form, on a sheet of smoked glass, via an excised human ear (ibid. 31). Sterne explains that the two human ears used in the construction of Bell and Blake's phonautographs (they built two, so they could each have one) were likely secured through the Massachusetts Anatomical Act of 1831 (ibid. 69).

Similar to the British Anatomy Act introduced the following year, this act made the dead bodies of the poor available to medical schools and researchers for dissection (ibid.). The state, by taking advantage of its responsibility for burying those unable to afford a funeral, was able to provide medicine with a steady flow of bodies while easing fears of grave robbery, a serious concern across the propertied classes (ibid.). Ruth Richardson (1987) describes such acts as nothing less than a form of class warfare on the poor (Sterne 2003: 69). As Sterne observes, it is precisely these antagonistic social relations which make the construction of the ear phonautograph possible. "The expropriation of anonymous corpses as fixed capital for the production of knowledge is illustrated nowhere better than in the history of an ear machine" (ibid.).

The above is an attempt to establish, through some concrete examples, why and how technology has been considered important, particularly in ways that contribute to the present context. More specifically, I have mentioned these projects because they suggest some

of the possibilities of what can be understood as an *encounter model*.[17] *Encounter* can occur in the development phase, that localized interaction between model and environment generally regarded as the starting point for a particular technology. However, extending beyond this immediate region of development, encounters and interactions also stretch into the historical and spatial distance (backward and outward). For example, Mayr and Giedion describe encounters as they extend primarily into the historical distance.

Spatially, on the other hand, one finds similar negotiations on the periphery of those imperial centers from which technological developments tend to emanate. As has been discussed, this pattern is explored extensively in the work of Harold Innis. Interestingly, this latter orientation is often relegated to an entirely different area, that of *technology transfer*, in the history of technology (Pursell 1980: 87-88). Understood in a more integrated manner, one can appreciate that developmental interactions between model and environment and the apparently distinct area of technology transfer are two aspects of the same process (i.e., with sufficient perspective, rarely is development not a transfer of some sort).[18]

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[17] A term which was drawn to my attention by Professor David Crowley, particularly after being referred to the work of Siegfried Giedion (1948), Lewis Mumford (1952) and Carlo Ginzburg (1980; 1983).

[18] For example, Donald Hill's translation of *The Book of Knowledge of Ingenious Mechanical Devices* (1204/1206 A.D.; Eng. trans. 1974) by Ibn al-Razzaz al-Jazari suggests that, while no precise link has been documented, many of the general principals of European machine design were present in medieval Islamic technology. In the Foreword to this translation, Lynn White writes: "In my own explorations of medieval European technology, I have been constantly handicapped by the dearth of scholarly material available on comparable Near Eastern activities. . . These examples, and others, suggest Muslim transmission of Hellenistic, Far Eastern, and indeed Muslim inventions to the West" (1974: xiii). Although in this work, Hill concludes that it cannot be known if the work of al-Jazari or his predecessors ever passed over to Europe (ibid. 279), surveyed over a longer span of time, the shift between these contexts can be understood as a form of transfer (Giedion 1948: 34). According to Siegfried Giedion, this shift involves a significant change in orientation. As touched on earlier, with the industrial revolution of the eighteenth century, mechanization is increasingly withdrawn from service of the miraculous and redirected towards (the utilitarian) purposes of production (ibid.).

In a later work with Ahmad al-Hassan, Donald Hill and al-Hassan refer to the more decisive instance of Near Eastern technology transfer in the case of paper-making (al-Hassan and Hill 1986: 190). As mentioned in the previous chapter, al-Hassan and Hill describe the introduction of the paper-making industry here as "a milestone in the history of mankind" (ibid.). The effect of paper on the Islamic World in many ways paralleled its later combination with print in Europe: "The

Returning to the realm of Jamaican music with this spatial notion of encounter in mind, it is this playing out of technology at the margins of empire which seems especially suited to a study of the dub-version. As will be discussed, *the practices from which the dub-version emerges are about a "peripheral" mass encounter with multi-track recording* (via the sound system-recording studio circuit). It might also be added that, in addition to the inherent "repeatability" of the vinyl medium, multi-track recording represents the application of what could be considered as mechanistic principals[19] to the area of audio recording technologies.[20] In

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manufacture of paper created a cultural revolution" (ibid. 191). "Writing material was freed from monopoly and paper became a very inexpensive product" (ibid.). Paper manufacture facilitated the production of books "on an unprecedented scale, and in less than a century hundreds of thousands of manuscripts and books spread throughout Islamic countries. . . Science, literature, philosophy, and all fields of knowledge became, for the first time in the history of the Near East, available to all literate persons in every Muslim country" (ibid. 191-192). Based on their findings in this work, al-Hassan and Hill are able to take a much stronger position on Near Eastern technology transfer to Europe (in comparison with Hill's softer position in the aforementioned 1974 translation of *The Book of Knowledge of Ingenious Mechanical Devices*). For example, al-Hassan and Hill point to Charles Singer's *A History of Technology*, which refers to the Eurocentrism of Western historians in regards to this transmission (1986: 32-33). "Europe, however", writes Singer, "is but a small peninsula extending from the great masses of Afrasia. This is indeed its geographical status and this, until at least the thirteenth century AD, was generally also its technological status (Singer qtd. in ibid. 32). "In skill and inventiveness during most of the period AD 500 to 1500, Singer continues, 'the Near East was superior to the West. . . For nearly all branches of technology the best products available to the West were those of the Near East. . . Technologically, the West had little to bring the East. The technological movement was in the other direction'" (ibid. 32-33). Similarly, Marshall McLuhan (drawing on the work of Harold Innis) explores the importance of this movement, particularly in terms of the introduction of paper, in the development of modern Western cities (Innis 1951: 50-51; McLuhan 1964: 101).

[19] Particularly the mechanical division and remodeling of the process of production into specialized segments of operation, i.e., the specialized tracks of multi-track recording.

[20] Although it is actually the manufacture period that creates the division of labour and tool specialization on which machinery can then model itself (*Capital*, vol. 1: 338, 341-342), Marx perceives something unique in mechanistic fragmentation. In tracing the conversion of instruments of labour from tools to machines, he finds that mechanization represents a fundamental break in the organic limits imposed on the handicraftsman by his tools and body (ibid. 374). As a result of the number of tools a machine can bring into play simultaneously, the workman is put in a new relation with his instruments of labour. His specialized tools and functions are transformed into an organized system of specialized detail machines, to which "he becomes a mere appendage" (ibid. 379, 386). The relation between detail machines, while growing out of the "decomposition" of handicraft and manufacture processes, pushes firmly away from the subjective concerns of the worker (ibid. 380). The product assumes a form of constant transition, experienced only as a repetition of detail (ibid.). "It is a common characteristic of all capitalist production. . . that the worker does not make use of the working conditions. The working conditions make use of the worker; but it takes machinery to give this reversal a technically concrete form" (Marx qtd. in Benjamin 1968: 175).

the dub-version, these mechanistic principals (in the form of multi-track technology) become the material basis for the creation of new social worlds. Perhaps the best way of exploring these ideas is to continue the introductory overview; exploring developments through encounter.

The Sound System:
From Public Address System to the "Williamson Form"

The brief overview in Section I of this chapter proceeds with a roughly chronological account. Although this overview has focused on the example of the acetate, the arrival of numerous other pertinent technologies before this has yet to be identified or examined. In addition to the equipment necessary for acetate and vinyl record production (i.e., dub plate cutting machines, microphones, tape recorders, record presses, mastering facilities--for casting metal stampers), there is an entire array of technologies directly implicated in the development of the sound system. Aside from the obvious centrality of the record player, discussed later in this chapter, public address (P.A.) systems provided the initial model by which early sound system operators reached their clientele (Stolzoff 2000: 38, 42). The more specialized sets which followed were basically an elaboration on these simple systems. However, a qualitative shift also seems to occur with the introduction of frequency differentiated amplification in 1947, and an unprecedented new scale in speaker design (notably with the "House of Joy" speaker) around 1950 (ibid. 44-45; Barrow and Dalton 2001: 11).

Reflecting on the passage of these technologies for a moment can give some context to the genesis of the sound system. All of those devices and advances mentioned above appear most prominently in technology flows established by the Second World War. With the eventual involvement of the U.S. in the war effort, Jamaica found itself with two American military bases on the island (at Sandy Gully and Vernon Fields) as well as a recreational centre for the soldiers in Kingston "where they hired all types of local bands".[21] Although American music,

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[21] Stolzoff 2000: 38; Linton Kwesi Johnson, *From Mento to Lovers Rock: A History of Jamaican Popular Music*, BBC [n.d.]; Clarke 1980.

most notably big-band swing, already had a growing following in Kingston previous to this presence, with the U.S. occupancy of the island during wartime, American styles became established like never before (Stolzoff 2000: 35-38). According to Stolzoff, aside from the influx of the latest American musical tastes, this military presence also significantly accelerated the diffusion of new playback technologies to the island (ibid.). Fundamental to the formation of the sound system, this diffusion brought a proliferation of those components necessary for the construction of basic P.A. type systems described above (ibid.).

Continuing with Stolzoff's narrative, the war and its aftermath brought with it a drastic decline in Kingston's once vibrant live music scene (ibid. 41-43). In the rebuilding campaign following the war, the British government sought to take advantage of cheap labour in the colonies by creating an "open-door policy" (ibid. 41). Of the 160 000 Jamaicans who, in the 1950s alone, migrated to the U.K. (Munroe 1972: 102), Stolzoff states Jamaica's trained musicians composed a "significant fraction" (2000: 41). If one also includes emigration to Canada and the U.S. during this decade, this "exodus of skilled and unskilled labour" amounts to over a quarter of a million people (Bradley 2000: 13). Hedley Jones, musician and pioneer of frequency differentiated amplification, recalls finding a stark change in Kingston's live music scene upon his return from military service. In contrast to the "twenty to twenty five big bands and small combos" Stolzoff reports playing Kingston in the 1930s, Jones says he found as few as two bands when he returned there in mid 1946 (Stolzoff 2000: 35, 41). Jones explains that the relative scarcity of musicians was further compounded by the fact that those who did not leave Jamaica sought employment in hotel bands on the North Coast (ibid. 41).

These domestic and international labour flows draw attention to the importance of international capital, particularly in the postwar economic boom. As Bradley explains, with the swelling of an international jet-set holiday market came an abrupt expansion of the hotel and tourism industry on the island (2000: 12). Although seemingly unrelated, bauxite mining also made significant inroads parallel to this expansion. With the pressure from commercial airlines and airplane manufacturers, the international aluminium industry shifted into "overdrive" (ibid.). In

addition to Jamaica's suitability as a holiday destination for the affluent, the island's red soil offered an abundant supply of bauxite (ibid.), also known as "aluminium ore" due to its centrality in aluminium production. Reynolds, the Kaiser Bauxite Company and Alumina Jamaica (a subsidiary of Alcan) all staked claims on the island's interior (Sherlock 1984: 26), making Jamaica the largest bauxite supplier in the world from 1950 to 1957 (Bradley 2000: 12).

The Second World War launched companies such as Alcan and Alcoa into positions of global dominance when generous subsidies and contracts for military aircraft created an immense capacity and infrastructure.[22] Alcan also discovered that production costs could be cut considerably by processing the alumina in Canada using heavily subsidized hydro electric power.[23] This meant that production in Jamaica was limited to mining and processing the mined bauxite with caustic soda, the effluent of which creates highly caustic mud lakes.[24] The white powder which resulted, alumina, could then be shipped to Canada for the power-intensive transformation into aluminium.[25]

In addition to the intrusion of bauxite mining into agricultural areas, the Jamaican government's eagerness for foreign investment in the 1960s meant that North American companies soon bought up eight percent of the island.[26] These companies became landlords to thousands of tenant farmers, opened huge corporate farms and became Jamaica's largest producers of milk and beef.[27] George Beckford, an economist at the University of West Indies, explains how this influx of international capital withdrew considerable land and resources from Jamaicans.[28] A massive rural out-migration, both to Kingston and abroad, was necessary in order to sustain the rhythm of development imposed by these

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[22] *Super-Companies*, National Film Board of Canada, 1987; dir. Boyce Richardson, prod. Barrie Howells and Mark Zannis.

[23] ibid.

[24] ibid.

[25] ibid.

[26] ibid.

[27] ibid.

[28] ibid.

multinational companies.[29] As explored in the more recent documentary *Life and Debt*, this rural out-migration and growing dependence on foreign producers, particular in terms of food staples and other basic necessities, is a pattern that has continued to worsen.[30] Perhaps the most memorable and succinct summary of the implications of multinational-driven industrial farming in this film comes from an onion farmer. He describes the situation as follows:

> We [Jamaicans] use machet[e], to farm.
> But, the world in general use machine.
> So, when you check it out:
> Can machet[e] compete with machine?[31]

Thus, while "vast stretches" of the North Coast were being bulldozed for the construction of luxury hotel suites, bauxite mines and industrial farms displaced hundreds of thousands living inland, flooding the already dire Kingston ghettos with those evicted from their small-holdings (Bradley 2000:12, 14, 87). "Around 300 000 people were forced to move in order to create 10 000 new jobs" (ibid. 14). It is the increasing urban concentration of these and other dispossessed country folk which fuels the rise of the sound system and, stemming from this, the development of the domestic record industry (Bilby 1995: 151).[32]

Yet before this industrial "development" and rural to urban displacement became pronounced, the wartime movement of skilled labour brought with it a powerful shift in the embryonic sound system. In 1943, Hedley Jones left Kingston for England to join the Royal Air Force

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[29] ibid.

[30] *Life and Debt*, A Tuff Gong Pictures Production, Toronto: Mongrel Media, 2001; dir. and prod. Stephanie Black.

[31] ibid.

[32] Mass rural to urban migration is a central aspect of Perry Henzell's film, *The Harder They Come* (1971): "*The Harder They Come* is the big city seen through the eyes of a country boy, it's really the story of an illusion. The promise of the city was a very cruel illusion, because somebody like Ivan coming to the big city has been filled full of 'you can get it if you really want', but the fact is you *can't* get it if you really want. . . Around that time, huge quantities of youngsters were coming in from the countryside, in Jamaica, in Rio, in Jakarta, in Johannesburg, all over. They were flooding into the city, brought by the promise of the transistor radio, which was beaming that dream into the countryside for the first time in history. . . I think the real message of *The Harder They Come* has been hugely misunderstood" (Henzell qtd. in Bradley 2002: 66). Note the role of the radio.

(Stolzoff 2000: 38). There Jones was trained as radar technician/radio engineer (ibid.; Kingston and Kingston 1998: 128). During this training, he describes being exposed to "the most advanced electronics of the day" (Jones qtd. in Stolzoff 2000: 44). Returning to Kingston in mid 1946 (going against the aforementioned "exodus"), Jones took advantage of his military training in electronics by opening a radio repair shop at 136 and $^{7}/_{8}^{ths}$ King Street (ibid. 42). Recognizing that the demand for records was growing, he soon branched out to include a record department at the same location, calling it Bop City after the popular New York jazz nightclub (ibid.). In order to advertise his records, Jones constructed a special "Williamson form" amplifier: playing from his shop, he would hail passers-by with samples of his selection (ibid. 44). While the practice of playing music to attract customers was not uncommon,[33] the Williamson form amplifier was a "complete departure" from what was being used in Jamaica at the time (Hedley Jones qtd. in Stolzoff 2000: 44).

The following account helps to demonstrate the extent of this departure. On a Saturday night in 1947, shortly after the construction of his first Williamson form amplifier, Jones was busy playing some Afro-Cuban and jazz 78s (i.e., Perez Prado, Charlie Parker) out of his store (ibid.). As chance would have it, that same night, Tom Wong was scheduled to play across the street at a dancehall called the Jubilee Tile Gardens (ibid.). Drawn to the sound coming out of Jones' shop, a crowd began to gather on the street below, eventually growing to the point where it clogged the artery in what Jamaicans call a "roadblock". As Jones recalls, "They had never heard this clarity [of sound], with bass

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[33] In fact, as mentioned in Chapter One, a number of authors have credited the playing of music by shopkeepers with spurring the early sound system (i.e., Bradley 2000: 4). Others have also emphasized the role of seasonal migrant labour, particularly those networks extending into the American South following W.W.II. For example, it is while working as a crop picker in the U.S. and being exposed to outdoor dances and block parties, held there by black Americans, that Coxsone Dodd considers entering the music business in the early 1950s (Katz 2000: 13; 2003: 10). These networks also facilitated the movement of technology. As Katz writes, "These huge sets of sound equipment first appeared on the island after Jamaicans who had gone to Florida or elsewhere in the American South to do casual labour attended dance parties held by black Americans. Restaurant owners and other aspiring businessmen had systems with powerful amplifiers sent down from the States, or had powerful sets custom-built in Jamaica . . ." (2003: 11).

pounding" (Jones qtd. in ibid.). According to Stolzoff, Jones' new amplifier was nothing less than "a revelation to the sound-conscious dance fans" (ibid.). In fact, the crowd was "so taken by the superiority of his amp that they remained in the street dancing" rather than paying to enter Wong's dance across the street (ibid.).

Wong immediately realized that his system, which used a P.A. amplifier designed to amplify voice rather than music, could not compete with this new technology (ibid.). On Monday, Wong approached Jones and ordered an amplifier with the same specifications. It is perhaps no accident that Tom Wong is now remembered as "the first sound with an amplifier properly balanced for the dancehall" (Count Machuki).[34] With skilled selectors like Duke Vin and Count Machuki, Wong's new amplifier confirmed his place as "the reigning champ" of the sound system (Katz 2000: 13), at least temporarily.

The appearance and international spread of the Williamson amplifier circuit design is interesting in itself. The Williamson circuit was designed by an "enthusiastic audiophile" (Williamson) who worked for the GEC receiving valve development laboratories a Hammersmith, London, and was first described in an internal memo in 1944 (Hood 1997: 95). For the moment, two points seem immediately pertinent: (1) the Williamson circuit design was propelled by "the prospect of the renewed availability of the GEC KT66 output beam-tetrode" (a type of vacuum tube), which had been restricted to military use from 1939-1945, and (2) "the performance of this amplifier was excellent, and was far ahead of any of its competitors. The articles describing its circuit were re-printed on a world-wide scale, and its performance served as a model to which other designers could aspire. Since it was not easy to improve on this design in terms of performance, most of the competitive designs sought to offer a higher output than the *15 watts* which the Williamson gave. . . " (ibid.: 95, 97-98-emphasis added). Indeed, this kind of wattage modification is precisely what made Hedley Jones' version of the Williamson form such a qualitative and quantitative revelation in the sound system. In contrast to the then standard P.A. system amplifier (designed to amplify voice, as

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[34] Machuki qtd. in interview with Andrew Clunis, *The Star*, Dec. 2, 1994; Chang and Chen 1998: 19.

noted above) the specialized amplifier Jones constructed used heavy tubes (the GEC KT66) and had *an output of 100 watts* (ibid.; Stolzoff: 44).

In addition to the form and sheer power by which it surpassed commercially available amplifiers, Jones' amplifier featured another important "technological breakthrough" (ibid.). This breakthrough was the ability to differentiate and enhance the treble, mid-range and bass frequencies via tone controls (Kingston and Kingston 1998: 128; Stolzoff 2000: 44). It is this splitting of the sound, into three different frequency ranges -- *for manipulation* -- which appears to begin the history of modification and reinterpretation of received forms via electrical sound reproduction technologies. Frequency manipulation immediately became an essential feature of sound system competition. "Although tone controls at this time were still pretty basic, how you manipulated them counted a great deal. An operator had to be inventive and resourceful as far as added SFX went, and anything that gave a sound man the drop on his rivals would be seized upon" (Bradley 2000: 36/38).

Following the spread of this new amplification technology is quite instructive for it generally parallels the trajectory and ascension of the top soundmen during this period. Further, this unorthodox use of wattage and emphasis on lower frequencies in the sound system leaves an undeniable imprint on the style and development of its music (as discussed by Gussie Clarke and King Jammy in Chapter One).

This precedent-setting use of wattage also appears to have translated into a massive new scale in speaker design. In early 1950, Jones constructed an amplifier for aspiring soundman Roy Johnson (Stolzoff 2000: 45). Johnson was a sales agent for D&G bottlers (ibid.). In addition to his new custom-built amp, Johnson's sound system featured "the largest speakers anyone had seen" (ibid.). About the size of a wardrobe, this speaker cabinet design soon came to be known as "House of Joy" (Barrow and Dalton 2001: 11), taking the name from Johnson's own sound system. By the second half of the 1950s, House of Joy speakers had become a common feature of the larger sets (ibid.).

In order to keep up with the growing demand for custom-built systems, in 1950, Jones took on two apprentice technicians: Fred Stanford and Jacky Eastwood (Stolzoff 2000: 45). This growing demand

stemmed largely from the proliferation of sound systems around the Kingston area (ibid.). According to Stolzoff, sets were also beginning to spread into the country parishes at this time (ibid.). One of the projects that had the greatest impact on the Kingston scene during this period was Jones' construction of a new system for Duke Reid. Confronted with Reid's new set, and perhaps more importantly his heavy-handed tactics, Tom Wong's reign came to an abrupt end (ibid.). Although Wong continued to play from a safer location, the Silver Slipper Club out at Cross Roads, Reid had usurped Wong's position as the most popular sound system in the country (Katz 2000: 13; Stolzoff 2000: 45).

Hurricane Charlie struck the island in 1951, putting a hold on business for the next few months (Stolzoff 2000: 47). Due to the lack of jobs, Hedley Jones' apprentices left to find independent work (ibid.). Fred Stanford went to work for Duke Reid and freelance for friends, and Jacky Eastwood went on to work for Coxsone Dodd (ibid.). However, the success of his apprentices by no means eclipsed Hedley Jones' ongoing contributions. Most notably, in 1963, Jones installed the equipment for Coxsone Dodd's legendary Studio One, the establishment of which "was one of the most significant moves in the solidification of ska's popularity" (Katz 2003: 47). Not only was Jones a "supreme sound technician", he also played as a session guitarist on many of the recordings during the first year of Studio One's operation (Kingston and Kingston 1998: 128) . In fact, from 1960 to 1964, Jones played as a session guitarist with the likes of Millie Small, Clancy Eccles and Joe Higgs (ibid.). He was also the engineer, as well as occasional guitarist, on many Skatalites recordings around this time (ibid.).

However, because Jones phased out his sound system building operation after 1952 (Jones in Kingston and Kingston 1998: 128), these later contributions were mostly on the studio side of things. As there are many others whose contributions to the sound system warrant mention, perhaps it is best to continue with the account following Hedley Jones' departure. Lloyd "The Matador" Daley is a particularly interesting case to consider because he is representative of the self-taught adept, so crucial, and often overlooked, in the development of the sound system and early recording industry.

Lloyd "The Matador" Daley

In 1956, Lloyd Daley started Lloyd's Stereophonic Hi-Fi sound system, which soon became know as "the Matador" (Katz 2000: 140; 2003: 49). Within the next two years, he started a label by the same name and began producing Jamaican boogie. By the end of the decade, he joined the ranks of "The Big Three" (Duke Reid, Coxsone Dodd and "King" Edwards) as part of the first wave of soundmen-producers to issue Jamaican boogie on 7" singles (Katz 2003: 17). Daley apparently moved into producing "because his rivals refused to sell him their better tunes" (ibid. 49). "Though hits were not forthcoming until the late 1960s, the Matador was one of the top sound systems of the ska years, retaining an edge in the field by building and servicing his own set" (ibid.).

As Daley explains, he developed a fascination with electronics at an early age:

> From the age of eight or nine I used to make telephones, lights that would go on by remote control, alarm systems. I was very involved in anything intricate that involved electricity. Later, I built a RF [radio frequency] linear amplifier: it amplified the signal from a walkie-talkie, so I was able to speak to people overseas. I turned it into a sound system amplifier and started to play at birthday parties. I met Coxsone and challenged him, about 1956 or '57, at 2h Windward Road.
>
> (Daley qtd. in Katz 2003: 49)

As one learns from David Katz' landmark work on Lee Perry (2000), Lloyd Daley and his cousin Denzil Lynward Dennis were also involved in some covert activity around the time of this challenge. "Dennis and Daley used to hide under Duke Reid and Coxsone's speaker boxes and record their specials on a Grundig machine for clandestine airings on Daley's set" (140).

However, it was not until around 1960 that Daley decided to upgrade his small set and "get serious" (Katz 2003: 49). Two events in particular appear to illustrate the success of these upgrades. Following the completion of the filming of *Dr. No*, a party was being held at the Success Club for one of the co-stars, Big Junior, who was an associate of Coxsone Dodd (ibid.). Given that the theatrical release date of *Dr. No* was 1963, this dance can be dated around the same time. Both Duke Reid and Lloyd Daley were booked to play that night, but when it came

time for Duke Reid to pass the floor over to Daley, Reid kept playing (ibid.). Daley had recently secured the Maytals' scorcher "Six And Seven Books Of Moses", and it immediately became his "trump card" in the sound system (ibid.). Seeing that Duke Reid had no intention of giving him his turn, Daley signed-on over top of him, completely drowning Reid out in the process:

> Coxsone had to come and seize the "Six And Seven Books Of Moses" that was lent to me, because I was killing Duke Reid with it. But it's not just the record, it's the sound - the weight I was dropping, the amount of bass. I was the first sound system to have ever signed on and completely over-powered Duke Reid, so that you couldn't hear him.
>
> (Daley qtd. in ibid.)

Daley's next big victory offers further insight into the power of his new custom-built sound. Shortly after the incident with Duke Reid, the Matador was scheduled to play at the Gold Coast (ibid. 50). That same night, five of Jamaica's top sounds were playing at Club Monaco, which was in close proximity (ibid.). The line-up at Club Monaco consisted of "Duke Reid, Coxsone Downbeat, King Edwards the Giant, Sinclair the Lion from Central Kingston - that was a very good sound, he was even heavier than Sir Coxsone - and Count Boysie - that was a next good sound that came from Oxford Street" (Daley qtd. in ibid.). However, once Daley fired up his "heavy KT 88 [tube] amplifier", droves of people starting filing in from the Club Monaco dance down the road. Daley remembers the event fondly:

> Five of them, and I destroyed them the night. I was playing my heavy KT 88 amplifier and I shake the earth in such a way that everybody had to leave their dance and come to my dance, and they had to stop playing before nine o'clock. Gold Coast was overfilled - it was the sweetest victory I ever had.
>
> (Daley qtd. in ibid.)

During "the key period of the late 1950s and early 1960s", Daley also built and repaired amplifiers for many of the leading sound systems, including Coxsone Downbeat, Duke Reid the Trojan, Prince Buster's Voice Of the People, as well as a pioneering set called Cavaliers, owned by a Mr. Chung (ibid.). Yet the greatest testament of Daley's engineering skill and audacity is the set he constructed for Jack Ruby's Hi Power in Ocho Rios. As Lloyd Daley explains, "Jack Ruby's was the largest tube amplifier that

was ever built in Jamaica - it was forty KT88s, built by Lloyd Daley, the Matador'" (Daley qtd. in Katz 2003: 355 n. 3)

In addition to his achievements as a sound system operator and "noted builder of 'sound boxes'" (Barrow and Dalton 2001: 116), Daley was also generous in terms of sharing details about the construction of his equipment. For example, at a dance in 1960, Daley shared a piece of information that would later play an important part in the phenomenal success of King Tubby's[35] Home Town Hi Fi sound system. As Daley explains:

> Number 3 Tiverton Road was one of the most popular dancehalls in East Kingston. It was owned by Brown's Funeral Parlour - the owner would build and store coffins there and rent it out for dances. Some time in 1960, when my sound system was playing a 3 Tiverton Road, King Tubby came to the dance as an admirer of my sound. He asked if I could give him a circuit diagram for the reverb my sound was using, so I sat on one of the coffins that was in the yard, draw the circuit and gave Tubbys. That was the reverb that Tubbs build from my circuit diagram and used on his sound system for a long time.
>
> (Daley qtd. in Katz 2003: 165)

Yet by 1966, hostile police action forced Daley to shut down and dismantle his sound system (ibid. 128). A police attack left his equipment partially destroyed: "Some malicious reason why they did it. I sold my sound system that same year. It was so large, I had to sell it in three different lots" (ibid.). As will be discussed in Section III, such police attacks were becoming increasingly common in the sound system around this time. For Lloyd Daley, perhaps the only positive side-effect of this destruction was that he shifted his focus to the studio, resulting "in his most successful period as a producer" (ibid.).

In addition to hits like Little Roy's "Bongo Nyah" and Lloyd Charmers' organ instrumental-version "Zylon", Daley produced "the first vocal record with a full dub version on its flip side (ie a dub that dropped parts of the rhythm in and out of the mix, and added other tricks such a equalization effects)" (Barrow and Dalton 2001: 232). Recorded in 1971, Little Roy's "Hard Fighter" featured "the splendid 'Voo doo'" on its B-side: a "strictly drum and bass counterpart from the Hippy Boys" (ibid.). As Barrow and Dalton note, "Voo doo" "was probably mixed by

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[35] Barrow and Dalton describe King Tubby as "the man who really popularized the dub b-side and then entire dub albums of versions" (2001: 232).

the pioneering Lynford Anderson" (ibid.). Lynford Anderson's undervalued contributions to such early dub experiments (ibid.) will be considered further in the following chapter.

Despite Lloyd Daley's success as a producer in the early 1970s, one finds little mention of his work after the middle of the decade. As Katz' interview reveals, bad experiences in the music business have left Daley understandably bitter:

> The whole music thing, it's like you have a barrel of crabs. . . That is why the Matador step aside. Most of the guys out there are still going through it, but I don't want to walk that road again. I am a electronic engineer and that is what I live off, because the money that I put into recording, I have not been repaid or compensated for it in any way.
>
> (Daley qtd. in Katz 2003: 49)

Modification and Custom-Built

Another source for sound system equipment, particularly for those who did not have the knowledge or resources to build from scratch, was Jamaican migrant labour returning from abroad. As touched on in Chapter One, several authors have stressed the importance of these networks to the emergence of the sound system.[36] As Katz explains, "sound systems became a fixture of Jamaica's post-war economic boom, the first having appeared after Jamaicans returned from periods of work abroad, cutting sugar cane in Florida or picking crops elsewhere in the American South" (2000: 11). With the growing popularity of sound systems, migrant workers would receive requests from family and friends to bring equipment and records back with them when they returned to Jamaica. As Vincent "King" Edwards recalls:

> The whole idea of owning a sound system came from my brother. In October 1954, I migrated to the United States, but I didn't like it. And while I was there, my brother wrote and told me if I didn't like it there and decided to come back home, then I should carry a sound system. And I accepted his advice, and bought an amplifier and many records. But when I came to Jamaica, I discovered that the typical sound system that they have in America was not suited to the type of dance they have here. People in Jamaica need to have a sound with a heavy bass. So I had to rebuild. I started off with a fifty-watt amplifier, made with seven or eight tubes. The first night I played at Galloway Road, I played against a sound called Cavalier, and I was flopped. . . The word "flop" means that your dance fail.

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[36] Chang and Chen 1998: 19; Barrow and Dalton 2001: 11; Katz 2000: 11; Stolzoff 2000: 52.

(Edwards qtd. in Barrow and Dalton 2001: 16)

Similar to Hedley Jones' modifications of the Williamson circuit, Edwards immediately recognized that the sound system public had expectations that far exceeded the capabilities of American commercially available amplifiers. Even after rebuilding his set with a fifty watt amplifier that could churn out the level of bass which the Jamaican public were more accustomed to, playing against Cavalier demonstrated that Edwards' set still needed improvement.

> So I had to regroup myself, build a bigger sound. And I was actually ruling in the West, around the Maxfield Avenue area, Greenwich Farm area. I couldn't play at Beat Street at that time, because you have to be on top [to play there]. But Duke Reid came one night to play and I flop him. . . Thereafter, I was invited by the dance promoters to play on Beat Street, and when I get there I hold my own. I flop the other two competitors - Coxsone Downbeat and Duke Reid. And then I was number one in the area.
>
> (Edwards qtd. in ibid.)

Edwards' rise to the top of Beat Street is impressive. His sound system "gained the named Giant, and by 1959 was the most powerful on the island" (ibid. 13). From the middle to the end of the 1950s, King Edwards, Duke Reid and Coxsone Dodd, ruled the dancehalls in what Barrow and Dalton refer to as the "Big Three" (ibid.). He went on to produce until 1964, and later entered politics and became elected as a member of parliament for the PNP (People's National Party) (ibid.).

However, before rising through the ranks of the musical and later political elite, Edwards had to perform the two rounds of upgrades described in the passages above. His first amplifier upgrade to fifty watts, via "seven or eight tubes", seems to be more of a modification that a start-from-scratch operation (i.e., Edwards describes it as a "rebuild"). Although he provides little information about his second improvement, Coxsone Dodd appears to give a better idea of what this involved, at least in terms of wattage. After completing a contract as a crop picker in the U.S. in 1951, Dodd decided to make some important purchases before his return to Jamaica: "That was when I bought a Bogen amplifier and loads of rhythm and blues, boogie woogie and music

that everyone could shuffle [to].[37] Although Dodd does not state explicitly, his Bogen amplifier was probably somewhere in the range of 60 watts.

More significantly, Dodd goes on to explain that:

> Down here in Jamaica, the guys started wiring their own outputs, transfers and stuff like that. [They] went into building 200 watts and 300 watts. Long after that, the Americans started building their own wattage and started with their discotheque, but down in Jamaica we were the ones who started amplifying from 250 watts.[38]

Dodd also refers to an advance in speaker box design called "enclosure", which he claims originated in the sound system as well. Among the guys who "started wiring their own outputs", Hedley Jones certainly seems to be a central figure, although Dodd makes no mention of him. Jones is rather hurt by the way he was treated by Dodd, as he explains in his interview with Beth and Dave Kingston:

> He was mean to me. I built his studio and I remained with it for one year doing recordings. . . Some, I think, are still shelved and some he used with his sound system to make a lot of money. These they call dubs and they just use them on the sound system for rivalry and they have never been in print at all. I did literally hundreds of these. I remember Saturday evenings in the studio for hours on end using an old primitive converted cutter to produce records for him. I was promised 10% and I have never seen 1/10 of 1%.
>
> (Jones qtd. in ibid. 1998: 128)

With Jones' departure from sound system building in the early 1950s, several upstarts moved in to replace his services. As noted earlier, his apprentices, Fred Stanford and Jack Eastwood, went on to work for Duke Reid and Coxsone Dodd respectively. Lloyd Daley also branches out to building systems for many of the most successful operators toward the end of the decade (Katz 2003: 50). According to Lloyd Bradley, who does not mention any of the above successors, it is "the Wongs, a Chinese-Jamaican husband-and-wife team, who had effectively taken over from Headley Jones" (2000: 36). Their store on Church Street, Wonards Radio Engineering, imported "ready-built units as well as components from the USA and the UK" (ibid.). Bradley states that

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[37] Dodd qtd. in interview with Adam Glickman, *Tokion* 32, Nov./Dec. 2002: 41.

[38] Dodd qtd. in ibid.

this selection made the Wongs "first choice as this cut down the cost while offering a mix of up-to-the-minute technology and reliable old favourites. Goodmans 18-inchers were the bass speakers of choice, married to 15-inch Vitavoxes, Warriors and Eagle tweeters" (ibid.). However, when it came to amplifiers, Bradley refers to another source:

> For those with a real sense of occasion the only amplifiers worth bothering with were made by a Mr. Morrison. Morrison amps were custom built and would be used in tandem or triplicate so as to achieve the required volume without ever putting the valves under strain. A three-decker Morrison amplifier, such as Prince Buster used, was an object of almost iconic proportions.
>
> (ibid.)

In terms of the link between customization and what has been called "technology transfer", Bradley also recounts an interesting event which takes place in Miami. This "well-worn story" involves an unnamed soundman, who goes into a marine equipment dealership and tries to purchase "the type of loudspeaker that ocean-going liners would use to herald their approach in foggy conditions. When the astounded salesman had come to terms with the idea that this decidedly un-nautical customer wanted to use it to play records, the nonplussed Jamaican had but one question: '*It tek two t'ousand watts?*'" (ibid. 37).

However, no account of sound system customization would be complete without mention of Osbourne Ruddock, the electronics technician who came to be known as King Tubby. Dennis Alcapone, who established himself as a leading toaster following U-Roy's phenomenal success, describes being deeply influenced by the power and quality of King Tubby's sound:

> Tubby's was definitely the greatest sound ever to ever come out of Jamaica in terms of the arrangements and the equipment. . . The technology and everything was just mind-boggling really. Them time, when you listen to King Tubby's sound, it look like it going to blow your mind. I listened to a lot of the sounds, like Duke Reid, Coxsone, and the whole of them, they was just normal sound, bringing out normal voices with normal bass and everything. . . but Tubby's now, the bass was just so solid.
>
> (Alcapone qtd. in Katz 2000: 142)

This advance in sound quality had partly to do with the retreat of the larger sets due to rising police and political-gang violence in the late 1960s (Katz 2003: 128; Stolzoff 2000: 89/90). In terms of sound

system construction, where once the larger sets put much emphasis on sheer power, typically reflected in the colossal scale of equipment, operators began to find this was now attracting unwanted attention. By the 1970s, this realization appears to have contributed to the growing popularity of smaller "hi-fi" sets, such as King Tubby's, in which sound quality became paramount (Bradley 2002: 32/33). Dennis Alcapone recalls this transition to hi-fi sets in terms of amplification technology:

> They moved from a big tube [valve] in the amplifier called the 8070 down to a tube called the KT88. Those new tubes make the bass more rounder and sweet - the 8070 make the speaker box sound "woof!" and vibrate, but the KT88 cut that right down and make the bass sound round.
>
> (Alcapone qtd. in ibid. 33)

In addition to the "round" bass frequencies King Tubby was able to achieve with his custom-built KT 88 amplifier, he was also the "first set to employ separate tweeter boxes" (Barrow and Dalton 2001: 232). Bradley adds that, along with being the first to use high frequency horn tweeters, Tubby "later made full use of the embryonic transistor technology and custom-built filters to split his frequencies between two different amplifiers: a valve [tube] amp for the bass, transistor for the treble ('weight and treble' as it still is known)" (2000: 314).

As Dennis Alcapone explains:

> His sound could be heard all over the area, because he'd get one of his workers to climb trees and put the steel horns way in top of the trees, so the high frequencies would carry the sound right over Kingston. Then, with speakers underneath the trees playing the mid-range and bass the sound was magnificent.
>
> (Alcapone qtd. in Bradley 2002: 33)

Indeed, while Tubby's system was lean relative to the hulking House of Joy style rigs of the Big Three (Alcapone in Bradley 2002: 32), it combined quality and power most impressively, and Tubby soon fell victim to his own success. But before police were drawn to destroy his set, numerous other advances had been constantly added.

In both the sound system and the sphere of studio mixing, King Tubby was an avid re-builder and modifier of virtually every piece of equipment he got his hands on. According to King Jammy (b. Lloyd James), one of Tubby's most successful apprentices, King Tubby was "a

genius, a self-taught genius" (Jammy qtd. in Bradley 2002: 103). Tubby's innovations tend to straddle the borderline between the sound system and the recording studio[39], thus many of his contributions to dub-mixing will be taken up in Chapter Four. However, his introduction of a reverb and echo unit into the sound system helps to illustrate how fertile this border-region proved to be.

Although it has been noted that Lloyd Daley's circuit diagram provided the basis for Tubby's reverb unit, Tubby's further introduction of echo took the sound system by storm. Echoing King Jammy on this matter, Dennis Alcapone describes King Tubby as "an electrical genius. He introduced reverb and echo, because it was the craze among deejays for when you are talking on the mic, *but you could only have it in the studio, Tubby's actually brought it into the dancehall*. . . It was wonderful, and the first time he did it nobody know he could do it" (Alcapone qtd. in Bradley 2002: 33-emphasis added). "When U Roy would be announcing a dance and would say, 'This coming Friday night-night-night-night-night-night-night. . . ' that was brand new to everybody in Jamaica. Everybody was so fascinated by this thing. . . it was mind blowing, man, for that reason" (Alcapone qtd. in Katz 2000: 142). Such was the notoriety of King Tubby's sound that his reverb and echo unit, along with all his other sound system equipment, met a violent end at the hands of police around 1973, and then again in 1975 (Hendley 1987: 92; Katz 2003: 216-217). In Section III, some of the motivations behind such hostility will be considered.

Record Player Protocol: The Arrival of Twin-Turntables

In the early 1960s, Record player protocol in the sound system was shifting as well. This shift seems to have began with the smaller hi-fi sets that were being established along the northern borders of central Kingston at this time (Katz 2003: 10). According to singer Derrick Morgan, the sets which played out of this area, such a Thunderbird, El Suzy and El Toro, catered more to the "upscale crowd": "Those are the

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[39] As Dave Hendley points out in his and Ray Hurford's pioneering piece on King Tubby: "The way Tubb's played [on his sound system] influenced the music we listen to on record (1987: 91).

sound that celebrity people go to, you don't have the ragamuffin dance there. V-Rocket was the top of them, he spin the music better and he have a double-changer [two-turntables]; what we calling mix now, they doing that from the early sixties" (ibid.).

As Ruddy Redwood explains, twin-turntables enable him to cut directly from the vocal to the instrumental version during his exposition of the first instrumental dub plate in 1967:

> I used to come in [to the sound system] at midnight an' play fifteen, sixteen new music that nobody know about. So, the dance was very nice - I tell you, I love to entertain people. I come at 12 o'clock, and the deejay's name was Wicked, an' he introduced me - "Mister Midnight, otherwise from S-R-S [Supreme Ruler of Sound.]". I start playin' - *that time you have two players*. I put on "On the Beach" and I said, *"I'm gonna turn this place into a studio"*, and I switch over from the singing part to the version part, cut down the sound and, man, you could hear the dance floor rail, man - everybody was singing. It was very happy, an' I get a vibe.
>
> (Redwood qtd. in Barrow and Dalton 2001: 228-emphasis added)

Previously, in the 1950s, the single-turntable standard meant such cross-fading was out of the question. Instead, the sound system operator had to be extremely nimble, removing the old disc while simultaneously replacing it with, and cueing up, the next one (Bradley 2000: 10). The operator's art rested largely on their ability to make the transition between discs with as little "dead air" as possible. Similar to the jive-talking of southern U.S. radio disc jockeys, the verbal interjections of Jamaican deejays initially served to fill these spaces as much as hype-up the crowd (Bradley 2000: 292). As Barrow and Dalton explain:

> Machuki had started making up spoken introductions for records, derived from the slang of US radio deejays and sustained by his reading of US publications like the Harlem-based magazine *Jive*, edited by Dan Burley, compiler of the well-known *Dictionary of Jive* in the 1940s.
>
> (2001: 15)

However, surpassing the jive-talking of U.S. radio deejays, Machuki developed a technique for working verbal toasts into the flow of the music itself, rather than simply talking-*over* and in-between the records. As Prince Buster explains:

> He was the first to actually go along with the track instead of just talk on top of it, he knew how to do it so you could still appreciate the tune, you're not just listening to him. Machuki devise that technique and so many others who come immediately after him learn from it, because nothing exist like that before.
>
> (Buster qtd. in Bradley 2000: 293)

U-Roy [b. Ewart Beckford] concurs:

> Count Machuki, well he was a man I used to love to listen to. Whenever you been listening to this man, it was like you never hear anybody like that before. This man phrases his words in time, he doesn't crowd the music when he's talking. You can always hear what the vocalist got to sing. I used to say, I'd like to be like this man.
>
> (U-Roy qtd. in Chang and Chen 1998: 68)

Machuki's cultivation of communal participation through flowing verbal interjections also suggests the power of what Walter Ong calls "secondary orality" ([1982] 1999: 65). According to Ong, this new orality is created through the encounter with electrical sound reproduction technologies (ibid.). "Secondary orality is both remarkably like and remarkably unlike primary orality", explains Ong (ibid.). "Like primary orality, secondary orality has generated a strong group sense, for listening to spoken words forms hearers into a group, a true audience, just as reading written or printed texts turns individuals in on themselves" (ibid. 65-66). Yet in secondary orality, this power of incorporation is amplified, "generating a sense for groups immeasurably larger than those of primary oral culture" (ibid. 66). For McLuhan, with electricity, group participation is extended over the entire planet, hence his term "global village" (ibid.). In the case of the sound system however, the intended sphere of participation is much more modest. Unless captured on a recording, such as the immensely popular "sound" tapes of the late 1970s and early '80s,[40] the reach of the deejay's voice is limited to the audio capabilities of that particular set. However, audio capabilities were often quite impressive; by the 1960s, sound systems could be heard from several miles away.[41]

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[40] Dave Hendley, sleeve notes, *Haul and Pull Up Selecta: Heavy Weight Dancehall 1979-82*, Trojan: 2003.

[41] Coxsone Dodd in interview with Glickman, *Tokion* 32, Nov./Dec. 2002: 41. Loretta Collins remarks that "the overamplified sound system dances provided an alternative space for urban

The persuasive power of such technologies to amplify group sense in a population is illustrated by the use of the electrodynamic loudspeaker by western rulers before and during the Second World War (Morris 1997: 9). Patented in 1923, the electrodynamic loudspeaker "boomed the voices of Hitler, Mussolini, Roosevelt, Churchill, and de Gaulle across the 1930s and 1940s" (ibid.). "'Without the loudspeaker, we would never have conquered Germany', wrote Hitler in 1938 in the *Manual of German Radio*" (Attali 1985: 87). However, setting the sound system apart from such fascist projects, the microphone in Jamaica amplified quite a different set of voices. Perhaps most significantly, access could not be policed through official channels, for the sound system microphone did not favour those with formal training, musical or otherwise. Tremendous skill and training was certainly required, but this took place in the unofficial sphere of the sound system.

It was while serving his apprenticeship on the sound system circuit that U-Roy was able to sharpen his skills to the point where they would eventually revolutionize the role of the deejay. With twin-turntables and the introduction of instrumental dub plates, U-Roy suddenly had the means with which to expand upon the techniques pioneered by Machuki and explore new possibilities of expression. As Redwood explains, with different versions of the same backing instrumental track on either turntable, he was able to turn the sound system "*into a studio*". This form of presentation appears to have been fundamental to the popularity of dub-versions, the ability to "open-up" a pre-existing recording, and the explosion in deejay toasting which followed.

After witnessing the reaction to Redwood's instrumental dub plates in Spanish Town, Bunny Lee encouraged King Tubby to try something similar on Tubby's own Home Town Hi Fi sound system: "The people a Spanish Town love it! You have to start something like that" (Lee qtd. in Katz 2003: 166). Upon teaming up with U Roy in 1968, Tubby did just that. In this new context, U Roy "simply redefined the role of the deejay", a position that would be cemented with U Roy's landmark Treasure Isle recordings in 1970 (ibid. 163).

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soundings where the ideologies and innovations of the underclasses were accessible to all listeners within hearing distance" (1997: 173).

As Bunny Lee continues:

> Tubby's just a bang on to U Roy. U Roy come in and say, "Part two, another version" on "Too Proud To Beg" with Slim Smith, a so the name version come in[42]. When it start, you hear Slim Smith start to sing and then you hear the voice gone! Then you hear him come in again, and you hear U Roy talk, "Love the life you live and live the life you love, here come the brother Slim Smith again, tell them", and a man say, "Boy, Tubby's have amplifier that can take out the voice and play pure rhythm". Little did them know that's how the dub make out. There goes version now, and everybody wants it 'pon them record.
>
> (Lee qtd. in ibid. 166)

In both Bunny Lee and Ruddy Redwood's account, twin-turntables seem to increase access and interaction for both the deejay and the sound system public, i.e., "you could hear the dance floor rail, man - everybody was singing", recalls Redwood. This is perhaps no great surprise, for as Redwood points out, he essentially introduced into the sound system the flexibility (read: interactivity) of a recording studio.

Yet in Bunny Lee's description, one gets a sense of not only the enthusiasm of the sound system public but also the wonder and confusion over how this was done. U-Roy's reflections offer further insight into this wonder:

> King Tubby was one of the men to first make a "version" -- there's the singer (version) and then you can play the dub version, which is just drum and bass and rhythm. When King Tubby started doing this, people used to think that we have something on the amplifier to take out the sound -- to take the voice out and just leave the rhythm track. But it wasn't something like that -- it was just one dub plate. Two songs on the same side, the vocal first and then the "version" next, so you can keep [the beat] aligned on the previous thing [by cutting from one turntable to the other]. It was really new to people when this thing started. People didn't understand not at all what it was all about.[43]

An initial lack of understanding by no means interfered with the patrons' enjoyment of this new sound. This receptivity stands in strong contrast with attempts to introduce these sounds through the radio and record buying public. Katz describes U-Roy's first attempts in the studio as follows:

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[42] Which is where the term "version" came from.

[43] U-Roy qtd. in interview with Glickman, *Tokion* 32, Nov./Dec. 2002: 45.

> By the end of the 1960s U Roy's verbal prowess saw him lured to the studio by dental technician and aspiring producer Keith Hudson, who was then on the verge of success with Ken Boothe's broken-hearted love song "Old Fashioned Way". The producer cut U Roy over this rhythm, but test pressings bewildered radio station personnel and their negative reaction caused Hudson to leave the song unfinished for a long time. U Roy's next recording "Rightful Ruler", cut under Lee "Scratch" Perry's direction, was a highly radical religious toast that celebrated [U] Roy's belief in the Rastafarian faith. Set to Niyabinghi hand drumming by Count Ossie, with the toaster's grave chanting of Psalm One spurred on by fervent shouts from Peter Tosh, the disc failed to capture the public's imagination at the time of issue.
>
> (2003: 167)

"Like [Lee] Perry", states Katz elsewhere, "[Keith] Hudson understood that the deejay needed to be given proper space to express himself on a rhythm, and 'Dynamic Fashion Way' [the deejay cut of 'Old Fashion Way' which Hudson created for U Roy] left plenty of room for U Roy's message" (2000: 92). As Hudson himself explained in the mid 1970s, "A whole heap of people bla bla bla about it but I was the first person put U Roy in the studio. When I took it to the radio station, it's like they was saying 'we could never play this music, *it's strange and it's funny*'" (qtd. in ibid.-emphasis added). Despite this negative reaction from radio stations, "Dynamic Fashion Way" by no means went unnoticed in the sound system. When the twenty-two year old producer approached Dennis Alcapone about recording him in 1969, Hudson told Alcapone that he had already produced "Dynamic Fashion Way" with U-Roy.[44] Alcapone told Hudson that he not only heard the tune, he had a copy of it and played it frequently on the sound system he deejayed at the time: "A wicked tune - me used to play 'pon the sound. It never get no radio play, ca' it was a underworld tune. The deejay business never really burst out yet".[45]

However, with U-Roy's Treasure Isle recordings in 1970, "U Roy achieved the seemingly impossible hat-trick of scoring the top three records on both Jamaican radio charts" (Katz 2003: 164). This sudden success surprised even U-Roy: "I didn't think that something like this would ever happen [*he says with a smile*] and that it would still be going on until now. At the time it was like it was a joke! A DJ is just a person who comes to a dance, he talks over the mike and puts records on and

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[44] Barrow, sleeve notes, *Keith Hudson: Pick A Dub* [Atra, 1974], Blood and Fire, 1994.

[45] Alcapone qtd. in ibid.

read the invitation where the next dance is going to keep. Who could ever tell that this thing would ever reach like this, people having number 1 on the chart! I couldn't believe it" (U-Roy qtd. in Katz 1998: 85).

It appears that exposure to these techniques on King Tubby's Home Town Hi-Fi had finally managed to infiltrate into radio play, despite ongoing resistance from radio management. (The pressure that producer Duke Reid perhaps brought to bear on radio personnel probably would not have hurt either.) Perhaps one of the reasons for this reluctance from the broadcast sector is an intuitive sense of the defiance involved in U-Roy's approach. If one glances back to Machuki's toasting over imported U.S. rhythm and blues records, U-Roy's deejay versions can be understood as a radical extension of this defiant tradition. Monologic tendencies toward closure,[46] inherited through the vinyl medium as extended under American industrial apparatus, are temporarily ruptured so as to create new spaces for exegesis and interaction; imperial expansion is drawn into a form where technological, and therefore political, legitimacy is thrown into question. As Chuck Foster explains, the finality of singer's version becomes severely undermined:

> In the beginning, his [U-Roy's] voice was the definition of rude. *Answering back to the singers on the discs, he parodied and defied then, his stingers cut through the coy lyrics of the day* and left enough bare dub showing through to spin the brain at greater than 45 rpm.
> (Foster 1989: 28-29-emphasis added)

In fact, as dub-mixing pioneers like King Tubby explored new means of breaking an original vocal version into an association of fragments, the resulting deconstructions seemed to *entreat* participation:

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[46] This relation between monologic and dialogic communication is explored in the work of Mikhail Bakhtin. Bakhtin opposes dialogue to the monologic "'authoritarian word' (*avtoritarnoe slovo*) in the same way as carnival is opposed to official culture. The 'authoritarian word' does not allow any other type of speech to approach and interfere with it. Devoid of any zones of cooperation with other types of words, the 'authoritarian word' thus excludes dialogue. Similarly, any official culture that considers itself the only respectable model dismisses all other cultural strata as invalid or harmful" (Pomorska 1984: x). Bakhtin takes the novel as a model for understanding the creative power of language in the face of such intolerance. The novel is characterize as a "'multiplicity of styles' in a mutual echoing, or as *the world constantly reinvolved in a dialogue*" (ibid. ix). Quoted speech, more generally, "permeates all our language activities in both practical and artistic communication"; "we are actually dealing with someone else's words more often than with our own" (ibid.). Significantly: to version, whether instrumental, vocal, deejay or dub, is to quote and *draw-into dialogue* someone else's expression.

> These versions were used in the dancehall, as the stripped-down mixes allowed the deejays -- previously confined to introductions or interjections which spiced up the tune -- to take centre stage. Deejays could now invent new lyrics which answered or commented on the original hit vocal -- snatches of which had often been left in the mix.
>
> (Barrow and Dalton 2001: 231)

In terms of the role of technology in extending this defiant tradition, it is the encounter with the deejay's microphone that appears to fully unleash the explosive power of the multi-track recording. In fact, one might observe how, within three years of multi-track's arrival (in the mid 1960s), the deejay's microphone came and blasted the multi-track recording to bits; an encounter from which recorded music would never recover. "A new type of communication always creates new forms of speech or a new meaning given to the old forms" (Bakhtin 1984: 16). The significance of these new practices should not be underestimated. For even if the legitimacy of these innovations is based on the skewed criteria of having significant repercussions for the "developed" world, the coming of the instrumental-version signaled a fundamental change in how a recording could be understood and approached, worldwide.

SECTION III
MODERN TECHNICS: WARFARE, MINING AND THE LIMINAL REGIONS OF MACHINE ART

> "War is never anything less than accelerated technological change"
>
> (McLuhan 1964: 102).

According to Lewis Mumford, the establishment and spread of modern technics is founded on the disproportionate development of those two technics which, from their beginning, have promoted "a dehumanized pattern of life": mining and warfare (1952: 64). This shift away from handicraft processes (which mediate between use and meaning), toward the "the destructive tendencies" of modern technics, becomes pronounced in the "more advanced" Western countries around the middle of the nineteenth century (ibid. 63). One might add that, on the margins of empire, particularly in a plantation colony such as Jamaica,

this transformation is postponed and experienced all the more abruptly, as discussed in the case of bauxite mining.[47]

Mumford explores this transition to modern technics, as an example of how art and technics may be brought together, with the case of print (ibid. 66). Although a central instrument in the overthrow of the more integrated systems of handicraft, printing represents nothing less than a new form of art, with its own standards and possibilities of aesthetic expression (ibid. 70). "Perhaps the best effect of machine art", Mumford concludes, "is to make us conscious of the play of the human personality in the small area where it remains free, a differentiation so delicate, so subtle, that a coarse eye would hardly take it in and an insensitive spirit would not know what it meant" (ibid. 82). Considering this dynamic between control and free play in machine art further may be instructive.

Machines, in fact all tools, invariably come with prescribed guidelines. But as with anything involving guidelines, there are marginal areas where the limits of acceptability can be pushed and, to some extent, circumvented. The more confidently the pushing of these limits is dismissed by authorities as a lack of understanding on the part of the practitioner (which is a confidence itself based on a misunderstanding), the more successful the practitioner has been. An obvious example might be the plantation owner who regards the high rate of tool breakage as a reflection of the "sheer clumsiness" of his slaves.[48] However, in this instance, it is a case of blatant, destructive mis-use (i.e., perhaps smashing a hoe repeatedly on a large rock rather than running it through the soil). As will be discussed, limits can be pushed in far more subtle and

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[47] Consider also the "acute effect" of the encounter with English cotton machinery in India in comparison with "the gradual extinction" of the hand-loom weavers in England: "The Governor General reported 1834-35: 'The misery hardly finds a parallel in the history of commerce. The bones of the cotton-weavers are bleaching the plains of India" (Marx, *Capital*, vol. 1: 431-432).

[48] For example, consider the following passage from *Sea Board Slave States* which Marx quotes, in a footnote, as an example of the perceived "sheer clumsiness" of slave labour. In this work, Olmsted accordingly reports: "I am here shown tools that no man in his senses, with us, would allow a labourer, for whom he was paying wages, to be encumbered with... And I am assured that, in the careless and clumsy way they must be used by the slaves, anything lighter or less rude could not be furnished them with good economy, and that such tools as we constantly give our labourers [in Europe]... would not last out a day in a Virginia cornfield--much lighter and more free from stones though it be than ours" (qtd. in *Capital*, vol. 1: 196 n.1).

puzzling ways, thereby making intention increasingly obscure; covering the tracks, if you will.[49]

These kinds of reactions to control have an important place in struggles where direct opposition to rule can have terrifying consequences. One need only reflect on the history of use of force by Jamaican authorities in the face of popular unrest. Certainly, this approach to dealing with dissent stems partly from the obvious importance of violent rule in maintaining social "order" in a plantation colony. Here, the overwhelming majority of the population are not even considered human, but simply property, some of the effects of which have been noted in Chapter One (p. 22-24).

In 1831, a black Baptist deacon named Sam Sharpe took matters into his own hands and led hundreds of slaves in what would be the last major slave revolt in the British West Indies (Hebdige 1987: 25; Barrow and Dalton 2001: 455). "The uprising ended in the massacre by British troops of all those involved" (Hebdige 1987: 25). While awaiting execution, Sam Sharpe declared: "I would rather die on yon gallows than live a slave" (Barrow and Dalton 2001: 455). Although the rebellion helped to expedite the passing of a law banning slavery in the British colonies (implemented three years later), "life for most ex-slaves remained grim" (Hebdige 1987: 25).

"Freedom" apparently consisted of working the fields of former masters at near slave wages, and if this was not appealing enough, authorities introduced a coercive taxation system which specifically targeted the black population in order to drive ex-slaves back onto the plantations (ibid.). Hebdige states that:

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[49] As noted earlier, incomprehension was a common reaction to early dub experiments, even among devout sound system patrons. However, where sound system fans reacted to this incomprehension with enthusiasm, radio and record company personnel were far more reluctant. Harry Hawke describes the puzzled skepticism with which the dub-version was often met in the U.K. during its first decade: "its strangeness and weirdness alienated the casual listener. . . It didn't mean that much unless you were a long time dancehall aficionado. There was a tale doing the rounds at the time about a nameless record company sending the tapes of their latest dub [back] as [there was apparently] *something very wrong with it - whole sections kept dropping out!*" (Sleeve notes, *Prince Far I and the Arabs: Crytuff Dub Encounter Chapter One* [Hit Run, 1978], Pressure Sounds, 1997-emphasis added).

> As a result, in 1865 there was another rebellion. Paul Bogle (who was, like Sharpe, a black Baptist minister) led a rebel force against the mainly white township at Morant Bay. He was eventually captured and hanged, together with a wealthy coloured planter named George William Gordon. Gordon was accused of inciting the people to revolt by advocating self-government for Jamaican blacks.
>
> (ibid.)

Although the Morant Bay uprising was crushed within three days, "the punishment inflicted on the people lasted for months, with the brutal flogging and hanging of hundreds of people", many of whom had nothing to do with the rebellion (Sherlock 1966: 104).

Jamaican independence finally came in 1962, but many of the same patterns of oppression persisted, albeit in "a slightly more subtle form" (Hebdige 1987: 26). As Hebdige explains, "For the black population it must seem that little has changed in Jamaica over the last 400 years" (ibid.). "Self-government" under the Jamaican two-party parliamentary system developed some troubling new features, in addition to those inherited from colonial rule. By the late 1960s, each party had forged ties with gangs from Kingston's toughest neighborhoods in efforts to control their electoral constituencies (Stolzoff 2000: 84).

Terry Lacey (1977) describes the escalation of political dissent over the 1960s, as well as its violent culmination in "the political warfare and state of emergency of 1966-67" (Stolzoff 2000: 84).[50] This watershed event in Jamaica's political and economic history was initiated by the Jamaican Labour Party (JLP) under the direction of future prime minister Edward Seaga (Stolzoff 2000: 84).

Interestingly, Edward Seaga began producing Jamaican boogie records in the late 1950s after becoming an "agent" for several major U.S. labels, including Columbia, Atlantic, ATCO, and Epic (Seaga in Katz 2003: 19). Like Federal Records' founder Ken Khouri before him, Seaga first became involved in the Jamaican record industry by pressing foreign, major U.S. label material for the domestic market (ibid.).[51] However,

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[50] Also included in Terry Lacey's study are "the Henry Rebellion of 1960, the Coral Gardens 'uprising' of 1963, the anti-Chinese Riots of 1965", and, following the state of emergency, the Walter Rodney Riots of 1968 (Stolzoff 2000: 84).

[51] Seaga had previously made field recordings of African-Jamaican religious-folk music as part of his anthropology research at Harvard (Katz 2003: 18). After traveling to New York to visit the

after hearing local talents Joe Higgs and Roy Wilson in 1958, Seaga decided to move into producing. The duo gave Seaga "one of the earliest hits by a local Jamaican act", a "landmark recording" called "Manny Oh", and Seaga issued the material on his newly established WIRL (West Indies Records Limited) label (ibid.). Shortly thereafter, Seaga expanded his WIRL label and pressing operation with the construction of a recording studio by the same name (Chang and Chen 1998: 85; Katz 2003: 37).

Yet, by the spring of 1962, a narrow win by the JLP in the general elections signaled Seaga's departure from the music business as well as his growing influence on the country's political landscape. Seaga was appointed as Minister of Development and Welfare (Katz 2003: 37). "Once I became a minister, I had no time to operate a business, so my father took it off my hands, along with Dora, a cousin of mine who was involved in it from the beginning. They ran it just long enough to be able to dispose of it, sold it to a man by the name of [George] Benson. He owned a studio which was destroyed by fire, so they bought this one" (qtd. in ibid.). By the mid 1960s, George Benson and partner Clifford Rae were joined by Byron Lee, leader of The Dragonaires, and Ronnie Nasrallah, the group's manager (Katz 2000: 58). With Byron Lee and Ronnie Nasrallah on board, the studio was upgraded from two to four-tracks and then, three years later, upgraded again to eight-tracks, becoming first studio on the island with multi-track recording and overdubbing capabilities (ibid.; Chang and Chen 1998: 84).

Seaga was rapidly "rising in the ranks of the ruling JLP", but his thirst for power soon had him conspiring with a dangerous new element in Kingston's ghettos (Katz 2000: 37-38). By the late 1950s, "rude boys" or "rudies" "had begun to creep forth from the most disenfranchised portions of disaffected communities in the harshest parts of the ghetto to form fearsome gangs that began to terrorise Kingston" (ibid.). Seaga put these rude boys to terrifying political use:

> In exchange for money, arms, housing, and protection from police, Seaga recruited members of the fearsome Tivoli Gang to be "enforcers", i.e., henchmen who would keep his West Kingston constituency loyal to the right-wing JLP.

Smithsonian Folkways label, Seaga managed to get the recordings released as *From The Grass Roots Of Jamaica* in 1956 (ibid.).

(ibid.)

Further, opposition to JLP rule in his West Kingston riding was very much Seaga's own doing. In efforts to expand support in this area, Seaga decided to bulldoze the tenements of Back-O-Wall and Lizard Town in order to make way for a new housing scheme called Tivoli Gardens (Katz 2003: 80-81). Residence in the new development was allocated strictly to JLP supporters (Stephens and Stephens 1986: 46; Stolzoff 2000: 84), which meant that those (PNP supporters) driven from their tenements were now left homeless, or worse. Not surprisingly, the attempt to displace these inhabitants, who Seaga regarded as "squatters" (Seaga qtd. in Katz 2003: 81), was met with violent opposition (Stolzoff 2000: 84). Seaga responded by "hiring gang leaders to enforce his orders and supervise the project" (ibid.).

> The use of brute force by the thugs only made matters worse. The situation escalated, and the government called a 'state of emergency' in October 1966 to curb the growing unrest. During the month of state emergency, a joint police and military force was moved into Western Kingston where house-to-house searches were conducted and more than 300 persons were questioned by security forces (Lacey 1977: 92).
>
> (Stolzoff 2000: 84)

In response to Seaga's mobilization of gang violence, the PNP (People's National Party), under the leadership of Michael Manley, established links with rival youth gangs in the various ghettos (Katz 2000:38). In the months leading up to the 1967 elections, each ghetto district became a gang-controlled political garrison with affiliations to one of the two parties (Stolzoff 2000: 84). The situation spun further out of control, and it was the poorest who were paying the cost. With both parties now playing by similar rules, "political rivalry took a decisive turn toward armed political warfare" (ibid.).

Both Katz and Stolzoff (ibid. 84-86) single out the introduction and spread of the handgun as a primary factor in this escalating crisis. As Katz states:

> Before 1966 most rudie battles were waged with knives, bottles or open fists, but now the Tivoli Gang [thanks to Seaga] had handguns and live ammunition; so the Spanglers moved their power base to Matthews Lane and accepted arms and support from the opposition PNP.
>
> (2003: 81)

As has been discussed, new technologies introduce new social worlds and this certainly holds true for the handgun. The diffusion of the handgun is paralleled by the spread of a conspicuous new social type in Jamaican society and politics: the gunman. Obika Gray (1991) considers the political ramifications of this figure in the following:

> While competitive political violence had formed a part of Jamaican politics since the forties, the violence surrounding the shanty town removal program in the mid-sixties was different, in that the official parties began to legitimize the role of the gunman as an enforcer in their rivalry, thereby investing an anomic figure with a decisive role in national politics.
>
> (ibid. 120-121 qtd. in Stolzoff 2000: 85)

Bunny Goodison remembers seeing a similar change in the dancehall around this time:

> Inna the '50s there was no guns really. [In the] '60s there was no guns. Until around about, sometime, like '67, you know like, it start in West Kingston that you start having gun, and gradually then. It was the same guys who went to dance, the guy with them gun on them and then once you walk a where sorry [you accidentally step on someone's shoe], [then they might] cuss some bad word or draw them knife, now them draw a gun instead.
>
> (Goodison qtd. in ibid. 85-86)

Due to the demographics of its clientele, the sound system was a magnet for the rising political violence of the mid to late 1960s. Being composed primarily of impoverished black youth, the sound system clientele consisted of what seemed to be considered the most expendable segments of society.

It has also been noted that, ever since the days of sound system pioneers like Duke Reid and Vincent "King" Edwards, both of whom used violence to "bludgeon" their way to the top of Kingston's music scene, the dancehall had been a favourite stomping ground for the roughest badmen around (Katz 2000: 12-13). In addition to "the greatly feared Whoppi King", the Spanglers (the PNP gang Katz mentions above) were also loyal Reid supporters, originally based in Back-O-Wall and Lizard Town until Seaga bulldozed them over (Katz 2000 12; 2003: 80-81).

The sound system found itself surrounded by rising political violence for another reason as well. As Stolzoff explains:

> a few informants suggested to me that the politicians were at times resentful of how much attention dancehall entertainers were given and how a dancehall session would always outdraw a political meeting. The politicians sensed that their popular support could never equal that of the recording stars. As a space between institutional domains. . . the dance was feared by the elites for its creative potential to mobilize the minds and bodies of its participants.
>
> (2000: 86-87)

Attempts to "police" as well as harness music for political purposes were present from early on in Jamaica's political history. "It's very significant that our first set of election laws prohibited the use of live entertainment during election campaigns because it was felt that music could sway the crowd one way or another", notes PJ Patterson, leader of the PNP and one time Skatalites manager (Bradley 2002: 71). Perhaps overlooking this bumpy beginning, but equally insightful, JLP opposition leader Edward Seaga states that:

> Music and politics have been fairly comfortable bedfellows since the island had its first free elections 40 years ago. You couldn't just have speeches. These [political rallies] are street things, not town-hall things, and you couldn't have just a consecutive run of speeches - it would be boring because it would be four or five hours and people are just standing there. So it has to be punctuated, and after each speaker there's a musical interlude.
>
> (Seaga qtd. in ibid.)

Lloyd Bradley adds that "The first music to be used at political rallies drew heavily on Jamaica's church traditions and the songs were straight appropriations of rousing religious choruses with the name of whatever politician being lauded being substituted for that of Jesus or whoever" (ibid.).[52] Apparently this practice did not last for long (ibid.). Using records featuring the popular music of the day and choosing an effective campaign song instead became the main ways of attempting to maintain and expand support during election campaigns (ibid.).

Yet by the late 1960s, a new intolerance arose in relation to music which fell outside the reach of political influence, specifically in the sound system. This intolerance became especially apparent in the police crackdown experienced in the sound system during the political violence of 1966-1967. Stolzoff notes how police surveillance of the dancehalls became common during this period, accompanied by an increasing

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[52] The Sankey Hymnal would seem an ideal candidate in such early campaign songs.

frequency of harassment and raiding of sound systems and their supporters (2000: 86). The practice of "locking-off" a sound system (shutting the dance down early in the night, usually by directly cutting the power) became established at this time as well (ibid.). Making matters worse, the police would often extract bribes during these raids. Perhaps most troubling, however, is the political elites' complicity in these practices: "Generally speaking, the government and social elites encouraged or at least turned a blind eye to the police terrorism and privateering" in the sound system (ibid.).

Bunny Goodison's further recollections underscore the impact this new climate fear had in the sound system:

> By middle of the '60s or before, the sound system as we knew it -- the big sound system -- started to go under. . . You know a kind of stigma attached to it that it is a bad man business, because by '67 the guns them really bark in Jamaica, really, really fire. And those were the main places which it probably happen. You know people getting killed in the dances.
>
> (Goodison qtd. in Stolzoff 2000: 89-90)

As mentioned earlier, the police crackdown and swell of violence in the late 1960s brought about a shift in amplification technology and a retreat of the larger sets that dominated the sound system up until that point. By 1966, hostile police action forced Lloyd Daley to shut down and dismantle what was left of his Matador sound system. King Edwards had already scaled down his operation from seven to three sets earlier in the decade because "the dancehall environment [had] become very volatile" (Edwards qtd. in Barrow and Dalton 2001: 16). What few bigger sets remained took their cue and bowed out. As Coxsone Dodd explains:

> In the early days you know there was a lot of love. You know the rude part came in long after, and as a matter of fact that's when I quit the sound system. . . [in] the late '60's and [that is when] that rude attitude and carry-on [started] you know.
>
> (Dodd qtd. in sleeve notes, *Studio One Rockers*, Soul Jazz Records 2001: 3)

King Stitt (b. Winston Sparks), successor to Count Machuki on Coxsone's Downbeat set, adds that "in those times, '68 and '69, was when violence took the city by storm, and Mr. Dodd had to pack up his sound, because he wouldn't play in that sort of environment" (Stitt qtd. in Barrow and Dalton 2001: 129).

Even with the retreat of the larger sets from the arena in the late 1960s, the hostility and violence in the sound system continued, and in fact intensified, over the next decade. Aside from police raids and harassment, this hostility also included indirect attempts to destabilize the country and dancehall scene by flooding the ghettos with guns. As previously touched on, this explosion of "gun terror" has been generally attributed to Edward Seaga and the JLP and their troubling ties with the CIA (Gunst 1995: 18). Compounding the difficulties surrounding the spread of this volatile new technology, Michael Manley encountered a series of daunting obstacles upon assuming power for the first time since Jamaica's independence.

Two years after the PNP victory in the 1972 general elections, Manley announced his plans for a new era of "Democratic Socialism", much to the displeasure of the United States government (Katz 2003:233). This was a precarious position to take, as the previous year in Chile, Allende's progressive and democratically elected government was destroyed by a military coup orchestrated by the CIA (ibid. 234). Despite the message this sent to other "developing" countries with similar socialist aspirations, Manley publicly attacked neo-colonialism, imperialism and strengthened ties with Cuba (ibid.). Particularly troubling for then Secretary of State, Henry Kissinger, was Manley's support of the presence of Cuban soldiers in Angola, who were helping the Marxist MPLA government fend off an invading South African army backed by the CIA (ibid.). Kissinger made a personal visit to Jamaica in December 1975 to pressure Manley into silence, threatening to cancel a billion-dollar trade agreement if the insubordination continued (ibid.). As a prominent member of the Non-Aligned Nations group, Manley was not dissuaded and the trade deal "evaporated" (ibid.).

The evaporation of this deal could not have come at a worse time. Due to a new levy, the multinational corporations which drove Jamaica's bauxite industry had recently pulled out of the country. As part of Manley's new campaign, legislation was passed which changed the way that fees were paid on the purchase of Jamaican bauxite by multinational corporations (ibid. 233). In order to ensure that fees would reflect the

actual price of the mineral,[53] the low fixed rate was replaced with a percentage levy (Katz 2003: 233). The bauxite mining companies responded by shifting production to developing countries whose governments were more eager to please, greatly reducing Jamaica's annual income.[54]

In addition to this financial instability, "Manley feared that a destabilization campaign had been initiated in Jamaica with the aim of toppling his leadership" (Katz 2003: 234). In March 1974, in an attempt to curb the growing politically-instigated crime epidemic, Manley introduced the Suppression of Crime Act and the Gun Court Act (Katz 2000: 192). This latter act led to the creation of "the notorious Gun Court on South Camp Road", a "barbed wire-encased fortress" which served as both court of law and detention centre (ibid.; 2003: 214). Trials were conducted without juries and guilt could be established with the possession of a single bullet shell (ibid.). There was no opportunity for bail or appeals and although maximum sentence was initially indefinite detention, it was later changed to mandatory life imprisonment (ibid.).

In February 1975, Edward Seaga, who was then leader of the opposition, aimed to show that Manley had lost control of the country and requested a State of Emergency (ibid.). The request was denied and the violence, which was largely JLP instigated, continued to escalate (Katz 2000: 245; 2003: 234). The next month, one of Manley's bodyguards, PNP "heavy" Winston "Bury Boy" Blake was killed (Katz 2003: 234). "During his ostentatious state funeral, eight people were injured by sniper fire as the coffin passed the JLP stronghold of Tivoli Gardens" (ibid.). In early 1976, twenty homes were firebombed after JLP gangs started a gunfight in Trench Town that raged throughout the night (Katz 2000: 246; 2003: 234). The following day, JLP saboteurs infiltrated a PNP picket of an International Monetary Fund convention in New Kingston and started a riot in which dozens were killed (ibid.).

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[53] Researcher Norman Girvan had found that, for twenty years, Jamaican bauxite valued at fourteen dollars a ton in the U.S. was being declared at half that amount for Jamaican tax purposes (*Super-Companies*, National Film Board of Canada, 1987; dir. Boyce Richardson, prod. Barrie Howells and Mark Zannis).

[54] Katz 2003: 233; *Super-Companies*, National Film Board of Canada, 1987; dir. Boyce Richardson, prod. Barrie Howells and Mark Zannis.

Further, in May, eleven people were left dead and over five hundred left homeless after a JLP gang fire-bombed a West Kingston slum yard (Katz 2003: 234). As the above suggests, particularly with the fire-bombing of slum yards, it was the poorest that were being targeted with these acts of party-sponsored terrorism.

Automatic weapons and fire-bombs were being used with "increasing frequency" (ibid.) and Manley's suspicions about a destabilization campaign were given credence when Philip Agee, an ex-CIA officer, confirmed Manley's worst fears (Gunst 1995: 18). Philip Agee came to the island in September 1976 in order to identify several agents on the island (ibid.) and "speak out about the Agency's destructive presence and its overall control of the region" (Katz 2003: 234).

Over 160 Jamaicans had been killed in election-related violence by June of that year (ibid. 234-235). Despite his initial reluctance to concede to Seaga's request, Manley was forced to instigate a State of Emergency that month (ibid.). However, levels of violence remained so high that the State of Emergency was kept in place for "a full ten months" (ibid. 234). Not surprisingly, "The election campaign was resolutely violent" (ibid. 235). Notably included in Manley's diary of destabilization attempts in the run up to elections is the shooting of Bob Marley, his wife Rita, and manager Don Taylor (Barrow and Dalton 2001: 458). Early in December, seven gunmen "said to be from the JLP stronghold of Tivoli Gardens" had crept into Marley's Hope Road residence during a rehearsal break (Katz 2000: 271). Once inside, the gunmen sprayed "an array of home-made bullets into various rooms" (ibid.). One bullet ended up lodged in Rita Marley's head, another critically wounded Don Taylor, and a third grazed Bob Marley's chest, landing in his arm (ibid.).

Although Manley managed to hold on to the leadership in the general elections some two weeks later, he "sees the PNP's support among the upper working class and lower middle class dramatically reduced" (Barrow and Dalton 2001: 458). Further, the pattern of spiraling election bloodshed reached an unprecedented level by the end of the decade, as the 1980 elections brutally attest. These elections hold the nefarious record of being "the most violent to date" (ibid.). The M16 had become the weapon of choice and "orchestrated violence had

plummeted to new depths of depravity; the kidnapping and torture of citizens was becoming commonplace" (Katz 2000: 346). As Katz goes on to remark, "By the time Edward Seaga came to power [in 1980], around one thousand Jamaicans had died in election related violence; Kingston had been transformed into a hellish inferno. . ." (ibid.).

The escalating turbulence of the 1970s caused many prominent figures to reconsider their continued participation in the Jamaican sound system. By 1974, Dennis Alcapone had shifted his base to England, finding the new climate to be a welcome relief:

> In Jamaica the violence was going on and the dance was being shot down, a whole heap of shooting going on. The runnings was quite different here [in England] -- it was a cool operation compared to down there. Dance couldn't go on [in Jamaica], because if the police didn't shoot it down the rude boy did. . .
>
> (Alcapone qtd. in Katz 2003: 202-203)

U-Brown (b. Hugh Brown) similarly moved from deejaying King Attorney (later renamed Socialist Roots), which was based in Arnette Gardens, Kingston, out to Jack Ruby's Hi Power in Ocho Rios (ibid. 273). King Attorney/Socialist Roots was owned by PNP "enforcer" Tony Welch and, when the sound encountered difficulties in the mid 1970s, U Brown decided to shift over to Jack Ruby's Hi Power (ibid.). "Jack Ruby take me from Kingston when politics was getting hot", U-Brown explains, "because one time Socialist Roots did have to stop play -- too much pressure from the people and the police, and in those days police don't respect entertainer" (qtd. in ibid.).

U-Roy is still resentful of how officials dealt with these attacks on "poor people enjoyment" (U-Roy qtd. in Katz 1998: 88). Reflecting on the night in 1975 when King Tubby's set was destroyed by police for a second time, U-Roy states:

> I used to run a club in the country so I was there with the intention that I was supposed to leave to go to the [Home Town Hi Fi] dance. When I leave and was ready to go, some people tell me "that dance is mash up." I say: "What?" Them say: "Yes, the dance is mash up, police just mash up every thing." The police used to brutalize people a lot in Jamaica, that's why those police down in Jamaica, a lot of them give me some reason why I shouldn't like some of them, because they always been giving problem. They always be coming to dance and shooting up dance, they don't like to see big crowd of people. If they come to a dance, and they're driving past and see this big crowd, they just stop and shoot up the dance, nothing done 'bout it. It's like poor people enjoyment wasn't really fun. While those people just

> cannot afford to pay this big money to go to Sheraton to a ballroom dance or thing, this little sound system dance is these people's enjoyment; these police just come by and shoot it up, and that's fun for them. They love to see people running up and down, they talk about that. I don't like those type of stuff.
>
> (U-Roy qtd. in ibid.)

After the first attack on his set in 1973, King Tubby had decided to cease operating his sound and focus instead on studio engineering (Katz 2003: 216). "But everybody said, 'Tubbs, you have to bring back the sound'" ("Prince" Philip Smart[55] qtd. in ibid.). With some reluctance, in late 1973, King Tubby decided to rebuild (ibid.). In the process of rebuilding, Tubby constructed an amplifier that would take the sound system by storm:

> The first dance that play was at Up Park Camp where they have the Gun Court right now. . . Around midnight, U Roy ride in on him bike and tune up the sound. Nobody know that Tubbs put a secret thing in the amp: when they put on the mike, U Roy say, "You're now entertained by the number one sound in the land-land-land-land-land-land", the first time people hear echo [in the sound system]. . . A man lick a shot inside Camp, fire a shot inside the dance, the way that it sweet them![56] That was the first time him unveil echo in an amp and you can't see it, because he have it incorporated inside the amplifier.
>
> (Philip Smart qtd. in ibid. 216-217)

Adding to the excitement of the unveiling of this unseen piece of equipment, Tubby premiered the now classic "Stalag" rhythm that same evening: "[Winston] Riley brought 'Stalag' and give it to Tubby. . . That was the first time it played and that was the first tune that play that night, play for about a half an hour" (Smart qtd. in ibid. 217).

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[55] Philip Smart was then resident engineer at King Tubby's studio (Katz 2003: 215).

[56] Becoming overwrought with enthusiasm, one man fired off a gunshot in the dance; an exciting new sound or song tended to incite such excessive reactions from both dancehall fans and police alike. Cornell Campbell describes this situation in relation to his "Natty Dread In A Greenwich Farm": "I said to Bunny Lee, 'What you think about "Natty Dread In A Greenwich Farm", you think it going to be anything?' Him said, 'Yes, man, that is a bad tune.' King Tubbys tell me, 'Boy Cornell, I went to East [Kingston] the other night and hear the song a play, and somebody tell me police want to raid the place and shoot up the sound, because the way the song bad, whole heap of man get mad up there' -- every time a song going to hit, some disaster happen" (Katz 2003: 214). Alcapone remembers a similar reaction to the first instrumental dub plates: "When that play in the dancehall it cause a big riot. . . You'd be playing the vocal off a song. And then you lick it again. And it come, and all of a sudden you're hearing no voice. Then the dancehall explode pure noise and thing. Everybody love that. . . one time I was on the mike, and a man fire off a gunshot behind me, and the mike pick up the shot and just echo it through the dance. And the crowd go crazy" (Salewicz and Boot 2001: 83).

King Tubby's celebrated return did not last long. In 1975, shortly after Philip Smart departed to New York to further his training in electronics, Tubby's Home Town Hi Fi was permanently put out of commission (ibid.). According to Smart, this second police attack occurred at "some politics dance" (ibid.). "Police spray the amps [with bullets] and took away the amps. Tubby was suing the police because them mash up his sound, shoot up the dub plates and a whole heap of thing. Him was very upset" (ibid.). Dave Hendley adds that this event took place at a dance "up country" after the police stopped the proceedings, claiming that Tubby had no license to play (1987: 92). "A disturbance followed resulting in the over enthusiastic representatives of law and order shooting the amps and speakers to splinters. Within a few minutes all the careful work of many years was destroyed" (ibid.).

"With King Tubby's sound out of action, *U.Roy* sought to fill the gap with the creation of his own sound, King Sturgav" (Katz 1998: 89). Started in 1976, King Sturgav was "immensely popular" throughout the rest of the decade (ibid. 90). Initially, U-Roy deejayed on Sturgav himself but then decided to open the mike up to younger deejays (ibid.). Rankin' Joe and Jah Screw became deejay and selector: "Screw is a really good selector, and Joe is a really good deejay. We used to carry the biggest crowds, believe me. After Joe and Screw leave, I got *Charlie (Chaplin)*, and *Josey (Wales)*, and the sound get bigger yet" (U-Roy qtd. in ibid.). However, U-Roy's experience of success resembled Tubby's in more ways than one, for it would not be long before King Sturgav "too succumbed to police and political pressure" (ibid.). As U-Roy explains:

> It started going on some envious way, some people that call themselves politicians, they take away my sound, shoot up my dance and take away my sound. This was in 1980. People who have sound also, in the political party, they were envious. They don't like my little sound, and they even have a sound themselves, but this was a big problem to them, because I used to have all the people come into my dance. They use a lot of badness on people, which I didn't really do. These people was just envious. . .
>
> (U-Roy qtd. in ibid.)

At present, this repressive climate has essentially strangled what few larger sound systems still remain. As King Jammy states:

> There's only about four or five big sound systems in Jamaica now and they play in smaller clubs a lot rather than lawn dances --Stone Love, Metro Media, Renaissance and a couple of others. My sound [King Jammy's Super Power] has sort of retired. . . because it's so difficult. Sound systems need a special permit these days; and they've come down on sound men with a charge of making excessive noise in public. . . They would fine you and if you did it twice they either charge you a larger sum or seize your sound system for while. They were always seizing sound systems and it got too much for many soundmen so they just packed up.[57]
>
> (Jammy qtd. in Bradley 2002: 29)

The concerted efforts of the police and political elite, described at length above, seem to suggest further similarities to the pattern identified in the work of Harold Innis. In the conclusion of "Minerva's Owl", Innis states that "sudden extensions of communication are reflected in cultural disturbances" (1951: 31). He provides support for this analysis with a page of examples, providing a summary of the major developments in communication in the Western world since the beginnings of civilization in Mesopotamia (ibid. 31-32). Due to the fact that improved technology tends to strengthen force on the offensive (in opposition to the defensive demands around which monopolies of knowledge are typically established), the "cultural disturbances" that accompany these "sudden extensions" result in periods where "force occupies an important place" (ibid.). The lashing out of the Jamaican political elite through the mobilization of police terrorism and rudie militias appears to constitute a similar dynamic. Threatened by the encroachment of a powerful new political rallying force which was beyond the reach of either party[58], the sound system became subject to violent state repression.

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[57] It is interesting that, in this same interview, King Jammy describes a growing importance of radio in the wake of the sound system's decline. "They're not as important as they once were", King Jammy explains, "because there's more radio stations and the radio [now] plays so much reggae that producers don't need to rely on the sound systems so much. When we do a new song these days instead of cut a dub for the sound system, we burn it on a CD and send it out to the radio stations and get feedback that way. In many ways, it's better for us because the radio covers the whole island all the time and more people listen to the radio than go to sound system dances" (Jammy qtd. in Bradley 2002: 29).

[58] Although with the 1970s, Stolzoff describes a co-opting of the sound system into partisan party politics, interests of self-preservation and economics tended to discourage sound system owners from having exclusive ties with either party (2000: 96-97). For instance, Bunny Goodison recalls the predicament of "[a] sound system up in Arnette Gardens, which is a PNP stronghold, named Socialist Roots or Socialist International. Oh man, he [Tony Welch] had to only play in his

As touched on in Chapter One, these efforts can be put into relief by the rigidities of those dominant media by which the elite maintain their monopolies of knowledge. Stolzoff makes specific reference to the perceived undermining of "political meetings" by the sound system, but other dominant media have also been considered. For example, in the previous chapter, the obstructive role of radio (p. 25-28), press, the parliamentary system (p. 22-25) and imported vinyl records (p. 28-34) has been discussed in some detail. In the current section, spiraling political warfare has further demonstrated the hostility of the (print and gun-based) political apparatus toward mass participation. The rigidity of Bakhtin's "authoritarian word", with its complete lack of "any zones of cooperation with other types of words" (Pomorska 1984: x), comes to mind here as well. The general unresponsiveness of such dominant media (i.e., press, radio, political meetings) under Jamaica's political system thus helps explain their weakening hold on the population as well as the rise of competing technologies, particularly those offering greater access and participation. For in the case of Jamaica, the socio-technological changes brought on by mining, rural outmigration, urban swelling, as well as military and international capital expansion, are mapped onto the open wounds left by slavery, festering under continued violent class oppression and the more recent terror known as "tribal war".[59] In such a situation, habits of self-preservation tend to drive overtly subversive expression into those generally neglected areas of leeway.

While Mumford's preference for restraint (through human-technological symbiosis) brings him to a somewhat moderate criteria for "perfection" in the machine arts, the idea of a shrouded region of expression--*dispersed in function*--seems especially suited to the dub-version. If, for Mumford, the perfection and essence of machine art is found in the expression of its function, the dub-version pushes such expression to an extreme. The excessive display of the multi-track interface in this form suggests an interaction between use and meaning which surpasses Mumford's symbiotic ideals for machine art. (Although

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area. If he went out [he would be exposed to considerable danger], because by then the police and the soldier forces were pro-[JLP] or anti-Manley (ibid.)."

[59] "Tribal war" is a Jamaican term for the political terrorism which began to emerge in the late 1960s.

there is much severity and precision in the minimalist inclinations of dub, I am thinking specifically also of the baroque flourishes which betray a complete disregard for restraint.) One way to position this excess (as well as its counterpart; basic necessities) is to consider the dub-version as a translation of political struggle to the realm of technological practice.

SECTION IV
DANCING IN THE SOUND SYSTEM

> Basically we found a sound that was popular with the dance crowd in Jamaica and worked from there. The songs were really based on dancing.
>
> (Coxsone Dodd qtd. in Chang and Chen 1998: 21)

With all this talk of the expression of function, one should also remember that the sound system was not a place for listening, it was a place *for dancing*. It was a place for dancing *together*. As Winston Blake explains:

> In our era you had to be able to dance, if you couldn't dance you got no respect. So, in the eras of the '50s, '60s, '70s, up to the early '80s, dance was the god. The sound was important, but what was even more important was the movement to the sound. So if you came to a dance and you couldn't dance, what are you doing there? If you couldn't dance, you're a spectator, because there is no way you are going to get a dance with anybody. . .
>
> (Blake qtd. in Stolzoff 2000: 56-57)

Thus, the way that people danced was a matter of serious concern for soundmen and those involved in recording. More specifically, the dancing public served as a barometer for potential new directions in sound. Coxsone Dodd reflects on this relationship as follows:

> I did a lot of experimenting. I used to record the music, put it *on a dub plate* and go straight to the dancehall and watch the reaction. Many a time we make the record and change it around, watch the reaction and *change it around to suit the fans. How they were moving* and not so much as what the people say.
>
> (Dodd qtd. in Chang and Chen 1998: 131-emphasis added)

"How they were moving" becomes the criteria by which the viability of a recording or innovation is judged. One might also note the central role of the dub plate in this experimental circuit, enabling feedback to be

registered almost immediately at the site of production (the recording studio). As Dodd explains, this format also helped open access to those without professional musical training: "Being handicapped by not being a writer, a musical writer, I've got to find ways of recording my ideas so I can look back and think of what I was thinking a the time" (ibid.). "Even tape recorders weren't easy to get in those days -- they were very costly" (Dodd qtd. in ibid.). The dub plate therefore provided an ideal medium for producers, both economic and practical, it could be used to document past experiments in the studio and test new ones in the sound system.

From early on, Dodd was well aware of the appeal of dancing for his supporters. In fact, when Dodd first started his sound system, he had his partner develop "a flashy new dance step to go with each new disc" (Bradley 2000: 28). Dodd and his partner "would perform in perfect tandem the first few times the tune was spun" (ibid.). According to Bradley, "Downbeat followers looked forward to doing the dances as much as they did to hearing the cuts and it quickly made Dodd's name" (ibid.).

Aside from being the testing ground for potential new developments in the sound, dance also offered a point of access where opportunities for participation were few. For example, Lee "Scratch" Perry, certainly one of Jamaica's most creative and eccentric producers, became well known for his skillful dancing form an early age. Born in the rural town of Kendal, Lee Perry would use his bicycle to frequent dance competitions which were held in Jamaica's western parishes during the sugar-cane crop season (Katz 2000: 1, 6-7):

> I become the dance champion, win all the dance, the best dance. The "Neat Little Thing" they call me, the "Neat Little Man". From there I start to go into the music, and start to have the love for the dance music that can make me do funny things, some Yankin' and some crazy things before rock and roll. . . Me think about it, and find meself from the dancing, I want to get into the music now.
>
> (Perry qtd. in interview with Bruno Blum, Zürich, May 1994, qtd. in ibid. 6-7)

Lee Perry's description of doing "funny things" such as "Yankin'" is in reference to a step called *the Yank* which was popular in Jamaica at the time. As Winston Blake explains, the drastic movements which

characterized this dance resulted in many injuries (ibid.). Due to the skill and risk of injury involved in this step, any dancer who could Yank well received considerable respect. In fact, Blake claims that so many people were dislocating their hip from attempting the Yank that the newspaper ran a large announcement stating: "'No bed at the hospital for Yankers', because people would Yank themselves out of control" (Blake qtd. in ibid.).

Count Machuki is another pioneering figure who entered the sound system via his acute dancing sense and prowess. Machuki's dancing initially helped Tom Wong identify hits for his sound: hanging out in front of Wong's hardware store, Machuki recalls that "by dancing to the records [that were good], I would let Tom know which ones people would dance to" (Machuki qtd. in Stolzoff 2000: 55). Sylvan Morris's dancing served a similar function while he was recording engineer at Coxsone Dodd's Studio One:

> I sort of revolutionized the sound, because whenever a session is being done I never used to sit down at the [mixing] board. I used to stand up, because I have to dance while I feel the music. If the musicians see me don't dance, they stop play, say, "What's wrong, man?" I say, "I don't like the bass line".
>
> (Morris qtd. in Katz 2003: 121)

Edward "Bunny" Lee, one of reggae's leading producers in the late 1960s and much of the 1970s, also "gained an early reputation as an able dancer of the Mashed Potato" (Katz 2003: 31, 98). As singer Roy Shirley explains, "I took Bunny Lee to Joe Gibbs to help him, because Bunny Lee was known as one of Jamaica's greatest dancers, he could dance a thing named "Mashed". Everywhere he go, a lot of people leave out of the dance; him mash up 'nuff dance and create road block, so me know he's an exciting guy" (Katz 2000: 53).

In terms of Machuki's successors, both Sir Lord Comic[60] and King Stitt[61] made their way into the sound system through dancing (Bradley 2000: 294). As King Stitt recalls:

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[60] Sir Lord Comic was the first deejay on record to score two "massive hits" with his slow drawling toasts on "Ska-ing West" and "The Great Wuga Wuga" in 1967 (Barrow and Dalton 2001: 128; Katz 2003: 163). According to Katz, these two recordings were "pioneering attempts to extend a deejay's chatter throughout an entire rhythm" (2003: 163-164).

> I started my musical career in the year 1957, when I came to the attention of Sir Coxsone's Downbeat sound. . . Count Machuki took on to me because he found I was really interested in dancing, and I could dance to his opening selection, because in those days you had some hard up-tempo r&b. And he found I could dance to all of them. He said, "If you can dance to all these records that I'm playing, you'd make a good deejay." Well, I started and for about three months was the second deejay on that set, with Count Machuki.
>
> (Stitt qtd. in Barrow and Dalton 2001: 129)

This means of entry is particularly significant for it underscores the participatory nature of the sound system and suggests how the deejay functioned as a catalyst for this process. In contrast to Duke Reid's selector, "Cliff", who would turn his back to the crowd and refrained from speaking while he played, Count Machuki "danced and talked the crowd into a frenzy" (Stolzoff 2000: 55). It was Machuki's approach to deejaying which, by building on the collective bond of dancing through verbal play and wit, came to define the interactive potential of the sound system. Further, the dub plate demonstrated that this interactive process could be harnessed by not only deejays, but also extended to producers, musicians and engineers in the studio.

However, like a ringing phone, participation in the sound system was also summoned through the technology itself. One can detect this summoning function from early on, when storefront systems would be used to hail potential customers. This combination of sales pitch and entertainment also seems present in the use of sets at political rallies, another context which has been credited with spurring the early sound system (Goodison qtd. in Stolzoff 2000: 42). According to Dodd, the very form of the sound system meant that advertising with flyers was unnecessary:

> Well, we'd get to the place early, setting up (speaker) boxes, placing them to cover every area. . . We have both the woofers and the tweeters, so you could have a good coverage. *With stuff like that, you could hear the sound system from miles away. Without flyers, people usually listen and track it down.* . . When you start the dance (at) maybe 6 o'clock in the evening, you actually know that nobody coming to the dance until 8, 8:30. But at least some people hear this sound, and *they truck it from miles away to come to the dance.*[62]

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[61] In 1968, King Stitt ushered in a "more substantial" wave of deejay hits, most notably with his "Fire Corner" and "Herbman Shuffle", recorded for Clancy Eccles and Lynford Anderson respectively (Katz 2003: 164).

[62] Dodd qtd. in interview with Glickman, *Tokion* 32, Nov./Dec. 2002: 41-emphasis added.

A number of interesting issues are raised by Dodd's account. Implicit in this description is the notion that the capabilities of one's equipment bears a direct relation to the size of the sphere of potential participation. Further, the vast power and range of such equipment also draws attention to the overwhelming intensity of reception on the dance floor. "Depending on its pitch and loudness", write Chang and Chen, "[the] bass resonates the facial mask, the abdominal cavity and even the pelvic area" (1998: 78). In his interview with Coxsone Dodd, Adam Glickman asked:

> AND THE [SOUND SYSTEM] CROWD WANTED IT THAT LOUD?
> C[oxsone] D[odd]: Yes, if it's well crowded, it needs the power for everybody on the dance aisle to feel the vibration, and they love it that way. You play loud, so when the dance is full (the) strong bass push you in the stomach. (*Laughs*)[63]

As Dodd points out, bass frequencies are so pronounced that they become perceptible not only with the auditory sense, but throughout the entire body, particularly in the abdominal region. Further, as each body on the "dance aisle" is penetrated with sound waves, the sound level and quality is slightly modified. As Dodd explains above, "if it's well crowded, it needs the power for everybody on the dance aisle to feel the vibration". In other words, as the number of people at a dance increases, so too does the absorption of sound through the accumulation of dancing bodies. Message transmission here must take account of not simply the sense of hearing, but also the physical presence of the human body itself, with all its material implications.

In concluding this section, a final note on this dance driven (sound system-recording studio) circuit of production warrants mention. Due to the human physiology of reception, an interesting thing happens when dancing to beat-based music. Shortly after one begins dancing to a song, due to a process known as entrainment (a kind of frequency homeostasis), the heart and respiratory system tend to coordinate themselves with the beat of the music (Clayton, Sager and Will 2004: 3-16). In this sense, a rather special relationship is established between the

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[63] ibid.

music played over the sound system and the hearts of its patrons. Further, as the discussion of the bi-directional movement of influence between dancing and musical development suggests, this relationship is reciprocal.

Thus, as I trace this circuit from the sound system into the recording studio in the following chapters, one might keep in mind that the notion of a human-technological symbiosis is perhaps not all that far fetched. While attention will be largely focused on various unorthodox recording studio practices and developments, it should be remembered these are very much an extension of the dancing bodies and beating hearts of the sound system public, for it is these which serve as the foundation and ultimate test for any innovation.

PART II
JAMAICAN RECORDING STUDIOS AND DUB

INTRODUCTION

In the next two chapters, attention is shifted from dub in the sound system to dub in the recording studio. Chapter Three attempts to chart the development of Jamaican recording studios from the first rudimentary turn-crank disc recorders to the arrival of stereo and multi-track facilities. Record pressing and mastering capabilities also play a significant role in this development, with the dub plate continuing to be an important medium of experimentation. However, the technology that really takes centre stage in this chapter is multi-track recording, which I follow from its beginnings with Les Paul out to its use by Jamaican dub practitioners. It is the translation of function between these two contexts which proves particularly intriguing, both practically and theoretically.

Following the arrival of mastering capabilities in 1960 and multi-track facilities in the late 1960s, a number of new studios came on the scene to challenge the dominance of industry giants like Federal Records and WIRL/Dynamic Sound. The spread of multi-track technology via this wave of new studios is explored through the installation work of "technological wizard" Bill Garnett. Beginning as Federal studio's technical engineer during Graeme Goodall's tenure, Bill Garnett's installation work takes us through the establishment of Randy's, Joe Gibbs, Harry J's and Channel One.

Similarly, in Chapter Four, the movement of engineering skills is traced from Australian radio technician, Graeme Goodall, to apprentices Lynford Anderson and Sylvan Morris. Lynford Anderson in turn passes valuable knowledge on to Niney the Observer and forms an important partnership with Lee Perry. Another innovative engineer, Errol Thompson, begins by working under Sylvan Morris at Studio One before becoming a crucial element in the success of Randy's and later Joe Gibbs' studio.

The transfer of "obsolete" equipment is also revealed to be fundamental to the establishment of a number of innovative facilities, such as Coxsone Dodd's Studio One, King Tubby's Dromilly Avenue home studio, and Lee Perry's Black Ark studio. These three premises provide

the focus for the latter part of Chapter Four. Of particular interest are the unorthodox studio practices of Sylvan Morris, King Tubby and Lee Perry at these facilities. Numerous intersections of influence become apparent here, especially between Tubby and Perry, whose pioneering work in the dub form often overlap (i.e., together the two mixed one of the first dub LPs, *Blackboard Jungle Dub*, in 1973).

Chapter Four concludes with the dismantling and destruction of the Black Ark studio and notes some of the new directions in dub-mixing developed at King Tubby's. Shaped largely by King Tubby's apprentices, these new directions provide the basis for the emergence of the lean new dancehall sound (particularly with Scientist's hammering minimalist mixes, beginning 1979, and King Jammy's digital rhythms, which exploded on the sound system in 1985). The emergence of this new style is suggested as an excellent area for further study.

Lee Perry's contributions are by no means totally eclipsed with the shift to dancehall. However, his incessant drive toward constant innovation combined with various mounting pressures bring Perry and his studio to a dramatic breaking point. Fragmentation is in fact a central theme in the investigation of dub (what I present here as the *dub fragment*, under the influence of Walter Benjamin) so it is perhaps suiting to end on Perry's chaotic breakdown.

CHAPTER THREE
JAMAICAN RECORDING STUDIOS: FROM TURN-CRANK TO MULTI-TRACK

SECTION I
THE FIRST RECORDING STUDIOS

Stanley Motta's Studio

> In those days there was only one recording studio in Jamaica. That was Stanley Motta on Harbour Street. In those days recording wasn't a business - it was more live music.
> (Laurel Aitken qtd. in Katz 2003: 13)

Around 1950, Stanley Motta introduced what appears to be the first primitive recording facility to the island (Barrow and Dalton 2001: 3). As singer Laurel Aitken notes, the studio's rudimentary setup made for a recording process that was much closer to live music than a studio session. Motta's studio, which was located in a room at the back of his appliance and photography supply store, consisted of a piano, one microphone and a basic recording device (ibid. 8; Katz 2003: 13). Katz explains that "The exact form of Motta's [recording] equipment is disputed; he may have cut straight on to acetates before he acquired a tape recorder" (ibid. 349 n.4).

At the age of sixteen, Motta quit his apprenticeship at his uncle's garage to open up his first radio-parts shop on East Street (Katz 2000: 16). At nineteen years old, "he became a pioneer in his field by introducing the popular Sylvania lighting system to the island" (ibid.). Motta later went on to establish a chain of electrical appliance stores (Barrow and Dalton 2001: 8). Perhaps most significantly, Motta operated "one of the earliest sound systems" (Barrow and Dalton 2001: 8).

Motta's first releases were 78 rpm 10" mento[1] singles, debuting the talents of such artists as Lord Flea, Laurel Aitken and Trinidadian

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[1] As Barrow and Dalton explain, "Mento is often described as the Jamaican variant of calypso", however, "in the final analysis, mento derives chiefly from Jamaican folk [culture], and displays a wide range of tempos and song types" (Barrow and Dalton 2001: 7). Kenneth Bilby adds that, although mento's exact origins are obscure, "it is clear that the mento was born of a creolizing process that blended elements of a European social-dances with African-derived stylistic features"

immigrant Lord Tanamo (ibid. 8; Katz 2000: 16). Lord Tanamo's later recordings were backed by a band which included pianist Theophilus Beckford and Jones Town guitarist Ernest Ranglin (Katz 2000: 16). Both Beckford and Ranglin would subsequently play a prominent role in shifting the beat from Jamaican boogie (rhythm and blues) to ska[2] (Katz 2003: 23, 32-33). Previous to his work with Motta, Ranglin was also featured on some of the earliest recordings ever done in Jamaica (ibid. 33). The first recordings, which featured Ranglin playing "Hawaiian guitar music", were apparently cut onto wax cylinders for an unnamed entrepreneur (Katz 2000: 16). This medium seemed to soon be displaced with the upgrade to pre-electric "turn-crank operated Recordio-disc type machines" (Katz 2003: 33). According to Ranglin:

> The first time I went in to the studio, I was with seven guys. We used to play Hawaiian music in a little group when I was a young boy. We did this one record, and in those days they had to [manually] turn the vinyl - it has to keep turning. I don't think it was for a company - it was just a record that we did. This was long before studios were being built. It wasn't for commercial purposes.
>
> (Ranglin qtd. in ibid.)

However, it is Stanley Motta that is generally credited with being the first to promote and issue local recordings in both Jamaica and abroad (Barrow and Dalton 2001: 8; Katz 2003: 16). This was no easy task, as the first pressing facilities were not introduced to the island until the mid 1950s, and the first mastering facilities were not established until 1960.[3]

To overcome these serious obstacles, Motta drew on his connections with "well-respected Jamaican jazz musician Bertie King", who had been a London resident since 1935 (Barrow and Dalton 2001: 8). Through this connection, Motta was able to send the master tapes of

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(1995: 153). Mento is typically performed by a combination of European instruments, such as "fiddles, flutes, and guitars" and various instruments "wholly or partly of African origin", such as "banjos, rhumba boxes (bass instruments with plucked metal lamellae), drums, rattles" and scrapers (ibid.; Stolzoff 2000: 23).

[2] Ska music emerges in the early 1960s, closely associated with the independence movement, and is "the first Jamaican style to attract significant foreign interest" (Katz 2003: 1). For these reasons, Katz explains, ska "is often regarded as the starting point of contemporary reggae" (ibid.)

[3] Chang and Chen 1998: 85-85; Barrow and Dalton 2001: 8-9; Katz 2003: 14.

Harold Robinson and the Ticklers' "Don't Fence Her In"/"Glamour Girl" to London "to be pressed by UK major label Decca through the auspices of Emil Shallit's London-based Melodisc company, which had previously issued Jamaican music recorded in London" (ibid.). As Barrow and Dalton go on to explain, this 1952 release "set the pattern for all mento discs issued on the MRS (Motta's Recording Studio) label, with the fragile 10" 78s being pressed in London and then shipped back to Jamaica" (ibid.). This pattern would persist throughout the rest of the decade: "Domestic recordings would have to be sent to Miami, New York or London for mastering, a lengthy, costly and risky procedure", notes Bradley, "acetates or finished masters were frequently damaged in transit, while nearly as many were lost at sea" (2000: 24).

This situation also explains why, up until the 1960s, most locally recorded sound system hits existed only in dub plate form. The first post-mento Jamaican recording to gain popularity on the sound system was "End Of Time", by Noel "Zoot" Sims (a.k.a. "Skully") and Arthur "Bunny" Robinson (Barrow and Dalton 2001: 17; Katz 2003: 14-16). "End of Time" was produced by another early recording entrepreneur named Dada Tewari, who had also brought Laurel Aitken his first big hit with "Roll Jordan Roll" (Aitken in Katz 2003: 14).

Although financed by Dada Tewari, "End of Time" was apparently recorded at Stanley Motta's studio, with Tewari not even present during the session (Barrow and Dalton 2001: 17; Katz 2003: 15). As Noel Sims proudly recalls, "That was the first [Jamaican] R&B" (Sims qtd. in Katz 2003: 15). Although remaining exclusively as a dub plate for sound system play (Barrow and Dalton 2001: 17), "other singers remember 'End Of Time' as a popular hit in Jamaica" (Katz 2003: 16), suggesting the growing influence of local dub plates.

Sims and Robinson began their singing careers at the talent contests of Vere Johns (ibid. 15). These and other similar contests served as the training ground for Jamaica's aspiring rhythm and blues singers and soon became seen "as a route into the recording studio" (Barrow and Dalton 2001: 18-20). "We was the champion [at Vere Johns' talent contests] for two years straight", Sims remembers (Katz 2003: 15). Despite the success of their pioneering rhythm and blues recordings, Sims explains that it was live performances, rather than

recording, that continued to be their primary focus: "We keep going to shows on the North Coast, but we did not do much more recording because it wasn't popular like now" (Sims qtd. in ibid.).

Sims also notes that one of the biggest influences at this time was his Denham Town neighbour Lord Flea, whom he names as "the first artist in Jamaica to make a big hit" (ibid.). Interestingly, Lord Flea's main role models were Slim and Sam (ibid.), the street troubadours mentioned at the beginning of Chapter Two. In the 1920s and '30s, Slim Beckford and Sam Blackwood (ibid. 16) would write and chant current-event lyrics over tunes typically taken "from the widely used Sankey hymnal" (Stolzoff 2000: 37). As Sims recalls, "Slim and Sam were the two men who start music in Jamaica on the streetside of Spanish Town Road. . . one playing guitar and both of them singing in harmony. The songs that they sing, they have it on paper, [the lyrics] printed out, and sell it for a penny -- that was their livelihood for years" (Katz 2003: 16).

Early Self-Produced Recordings

Inspired by the success of Sims and Robinson's "End of Time", in 1957 Derrick Harriott decided to enter Vere Johns' talent contest with schoolmate Claudie Sang Junior (ibid. 25-26). Their cover of Bobby and Ronald's "You're Mine, All Mine", was met with an enthusiastic response: "we tear it down everywhere you can think of" (ibid.). Greatly encouraged, Harriott attempted to move into self-production, soon becoming Jamaica's "first artist-producer" (Harriott qtd. in Katz 2003: 27). Yet before going on to establish his Crystal label in 1960, Harriott was confronted with the lack of mastering facilities on the island and the realization that, in the late 1950s, the only way an artist could afford to make a self-financed recording was to cut directly onto dub plate:

> About '58. . . we decided we want to hear our voices, so we actually went down to Stanley Motta's - they had like a dub [cutting] machine. We did a song called "Lollipop Girl": Claudie Sang played the piano, we sang, and then we put in a hand clap - that's all we had. While you're singing it, they're cutting it same time, straight onto the acetate - so if you make any mistakes, you're in trouble.
>
> (Harriott qtd. in ibid. 26)

As Laurel Aitken observed earlier in the decade, one can appreciate the extent to which studio recording is still much more in the realm of live music. Fortunately, neither Harriott nor Sang made any mistakes, in fact, their "one-off special" became an immediate success on the sound system (ibid.). As Harriott recalls:

> We sold the slate [dub plate] to Thunderbird Disco, a sound from Maxfield Avenue area, and although it was only Claudie playing piano and me singing it mash the place up on a Friday afternoon after-work kinda session. It became such a hit on that sound that frequently the operator would have to lick it back [replay it] ten times in a row before the people would let him take it off. There was a time when it was that one record alone could draw a crowd!
>
> (Harriott qtd. in Bradley 2000: 40)

The reputation this disc gained on the Thunderbird sound system quickly attracted the attention of the big sound systems (ibid.; Katz 2003: 26). With scouts constantly combing the smaller sets for the hottest tunes on behalf of the big soundmen, anything new and well received was closely watched. According to Derrick Harriott:

> One way they'd [the big sound systems] try to stay ahead of their opposition was to send scouts round to all the little sound systems - and there was *a lot* in Kingston at that time - to check out what tunes were going down best then buying them up. And the only original tunes the little guys would have were the tunes made by Jamaican guys like Claudie and me. They'd make offers no small operator could afford to turn down. All the big systems used to do it.
>
> (Harriott qtd. in Bradley 2000: 40)

Harriott goes on to explain that:

> Coxsone himself came down, said he'd hear how "Lollipop Girl" was going great and he swapped one of his big exclusive American hits for it - a record the Thunderbird operator could never have got hold of otherwise. For a good little while Coxsone was mashing up the place with our tune. Then he played a sound clash with Duke Reid down on East Queen Street and "Lollipop Girl" was keeping him on top, until halfway through the night Duke played that tune too. *Coxsone was vexed!* I was told he wanted to know *so bad* how Duke got the record that he pulled a gun on him right there, and Duke pull one back. There was a big fuss that night, which might have got out of hand if the dance hadn't been situated next to the police station. I was told later that one of Coxsone's men had been bribed to take the record and lend it to Duke Reid to make a dub plate from it.
>
> (Harriott qtd. in ibid. 40-41)

It is these last few years of the decade that appear to mark a shift in the orientation of the larger sound systems. Once content to simply use smaller sound systems "as an ad hoc A&R department", the big sound systems now "hurled themselves into sponsoring their own recording

sessions" (ibid.). Harriott had just returned from visiting family in New York when he and Sang were promptly ushered into the studio by Duke Reid in December 1959 (Katz 2003: 26-27). Wasting no time, Duke Reid had Harriott and Sang record the immensely popular "Lollipop Girl" along with two other songs, "My Heart's Desire" and "Duke's Cookies" (ibid.). These songs were likely recorded at Ken Khouri's Federal studio (Bradley 2000: 41), a facility that will be discussed shortly.

However, the way that Duke Reid handled these recordings demonstrates the continued primacy of the sound system. Rather than issuing the material, Reid kept these tunes for exclusive sound system play for some time: "He had the song ['Lollipop Girl'] on his sound for one whole year before releasing it, and when he released it, it went straight to number one, and we had the number four song, [with] 'My Heart's Desire' - that was how big it was" (Harriott qtd. in ibid.).

Ken Khouri

In 1949, Ken Khouri made an important purchase during a trip abroad. "It happened by accident in Miami: I took my father there for his illness and I met someone who was selling a recording machine - a disc recorder; I bought it and came back to Jamaica" (ibid. 16). Initially setting up the disc recorder at his home, Khouri found there was an abundance of people willing to pay the 30 shillings per recording he was asking (Chang and Chen 1998: 84). Khouri recalls that "people used to follow me home and I would record until 2 or 3 a.m." (ibid.).

Recognizing the commercial potential, Khouri decided to set up his dub plate cutter at various night clubs and record calypsos (ibid.). "The first recording was with Lord Flea, 'Where Did The Little Flea Go?' [aka 'Naughty Little Flea']", states Khouri (qtd. in Katz 2003: 16). "The discs that I made, I send them as masters to Decca in England, and they make a record out of it and send it down to me" (Khouri qtd. in Katz 2003: 16). As discussed earlier, this route is very much the same as Stanley Motta had to resort to. However, Khouri is quick to take credit for being the first in this and virtually every other aspect of the early Jamaican record industry: "He [Stanley Motta] came in long after me, and that was just a

little voice recording set-up he had. [Dada] Tewari is about two years after. I am the complete pioneer of everything" (Khouri qtd. in ibid.).

In order to distribute the copies of "Naughty Little Flea" which Khouri had Decca press in London, he contacted Alec Durie, who owned a variety store in Kingston on King Street (ibid.). The two set up the Times Record Label and "Durie advertised the records in the Saturday newspaper" (Khouri qtd. in ibid.). As Khouri explains, "The first attempt was a real gamble. But when I got to King Street the Saturday, I saw a line two blocks long. We sold out in less than two weeks. I ordered 5,000 more records and we sold them for between four and five shillings" (Khouri qtd. in ibid.).

After securing the Jamaican manufacturing and distribution rights for Mercury records during a trip to New York in 1954, Khouri set up the Pioneer company (ibid. 17). It is through this licensing agreement that Khouri decided to bring "the first record-pressing equipment to Jamaica" (ibid.). Under such licensing agreements, the licensor would simply provide a metal stamper (Bradley 2000: 24) which would then be used as the pressing mold in the licensee's manufacturing facility. In order to secure the necessary pressing equipment, Khouri called a factory in California "which sold him the machinery and sent an expert to teach him about the recording business" (Chang and Chen 1998: 84).

Yet it was not until 1957, with the establishment of Federal Record Manufacturing Co. Ltd. at 220 Marcus Garvey Drive, that Khouri introduced "the first fully fledged recording studio and pressing facility" to the island (Katz 2003: 17). Khouri chose Australian radio technician Graeme Goodall as his resident sound engineer (ibid.). Trained in London, Graeme Goodall "initially came to Jamaica to help set up RJR's [Radio Jamaica Rediffusion's] cable service" (ibid.).[4] Previous to the establishment of Federal, it was RJR that offered the only other "stable recording premises on the island" (Katz 2000: 16). Like Federal,

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[4] In 1954, Graeme Goodall also helped Ken Khouri install his first single-track studio at 129 King Street (Chang and Chen 1998: 84). Khouri apparently brought the equipment for this studio down from California himself: "Just one microphone, one track", explains Khouri (qtd. in Katz 2003: 17). He called the studio Records Limited (ibid. 16). According to Chang and Chen, the King Street studio was located in a converted "maids quarters": "The small, wooden building with a zinc roof was right beside the [Pioneer] pressing plant. Recordings were done mainly at night" (1998: 84).

recording was done on a monaural 1/4" full-track[5] deck (ibid.). As described briefly in Chapter One, RJR became "Jamaica's first commercial station" after a British firm took over the government wartime station ZQI in 1950 (ibid.; 2003: 9). For an "inexpensive" amount, subscribers would receive broadcasts over a cable line that ran directly to their home (ibid.). Edward Seaga has emphasized the importance of RJR's studio in stimulating local recordings, and in his experience, this certainly seems to be the case. His first venture into production[6], which resulted in Higgs and Wilson's "landmark recording" "Manny Oh", was recorded at RJR in 1958 (ibid. 19). "Manny Oh", it has been mentioned, became "one of the earliest hits by a local Jamaican act" (ibid.). Seaga states that:

> It [RJR] opened the door, because Jamaicans now realized that they could not only compose and sing their music, but they could get it reproduced on records - it could go on the air and they were on their way. That one effort on record ["Manny Oh"] really opened the door for what followed as Jamaican music, and from there it blossomed into different beats.
>
> (Seaga qtd. in ibid.)

Although from Seaga's position of privilege, RJR's recording studio represented a world of opportunity, others were not so easily "on their way"; think of the pioneering efforts of artist-producer Derrick Harriott that same year. The establishment of Federal certainly improved this situation, giving "entrepreneurs greater scope to record local talent" (ibid. 17). Further, the old Ampex equipment Khouri purchased to outfit Federal "had a new feature of reverberation" (Chang and Chen 1998: 84).

However, there was still the aforementioned issue of mastering. As Heartbeat Records' A&R Director Chris Wilson explains:

> At first Federal enjoyed a monopoly on record pressing in the island, but they had no mastering capabilities. So this created a logistical nightmare for independent producers. In fact Coxsone's first session with Roland Alphonso was lost in transit and never found. The

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[5] "Full-track" refers to the format of tape recording head (Hurtig 1988: 7). Full-track machines record "across the full length of the tape, and once a recording is made, no further tracks can be added without erasing the original track" (ibid.). Because recording is done through a single-gap tape head, it is often referred to as single-track (ibid.). The gap in a recording head is where the translation between electrical and magnetic signals occurs (ibid. 6).

[6] As mentioned in footnote 51 of Chapter Two, Seaga had previously made field recordings of African-Jamaican religious-folk music as part of his anthropology research at Harvard (Katz 2003: 18). He later managed to get the recordings released on the Smithsonian Folkways label as *From The Grass Roots Of Jamaica* in 1956 (ibid.).

> producers were also unable to challenge matters like pricing, and this kept releases to a minimum.
>
> (Wilson qtd. in Chang and Chen 1998: 85)

This lack of mastering facilities has been attributed to the fact that both Ken Khouri and Edward Seaga (founder of the island's second pressing plant in 1959) were initially more concerned with pressing U.S. major-label material. It is interesting to note that both Stanley Motta and Ken Khouri's earlier local Mento recordings "were aimed at the overseas 'ethnic' market that was then infatuated with calypso" (Katz 2000: 16; 2003: 19). Yet with the establishment of Ken Khouri and Edward Seaga's pressing plants, this flow seems to reverse; a myopic focus on pressing overseas productions for the domestic market becomes somewhat of an obstacle for local (vinyl) recordings.

It is Dada Tewari who would forever change this situation with the establishment of his Caribbean pressing plant in 1960.[7] Chris Wilson states that:

> When Caribbean Records started pressing, costs came down by 75 per cent. Caribbean Records was run by Dada Tawari, whose family ran the Regal Theatre. The [Caribbean Records] building was located on Torrington Road. . . but was later torn down after a fire. The lowered price structure resulted in a flood of recordings, and a wealth of material was released during the ska era.
>
> (Wilson qtd. in Chang and Chen 1998: 85)

As owners of the Regal Theater, "The Tawaris understood the embryonic Jamaican music scene through the talent shows held there and, more than that, they weren't operating a recording studio but offering specialist mastering and pressing facilities" (Bradley 2000: 47).

It is not clear who moved in to provide mastering after the fire destroyed Dada Tewari's operation on Torrington Road. The necessity of going abroad no longer seemed to be an issue. As the 1960s progressed, "the music's increasingly popularity caused studios to flourish in Jamaica" (Chang and Chen 1998: 85). Only with the arrival of the first stereo recording equipment, introduced by Ken Khouri in 1963, would mastering still have to be done overseas. Further, Khouri's new stereo "super studio" was geared more toward "uptown" groups, such as Byron Lee and

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[7] Chang and Chen 1998: 85; Barrow and Dalton 2001: 8; Katz 2003: 14.

The Dragonaires, who released "Jamaica's first stereo LP, 'Joy Ride'" (Chang and Chen 1998: 85). Airing on the side of caution with this release, Byron Lee "decided to go two ways. The stereo version was cut abroad and a Hi-Fi version at home" (ibid.). Chang and Chen go on to explain that "despite being more expensive the stereo version outsold its counterpart three to one" (ibid.). Seeing this reaction, other "popular bands"[8] followed Byron Lee's lead into stereo (ibid.). The spread of stereo recordings not only signaled the establishment of a flourishing stereo LP market in Jamaica, more importantly for present purposes, stereo recording was a precursor to multi-track technology; the fundamental instrument of expression in the dub-remix.

SECTION II
PRECURSORS TO MULTI-TRACK RECORDING: SOUND-ON-SOUND ACETATES, DUAL-TRACK MONAURAL AND HALF-TRACK STEREO TAPE RECORDERS

There has been some confusion around the exact date of the arrival of the first two-track facility.[9] A brief review of tape recording head formats may be helpful in this regard. As mentioned above, it is Ken Khouri who apparently introduced the first two-track equipment to the island with the establishment of his stereo facility in 1963. Brent Hurtig explains that stereo recorders were developed in the mid 1950s "in response to the growing consumer acceptance of stereo LP (Long Playing) disks" (Hurtig 1988: 7). Also called *half-track stereo*, the key to

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[8] Chang and Chen list "Granville Williams, Kes Chin and the Vagabonds, The Caribs, Carlos Malcolm and the Afro Jamaica Rhythms" (1998: 85).

[9] For example Stolzoff (2000), who is otherwise quite insightful, presents a somewhat inconsistent chronology. On page 61, he states, "In 1954, Ken Khouri set up Federal Records, a studio with both two-track facilities and a record press" (ibid.). Several sources referred to earlier, including Khouri himself, indicate that this was not the case; it was Pioneer that Khouri established in 1954, and this was single-track facility. Further, stating that Federal (which was established 1957) had "*both* two-track facilities and a record press", without mentioning the difficulties surrounding mastering, gives a premature impression of self-sufficiency. As if unaware of his own statement concerning the arrival of two-track in 1954 on page 61, thirty pages later Stolzoff writes: "One of the first innovations to emerge in the late 1960s was brought about by the introduction of two-track recording technology" (ibid. 91).

this technology lay in the design of the recording head, which featured "*two* gaps, side by side, with a *guard band* in between to separate the signals" (ibid.). The "evolutionary precursor" to half-track stereo was dual-track monaural, which used two record heads next to each other, instead of a single 2-gap head (ibid.). The two record heads in a dual-track monaural machine were unable to record simultaneously, and the tape had to be turned-over to access the alternate track (ibid.).

The bridge from dual-track monaural to half-track stereo is made through a fascinating advance in military technology (ibid. 8). In fact, the early uses of the magnetic tape recorder, like those of the electrodynamic loudspeaker, brings one to the ideological front-lines of the Second World War. There is perhaps no better way of approaching these connections than by considering the experience of Les Paul, inventor of multi-track recording. I will attempt to keep the discussion of Les Paul brief, which is made easier by the scarcity of printed material on this remarkable history.

Sound-On-Sound: From Acetate to Magnetic Tape Recorder

In 1935, at the same time that Germany company AEG/Telefunken developed the earliest magnetic tape recorders, Les Paul was experimenting with overdubbing techniques in a different medium (ibid. 5, 8). Using a dub plate cutter and a turntable, Les Paul discovered he could build up an entire group of instrumentalists by playing along with his previous recording while cutting the composite result onto another disc, and then repeating the process (ibid. 8). "He presented his ideas for multitrack recording to several record companies, but they could only see the novelty value".[10] This reaction characterized the record industry's approach to "sound-on-sound" recording for some time. For example, due to an absence of background singers at a recording session in 1947, Patti Page recorded the additional vocal parts on "Confess" herself.[11]

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[10] I must resort to web site sources due to a lack of alternatives, in this case, an article entitled "Les Paul" in *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html>: 1, which features course material for a class at the Columbia University Computer Music Center.

[11] ibid.

"Mercury Records saw this as little more than a gimmick and marketed the record as performed by Patti Page & Patti Page. A similar PR approach was used on her follow-up recording, 'With My Eyes Open, I'm Dreaming' where she used the overdub technique to create four part harmony".[12]

Throughout the 1940s, Les Paul continued to push the dub plate medium to its "creative limits" with his sound-on-sound experiments, which featured on his releases for Capital Records.[13] However, with the end of the Second World War, Les Paul was introduced to the possibility of translating this process to a more flexible medium. Previous to 1945, the only magnetic recorders known in America were wire, or steel-band recorders (Hurtig 1988: 5). As the name suggests, steel-band recorders recorded onto a steel wire. "The wire was able to hold only a crude recording,[14] however, and magnetic tape was created as a superior recording medium" (Hurtig 1988: 5). The development of magnetic tape, carried out through a collaboration agreement between AEG/Telefunken and BASF, resulted in the presentation of the first successful tape recorder at the 1935 Berlin Radio Fair (Ritter 1988: 10-12). Called the Magnetophone, this machine was most notably used by German radio stations during the Second World War for propaganda broadcasts.[15] Another source states that, as early as 1935, "Adolf Hitler was using magnetic tape to record and broadcast speeches, unbeknownst to western engineers"[16]. However, by the end of the war:

> Rumors were pervasive in the American Army Signal Corps that the Germans had developed high-fidelity tape recorders. During the summer of 1945, corpsmen scoured the French and German countryside, acquiring the remnants of the German recording and radio industry.

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[12] ibid.

[13] ibid.

[14] N. Katherine Hayles notes that: "The questionable status of the ["telegraphone" wire recorder] machines was exacerbated when, during World War I, the Telefunken Company of America was accused of using them to encode and transmit secret messages to Germany" (1997: 77).

[15] "Les Paul", *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html> :1.

[16] This passage is taken from the Consumer Electronics Association web page on the history of audio recording <http://www.ce.org/publications/books_references/digital_america/history/audio_recording.asp> :1-2). The association appears to be fairly reputable and the information they provide on the Magnetophone seems consistent with other material.

> Major John T. Mullin[17] found two Magnetophons and sent them, along with several reels of red oxide [ferric-coated] tape made by Farben's BASF division, to his San Francisco home and started to tinker.[18]

"When the Allies went in to Hitler's occupied territory", Les Paul adds, "most of the things the Germans tried to destroy. The one thing they didn't attempt to destroy. . . [they] didn't think it was important, was a tape machine, which was invented by the Germans."[19] Les Paul goes on to explain that several of the service men who returned with these confiscated Magnetophones were close friends of his:

> When they brought the machines back, Colonel Ranger approached me, and told me in 1945 that he had a tape machine. I asked him, "What did he have?" He said, "a tape machine". I had never heard of that. I'd heard of a wire recorder. And so he was the first one to show me and play for me a magnetophone.[20]

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[17] Mullin was stationed in England from 1943 to 1944, "assigned to help improve the performance of Allied radar and other electronics" (Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man> :1). While spending nights alone in his lab at the Royal Air Force facility, "he tuned into the only classical music he could find, which was broadcast by the Germans from powerful AM transmitters inside the Reich. The performances of the Berlin Philharmonic and other groups sounded 'live', with none of the telltale ticks and pops of transcription discs -- 16-inch diameter 33 11/43 and 78 rpm records -- that were the norm in American broadcasting. Mullin reasoned that even Hitler could not compel musicians to perform continuously 24 hours a day, seven days a week. The Germans, he reasoned, had to have some kind of outstanding recorder that no one knew about. . . In July 1945, Mulling set out with some fellow officers on a fact-finding tour of Germany, which included an unforgettable visit to the subterranean radio and closed-circuit television studios in Hitler's bunker at his Bavarian mountain top retreat. . . Mullin also investigated the remains of a radio transmitter on Feldberg Mountain near Frankfurt" (ibid. 1-2). Although he found only "a bare antenna tower and a large generator", he met a British officer at the site who told him about a high fidelity version of the AEG Magnetophon that he had seen; "a machine with unbelievable reproduction quality: It had low distortion and a frequency response almost matching human hearing. He told Mullin he could find some Magnetophons at Radio Frankfurt's satellite studio in Bad Nauheim" (ibid. 2). When they got to the studios, "Mullin and his assistant were astonished by the fidelity of the studio Magnetophons. A look at the schematic drawings showed Mullin why the machines performed so well: AC bias in the record circuit" (ibid.).

[18] <http://www.ce.org/publications/books_references/digital_america/history/audio_recording.asp> :2.

[19] This excerpt is taken from Denver Smith's interview with Les Paul at the Iridium Jazz Club in New York on July 19, 1999 <http://www.jinxmagazine.com/les_paul.html>.

[20] ibid. 1-2.

Like Major John Mullin, Colonel Richard Ranger was an electrical engineer who was posted in the Signal Corps to investigate German electronics advances.[21] In 1924, Ranger had "invented the precursor to the modern day fax machine".[22] He later went on to build a prototype based closely on the Magnetophone for his own Rangertone Electronics Company in 1948, but was soon squeezed out of the market by the rapidly ascending Ampex Corporation.[23]

Les Paul was astonished by Ranger's German Magnetophone. "I was stunned", he recalls.[24] In fact, Les Paul was so impressed with the machine that he went straight to California to tell his friend Bing Crosby: "I got the answer to your problem".[25] Bing Crosby's "problem" had to do with the inflexibilities of live radio:

> Though live radio was king, he [Crosby] hated live performances and loved the relaxed atmosphere of studio recording. The singer had been broadcasting his weekly NBC half-hour show live from Los Angeles during the 1944-45 season, doing each program twice, once for the East Coast feed and again three hours later for the West Coast. Live Radio was an ordeal he wanted to end. When NBC refused to allow Crosby to record his show on 16-inch "electrical transcription" discs (ETs) - the only option besides the equally dismal sound optical-film audio recording - he quit radio for a year.[26]

Les Paul's visit could not have come at a better time. "You could be on the golf course with this thing", Les Paul told Crosby, "I seen it, and it works!"[27] Crosby quickly latched onto the idea and approached ABC.

> Crosby was in a position at that time to both have the money to contribute to the development of this technology and also the bargaining power to say to the network that he

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[21] Dzuba 2002 <http://www.iridiumjazzclub.com/les.shtml :3>; Morton 1998 <www.keyboardmuseum.org/pre60/1930/rangertone2.html :1-2>; Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man/> : 1-2.

[22] <http://www.ce.org/publications/books_references/digital_america/history/audio_recording.asp> :2; Morton 1998 <www.keyboardmuseum.org/pre60/1930/rangertone2.html> :1.

[23] Dzuba 2002 <http://www.iridiumjazzclub.com/les.shtml> :3; Morton 1998 <www.keyboardmuseum.org/pre60/1930/rangertone2.html> :2.

[24] Les Paul qtd. from *The Wire: The Impact of Electricity on Music.* Episode Two-*The Changes of the Sound: Multitrack and the Tape Machine*, CBC Radio: Feb. 14, 2005.

[25] ibid.

[26] Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man/> : 2.

[27] Les Paul qtd. from *The Wire: The Impact of Electricity on Music.* Episode Two-*The Changes of the Sound: Multitrack and the Tape Machine*, CBC Radio: Feb. 14, 2005.

really didn't like going in for these live broadcasts all the time, and he was going to in the future tape his program.[28]

Thus, when Crosby moved to ABC in 1947, he brought John Mullin and his German Magnetophone and tapes with him.[29] Crosby's contract with ABC "specified that the network provide him with the finest-available recording facilities to time-delay his show".[30] The contract also stipulated that Bing Crosby Enterprises would finance the development of the first American tape recorder by the Ampex Corporation, and become the exclusive sales agent for the new machines.[31]

Crosby immediately hired John Mullin as chief recording engineer for his new show, Philco Radio Time.[32] Recordings of "both the dress rehearsal and the 'live-to-tape' show" were made onto Mullin's tape, with a final mix of the best of both performances cut onto 16" electrical transcription discs.[33] This process gave rise to two important developments in broadcast production.[34] Most significant was the introduction of editing: "Mullin's skillful edits created the kind of program pacing that most live radio shows could not achieve".[35] With both network radio and recording artists soon adopting magnetic tape into their production process, Crosby and Mullin established an industry precedent "that remains the norm to this day".[36]

The second development took place after "hillbilly comic" Bob Burns tore up the studio audience with some off-colour "folksy farm stories" that were not on the script.[37] The stories "got enormous laughs,

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[28] *The Wire: The Impact of Electricity on Music.* Episode Two-*The Changes of the Sound: Multitrack and the Tape Machine*, CBC Radio: Feb. 14, 2005.

[29] Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man/> :3; Schoenherr 1996 <http://history.acusd.edu/gen/recording/derbingle.html> :1.

[30] Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man/> :3.

[31] ibid. Hammer states that "Crosby invested $50 000 in Ampex, and the deal was made" (ibid.).

[32] ibid.

[33] ibid.

[34] Schoenherr 1996 <http://history.acusd.edu/gen/recording/derbingle.html> :1-2.

[35] Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man/> :3.

[36] ibid.

[37] Mullin qtd. in "Creating the Craft of Tape Recording", *High Fidelity*, Apr. 1976: 66-67; Schoenherr 1996 <http://history.acusd.edu/gen/recording/derbingle.html> :2.

which just went on and on", Mullin explains.[38] "We couldn't use the jokes, but [producer] Bill [Morrow] asked us to save the laughs. A couple of weeks later he had a show that wasn't very funny, and he insisted that we put in the salvaged laughs. Thus the laugh track was born".[39]

In 1948, Bing Crosby recorded his first shows on the Ampex Model 200 full-track.[40] Around this same time, Crosby showed up at Les Paul's house with a surprise. As Les Paul recalls:

> When Bing made the agreement with Ampex to build this machine, one of the first machines that he got, he brought over to my house. And he says, "Hi Les", and then he says, "I got something out in the car for you". So Bing and I walked out to the car and I figured he had a trunk full of cheese [*laughs*], then I thought no, maybe it's a Philco radio. And it wasn't either, it was a tape machine. And he had grabbed one handle, I took the other handle, and we carried it into the back and we and put it on a stool. Then so what happened is I says, "Mary [Ford; Les Paul's wife at the time], pack everything up, were leaving. Using *one* tape machine, I can make your voice into a glee club and my guitar into an orchestra. I can play all the background parts and all the solos and everything and you can sing". And I says, "We got our *own* thing".[41]

However, the Model 200 full-track was not designed to allow for overdubbing. With some thought, Les Paul realized that the sound-on-sound technique could be applied to the Model 200 full-track and, in contrast to the disc to disc method, this could be done with a single machine (Hurtig 1988: 8-9). Les Paul's idea hinged on an important modification: the addition of a fourth tape head. Positioned previous to the erase head, Les Paul called this fourth head a *preview* head (ibid. 9).[42] The preview head would be used to pick up the previous recording and send it to a mixer before it hit the erase head (ibid.). At the mixer, a new musical part could then be added to the previous one(s), and this

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[38] qtd. in "Creating the Craft of Tape Recording", *High Fidelity*, Apr. 1976: 66-67.

[39] Mullin qtd. in ibid.

[40] Schoenherr 1999, "Recording Technology History", <http://history.acusd.edu/gen/recording/notes.html#tape> :6. Hammer (1999) states that: "Mullin and the Crosby show were presented with serial numbers 1 and 2 of the Ampex [Model 200] machine in gratitude for their research and development support" <http://mixonline.com/mag/audio_john_mullin_man/> :3.

[41] Les Paul qtd. from *The Wire: The Impact of Electricity on Music.* Episode Two-*The Changes of the Sound: Multitrack and the Tape Machine*, CBC Radio: Feb. 14, 2005.

[42] The Model 200 uses a 3-head headstack. The order of heads in a 3-head headstack, "in terms of which head the tape sees first, is always as follows": erase, record, playback (Hurtig 1988: 7).

composite result could be sent ahead to the record head and transferred back onto the tape (ibid.). Les Paul explains the modification process as follows:

> What I did is I called Ampex, and tell them I blew the head, send me another head. So they sent me a fourth head, which I just took and I had them ship it to Chicago. And while I was in Chicago, I called a friend of mine that had a drill, and he come over and we drilled the hole through the top plate, and then I thought, oh my god, we didn't look underneath. We looked underneath and we missed everything [*laughs*]. It was a perfect place for that head to go. And I put it on there and I said to Mary, "Just say: One-two-three", and she says, "One-two-three", and I says, "Hello, howdy, howdy". And it came back: "One-one-two-two-three-three", "Hello-hello, howdy-howdy, howdy-howdy", and I says, "Oh my god, we got it". And I threw my crutch across the room and Mary and I danced. We had something that no one in this world had, okay. It was sound-on-sound.[43]

Les Paul not only discovered tape to tape sound-on-sound with this experiment, he also encountered tape delay, which he later developed into "the first tape based delay unit (echoplex) for use on stage".[44] In 1956, he performed at the White house, giving demonstrations of his equipment and experiments to President Eisenhower and Vice President Nixon.[45] Les Paul's tape to tape sound-on-sound experiments were having considerable commercial success, perhaps the best example being "How High The Moon", released on Capitol Records in 1951 (Hurtig 1988: 8). Composed of 27 musical parts, this recording featured only he and Mary Ford, but managed to become a number one hit, staying there for nine weeks.[46]

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[43] Les Paul qtd. from *The Wire: The Impact of Electricity on Music.* Episode Two-*The Changes of the Sound: Multitrack and the Tape Machine*, CBC Radio: Feb. 14, 2005.

[44] "Les Paul", *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html> :2.

[45] ibid.

[46] "Les Paul", *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html> :2. *How High The Moon* also included another innovation in recording, that of microphone placement. Until that time, "there was an unwritten rule that vocalists should be placed no closer that 2 feet from the microphone" (ibid.). However, using close micing vocals, Les Paul was able to "capture every nuance of his wife Mary Ford's voice" with the microphone only a couple of inches away (ibid.). "It sounded so good that everybody immediately began recording vocals this way" (ibid.). As will be discussed in relation to Sylvan Morris, unorthodox micing practices were central to the "round" bass sound Morris was able to achieve as engineer at Coxsone Dodd's Studio One.

Yet there were still some major drawbacks to full-track sound-on-sound, despite the fact that the process was much faster. Like the disc to disc method, with each transfer, "noise was successively added" (Hurtig 1988: 9). Les Paul got around this problem in part by designing specialized equalizers and amplifiers for increased headroom.[47] He also modified "the curve of the tape as it passed over the recording head for better alignment".[48] Another difficulty shared with the disc to disc method was that the relative levels between the various musical layers could not be adjusted once an overdub was recorded (Hurtig 1988: 8-9). Unlike disc to disc overdubbing, where one could revert to the previous recording if a mistake was made during the transfer, with the single tape machine method, "if a mistake occurred the entire recording would have to be scrapped" (ibid.). For all of these reasons, Les Paul started thinking about the new military multi-track data recorders that Ampex began producing around this time (ibid.).

Previous to launching the Model 200, the Ampex Corporation was known as "a tiny, six employee company that built small motors and generators for U.S. Navy contracts".[49] In 1949, the year after Ampex released the first American made tape recorders (based on Mullin's German Magnetophone) the company created the Model 200 *dual-track* recorder for military applications (Hurtig 1988: 8). Employed by the U.S. armed forces to record test data, "These dual-track machines were modified so that the two record heads could record simultaneously. By doing this, one machine, for example, could record the data for *both* a rocket's fuel consumption and air speed" (ibid.).

Brent Hurtig goes on to state that:

> The military application of the dual-track tape recorder was so successful that a year later, in 1950, Ampex introduced the Model 500, with four tracks on 1/4" tape--the world's first true multi-track. Just two years later they developed a 7-track version of the 500, also for data recording.
> (ibid.)

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[47] "Les Paul", *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html> :2.

[48] ibid.

[49] Hammar 1999 <http://mixonline.com/mag/audio_john_mullin_man/> :3.

As Hurtig explains, although the 500s were not designed for overdubbing, they did introduce the first single unit, multi-gap head (ibid.). The multi-gap head is a significant advance for it is "the technology which would allow multi-track overdubbing" to take place (ibid.). But before this could happen, "Les Paul realized that the machine would have to be able *to record and play back tracks at the same time*", otherwise every track added after the first would be out of synch with the rest (ibid. 9). In response to Les Paul's request for a dual-functioning record/playback head, Ampex developed what they called "Sel-Sync" (ibid.).

The incorporation of Les Paul's requests resulted in the first multi-track machine designed for music, unofficially known as the Ampex 300-8, "conceived by and delivered to Les Paul" in 1952 (ibid. 8-10). This eight-track machine is still used by Les Paul to this day (ibid. 10). However, "as revolutionary as it was, multi-track recording didn't take the world by storm" (ibid.). Another source states that, even by the late 1950s "most studio engineers didn't know what to do with the extra tracks and most did not use them".[50] It was not until 1967 "that a machine with more that 4-tracks was available on the market, when Ampex delivered the MM-1000, with 16 tracks on 2" tape" (Hurtig 1988: 10).

In a speech Les Paul gave at the AES (Audio Engineering Society) convention in 1952, he explained that multi-track recording was the future, "and begged for the invention of higher quality speakers, amplifiers, etc." to better accommodate it.[51] During this same speech he pitched the idea of a digital recording system that would replace the old analogue systems and enable multi-tracking without the inherent problem of tape hiss and noise".[52]

There are a number of reasons for considering Les Paul and the context surrounding the development of multi-track recording and its predecessors. One aspect that is brought to the fore is the centrality, *once again*, of the dub plate; here, in the first proto-multi-track

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[50] "Les Paul", *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html> :2.

[51] "Les Paul", *History of Record Production*, <http://music.columbia.edu/cmc/courses/g6630/recordproduction1.html> :2.

[52] ibid.

experiments. The spread and translation of military technology is also a dominant theme, and suggests fascinating parallels to sound system amplification and the arrival of the Williamson circuit, examined in Chapter Two. Particularly interesting is the notion of an interaction between model and environment, and how these technologies develop out of industrial centres like Germany and America and translate out to more peripheral regions such as Jamaica.

With sound-on-sound, Les Paul created a multiplicity of instrumentalists and singers through a multi-layering process. His method, whether using dub plates or multi-track recording, is additive. Certainly, this segmented approach to recording is a fundamental prerequisite to the dub-version in Jamaica. However, with the dub-version, multi-track technology suffers a violent reversal, perhaps comparable to the use of vacuum tubes in pre-transistor computing applications.[53] We move from Les Paul's layering, creating the impression of an entire group of musicians through a process of repetition, to the blatant tearing apart of what had been built up; shattered by the very means of composition. The dub-version emerges from what has been *taken away.*

Before continuing with the examination of these developments as they translate out to Jamaica, a final note on medium reversal seems to warrant mention. This dynamic is perhaps described best in the work of Marshall McLuhan, who considers a variety of such reversals in *Understanding Media* (1964). For example, when examining the uses of the typewriter as an "oral and mimetic instrument" by Cummings, Pound and Eliot, McLuhan states that: "Such a reversal of form happens in all extremes of advanced technology, as with the wheel today" (ibid. 262).

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[53] Vacuum tubes were originally developed to detect and amplify weak radio and audio signals. However, in pre-transistor computing applications such as the ENIAC (Electronic Numeric Integrator And Calculator; constructed to calculate projectile trajectories), the vacuum tube is essentially used as an on-off switch. Slammed on and off repeatedly, the vacuum tube is submitted to relentless and totalizing signal bifurcation in this device. (My thanks to Dr. Ted Szymanski for this description.) In other words, a technology designed to register and amplify subtle variations is driven into a bi-polar state, in which only the two extremes of its signal range become of any concern. This notion of abruptly slamming signals on and off is a useful analogy for understanding track treatment in the dub-version; tracks are suddenly dropped in and out with a total disregard for the mixing board's design for subtlety.

This notion that a medium, when pushed to the extreme, tends to reverse itself is in fact the central theme of McLuhan's third chapter: "Reversal of the Overheated Medium" (33-40). One of McLuhan's favourite paradigms is the shift in transportation and communication from "the mechanical to the instant electrical form", which "reverses explosion into implosion" (ibid. 35).

"The principle that during the stages of their development all things appear under forms opposite to those that they finally present is an ancient doctrine", McLuhan points out (ibid.). However, McLuhan makes an interesting modification to this ancient doctrine. He introduces a "boundary break" into this equation (38). McLuhan's concern, as he himself explains, is "with showing that in any medium or structure there is what Kenneth Boulding calls a 'break boundary at which the system suddenly changes into another or passes some point of no return in its dynamic process'" (ibid.).

Perhaps the most important observation McLuhan makes in regard to this "break boundary" is that: "One of the most common causes of breaks in any system is the cross-fertilization with another system, such as happened to print with the steam press, or with radio and movies (that yielded the talkies)" (ibid. 39). Indeed, it is this process of cross-fertilization which leads to the development of multi-track recording. In the history outlined above, one witnesses a cross-fertilization between the dub plate, the German Magnetophone and U.S. military test data recorders. The development of multi-track recording actually constitutes the first reversal, for what occurs here is the splitting of what previously could only be understood as integral. The dub-version, unleashed by a cross-fertilization process between the sound system, the dub plate and the multi-track recording studio, represents a second, more unsettling, reversal. Where once, despite a fragmented process of production, there was at least the semblance of unity, the dub-version now flaunted this semblance as a sham[54].

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[54] Particularly with the unpredictability of tracks dropping in and out, erupting flares of echo, "bottomless" bass and drum, and a curious tendency toward minimalism using a technology designed for multiplicity.

SECTION III
MULTI-TRACK RECORDING HITS JAMAICA

Not long after Ken Khouri installed the first half-track stereo facility in 1963, multi-track recording was introduced at Federal's rival, WIRL (West Indies Records Limited), soon to be renamed Dynamic Sound (Chang and Chen 1998: 85; Katz 2000: 58, 74-75). As mentioned in the discussion of Edward Seaga in Chapter Two, the upgrades performed at WIRL came about through a transfer of ownership (ibid.). Due to mounting political obligations, particularly after being appointed as Minister of Development and Welfare in 1962, Seaga could no longer oversee the running of the WIRL operations (Katz 2003: 37). The WIRL operations, which began as a record label and pressing plant in 1958, had recently been expanded to include a recording studio (ibid. 19, 37). Seaga thus handed the running of the enlarged WIRL business temporarily over to his father and cousin until a buyer could be found (ibid. 19). Soon after, George Benson and partner Clifford Rae bought Seaga out. By the mid 1960s, Benson and Rae were joined by Byron Lee of The Dragonaires and Ronnie Nasrallah, the group's manager (Katz 2000: 58). "When Lee and Nasrallah joined the team, they upgraded the studio [from two to] four tracks, and established a lucrative distribution deal with Ahmet Ertegun's Atlantic Records" (ibid.).

In 1968, a "mysterious fire" (some have said the fire was set deliberately) destroyed the WIRL pressing plant (ibid. 74). Around this same time, Byron Lee met "Jeep" Harned (Chang and Chen 1998: 85). Byron Lee contracted Harned to perform yet another round of upgrades on the studio, and renamed it Dynamic Sound. "Up till then Harned's chief claim to fame was the installation of a Muzak system at Fort Lauderdale Airport", state Chang and Chen, "but he later went on to develop the major recording equipment label MCI. MCI's first ever complete operation of mixer and recorder was installed at Dynamic Sounds. Jamaica now had multi-track recording and overdubbing capabilities" (ibid.). As Katz explains, the name-change to Dynamic Sound partly served to sever links with the previously affiliated WIRL Barbados, but it was also meant to emphasize the new eight-track facilities now offered (2000: 74).

Multi-track began spreading to other studios on the island, at first in the form of two-track recording. Chang and Chen write that, following Dynamic Sound's upgrades:

> Others entered the multi-track market. Duke Reid built the first independent 2-track studio on the fourth floor of his liquor store. Randy's at Parade also began recording on the two tracks, as did Clement Dodd at Studio One. Dodd also first recorded "Jamaican Stereo", with the band all on one track and the vocals on the other. The age of "riddims" and "dub" was at hand.
>
> (1998: 85)

Many of the new wave of studios, including Randy's at 17 North Parade, were installed by WIRL's technical engineer, Bill Garnett, who had previously "worked at Federal during Graeme Goodall's tenure" (Katz 2003: 127). By the late 1960s, Randy's four-track studio was emerging as the most significant facility next to Coxsone Dodd's Studio One (ibid. 126). Eventually overtaking Studio One, Randy's became "the studio of choice for reggae in the early 1970s" (ibid.). Randy's owner, Vincent Chin, had shifted his attention from producing music to constructing a studio after his biggest hit-maker Lord Creator had been jailed for marijuana possession sometime around 1967 (ibid. 126-127).

Bill Garnett managed to complete the studio by 1968, speeding up the job so that the studio could house the Wailers, "who had been recording at WIRL for Johnny Nash's label, JAD" (ibid. 127). As Vincent Chin's eldest son Clive explains, "Bill Garnet brought in Johnny Nash's people, who brought in Bob [Marley] and Peter [Tosh] and Bunny [Wailer]. They had booked the studio solid, but we would use time in between for our own purposes, and that's how Peter [Tosh] started collaborating and doing some work like "You Can't Fool Me Again", projects funded by my father" (Clive Chin qtd. in ibid.).

Bill Garnett then moved to New York to work at Harry Belafonte's Impact studio, but continued to set up studios during his frequent visits to Jamaica (ibid., 132, 172). His next installation would be for Joel Gibson, also known as Joe Gibbs, in 1968 (ibid. 132). Joe Gibbs describes the original studio in Duhaney Park as "a simple but effective

two track studio modeled on the studio at Federal Records".[55] Garnett subsequently went on to install Harry J's sixteen-track studio on Roosevelt Avenue, which was operational by 1972 (Katz 2003: 172). Katz states that, as with Joe Gibbs' installation, Harry J's studio was set up during one of Bill Garnett's weekend visits to Jamaica (ibid.).

Another studio Bill Garnett was involved with that came on the scene at this time was Joseph Hoo-Kim's Channel One, located "in the heart of the Maxfield Park ghetto" (ibid. 197, 198). Joseph Hoo-Kim was first inspired to build Channel One after childhood friend John Holt took him to visit Dynamic Sound: "I was fascinated with the sound in the studio", Hoo-Kim recalls, "the sound just hold me right there, and I said, 'This is what I want to be in'" (qtd. in ibid.). Like Vincent Chin, Joseph Hoo-Kim was involved in the jukebox business since the early 1960s. In fact, the company that Joseph Hoo-Kim bought his first jukeboxes from was the same jukebox operator which Vincent Chin worked for before opening Randy's record store (ibid. 126, 197).[56] However, along with the jukebox machines, the Hoo-Kim family also operated a number of "one arm bandit" gambling machines, no doubt a greater source of revenue. Harry Hawke states that in 1970, the Jamaican government passed legislation prohibiting the machines, and in response the Hoo-Kims decided to build a studio and move into recording.[57]

In terms of Channel One's studio set up, Harry Hawke states that Joseph Hoo-Kim "hired Bill Garnett, a Jamaican living in New York with a serious reputation as a technological wizard, to install the [API mixing] board".[58] Joseph Hoo-Kim adds that "Bill Garnet is the one that select the equipment. I paid 38,000 dollars for a API console, one of the most expensive on the market, maybe 60,000 US dollars for the console and

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[55] Gibson qtd. in Harry Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002.

[56] Servicing the machines for the Issa family, Vincent Chin would travel around the island to collect the money from the jukeboxes "every fortnight and apply fresh music for the boxes, and he started to collect all these old records. Rather than disposing of them", son Clive Chin explains, "he would stock them up in his garage, and that's how he started Randy's record store down on East Street" (Clive Chin qtd. in Katz 2003: 126).

[57] Sleeve notes, *Well Charged Channel One*, Pressure Sounds, 1997.

[58] Sleeve notes, *Channel One - Maxfield Avenue Breakdown: Dubs and Instrumentals 1974-79*, Pressure Sounds, 2001.

the two tape machines" (qtd. in Katz 2003: 198). Bunny Lee ran the first recording session in 1972, "Can I Change My Mind" with Delroy Wilson and backed by the Soul Syndicate band (ibid.). "When we start up, Bunny Lee said, 'The studio doesn't sound good', and I have the most expensive console. I did an LP with Alton Ellis that I couldn't release" (Joseph Hoo-Kim qtd. in ibid.). One of the tracks from these first Alton Ellis sessions, "Tell Me", did manage to become a "huge dub plate" hit for the U.K. based Lloyd Coxsone Outernational sound system.[59] However it was clear that, despite having one of the most expensive mixing boards on the market, the studio "sound" was posing a serious problem. "The bass was tied to the drum", notes Joseph Hoo Kim, "it wasn't record[ed] properly. Then we make session[s] and they were all flops, and I decided to lay back and see what we are doing wrong. But the main thing was about the sound" (Hoo-Kim qtd. in Katz 2003: 198).

One way that Joseph and brother Ernest learned more about the art of studio recording and mixing was by offering free sessions to producers who wanted to try out the new facility. "We gave everybody a free try," says Joseph, "because I didn't understand anything about running a session and I want to get experience. So any producer that was in the business, it was a day we usually give them, just to let them experience it and maybe get their business" (qtd. in Katz 2003: 197).

One of the producers that received a telephone call from Joseph Hoo-Kim was Phil Pratt (b. George Phillips): "Joe Hoo-Kim call me one day and said, 'The studio just done. Come and test out the studio - you are free'. So I brought my musicians with me and Gregory Issacs. He [Issacs] arranged the horn section and the bass line and wrote the song as well" (Phil Pratt qtd. in ibid., 141). The resulting recording, "All I Have Is Love", became Gregory Issacs' "first number one" hit, recalls Pratt (qtd. in ibid. 197; Hurford 1987: 19). Despite this early success for Gregory Issacs, the Channel One studio would not become a dominant force on the Kingston scene until the middle of the 1970s, particularly following the phenomenal success of the Might Diamonds' classic "Right Time", released in 1975.[60]

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[59] Hawke, sleeve notes, *Well Charged Channel One*, Pressure Sounds, 1997.

[60] Hawke, sleeve notes, *Well Charged Channel One*, Pressure Sounds, 1997.

Channel One's original engineer was Sid Bucknor, cousin of Coxsone Dodd, who remained with the studio for around one year (Joseph Hoo-Kim in Katz 2003: 198; Katz 2000: 32). Sid Bucknor had previously engineered at Studio One after having helped install the studio's original equipment under the supervision of Headley Jones (ibid.). After Sid Bucknor left Channel One, Joseph and brother Ernest moved in behind the mixing board to try to work through the bugs themselves (Barrow and Dalton 2001: 242). Although the equipment at Channel One included "an MCI high-pass filter which let the bass frequencies through, this equipment was not actually being utilized by Bucknor" (ibid.). It was deejay I-Roy (b. Roy Samuel Reid) who would help put the Hoo-Kims on the right track in regards to this piece of equipment: "I-Roy -- who was fully tuned in to the sound system world, having deejayed King Tubby's Hi Fi when U-Roy was not available -- encouraged the Hookims to visit [King] Tubby's to observe for themselves the effect of the same piece of studio outboard in operation there" (ibid.). I-Roy subsequently "became unofficial house producer at Channel One" (ibid.): "He usually play sound [system]" Joseph Hoo-Kim explains, "and we want somebody that have a sound knowledge" (Hoo-Kim qtd. in Katz 2003: 217-218).

The Hoo-Kim brothers learnt much about customizing their API mixing board through "sheer perseverance"[61], and this perseverance certainly paid off. Along with I-Roy and the Channel One band, the Hoo-Kims helped create the style that would rule 1975 and early 1976: *Rockers* (Katz 2003: 249). "Rockers", writes David Katz, "revolved around the improved Channel One drum sound, which obtained better depth of clarity once the studio was upgraded to sixteen tracks in 1975; [drummer] Sly [Dunbar] made the most of its capabilities through a number of new beats" (ibid. 217). Barrow and Dalton add that "When I-Roy and Joe Joe [Joseph] suggested to drummer Sly Dunbar that he make a 'clap' sound on his snare, the result, combined with the improved bass response, was enough to impart just the right amount of freshness to the vintage rhythms updated by I-Roy and the Revolutionaries" (2001: 242). Joseph Hoo-Kim stresses that "Sly would play for a whole day when we were just trying [things] out. . . You won't get another

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[61] Hawke, sleeve notes, *Well Charged Channel One*, Pressure Sounds, 1997.

drummer who would want to do that" (qtd. in Katz 2003: 217). With Sly Dunbar and Ernest Hoo-Kim's commitment to getting the drum sound just right, Channel One's "in-house specialty became recording drums live with the track".[62]

Another innovation that was explored at Channel One around this time was the employment of "dubbed-up rhythm tracks on their vocal records", such as the heavy reverb used on the backing of the Mediations' "Woman is Like a Shadow" (recorded in 1974), "or the distinctive klaxon effect on John Holt's 'Up Park Camp'" (Barrow and Dalton 2001: 242). It is brother Ernest who is usually credited with the "slightly more drastic remixes of these and many other Channel One rhythms" which appeared on the popular series of dub LPs issued on the Well Charged label (ibid.). However, I-Roy would later confirm that he was also heavily involved in these sessions (ibid.).

In 1977, the violent death of younger brother Paul caused the Hoo-Kim's to temporarily withdraw from the operation (Katz 2003: 249). "Paulie got killed on the Greenwich Town beach playing dominoes at three in the morning around an oil drum table. A man emptied his gun in Paulie and he died on the spot".[63] "It was a robbery - they rob him for his gun", Joseph adds elsewhere (qtd. in Katz 2003: 249). Not surprisingly, Joseph explains that after Paul's death, "Much of the enjoyment [of the music business] went out of it for me".[64] "That was the main thing why I came abroad, went to Brooklyn and opened a record store: J and L, at Utica Avenue" (Joseph Hoo-Kim qtd. in Katz 2003: 249).

The next studio to gain dominance with the rockers sound was Joe Gibbs, who had recently opened a new sixteen-track studio with Randy's former engineer, Errol Thompson (ibid., 219). Joe Gibbs was born on the North Coast in 1945, growing up in the resort town of Montego Bay.[65] Gibbs found that coming from Montego Bay made it difficult to break into

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[62] Hawke, sleeve notes, *Well Charged Channel One,* Pressure Sounds, 1997.

[63] Joseph Hoo-Kim qtd. in Hawke, sleeve notes, *When The Dances Were Changing: Hitbound Selection*, Pressure Sounds, 1998.

[64] Joseph Hoo-Kim qtd. in Hawke, sleeve notes, *Well Charged Channel One*, Pressure Sounds, 1997.

[65] Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002.

"Kingston's relatively closed musical circles", and more than once referred to the "'clannish vibe' around the various labels, studios and producers".[66] Harry Hawke adds that, in order to build his reputation, Gibbs would always pay the people he worked with in cash.[67]

In his teens, Gibbs worked on the U.S. naval base at Guantanamo Bay in Cuba (Katz 2003: 71). He had no formal musical training, and his early passion was for electronics, "which he diligently studied through a Correspondence Course with the National Electronic School in the USA".[68] This skill had him in constant demand and he traveled all over island working as a technician. In terms of the spread of perhaps the most modern of media, electricity, Gibbs was hired by a Canadian company which was supervising the island-wide conversion to a single electrical frequency. "Previously, for example", Gibbs explains, "Kingston was on sixty and Mo[ntego] Bay was on forty so when the island moved to one frequency I was busy as a technician running around sorting out the conversion work".[69]

In 1962, Gibbs moved to Kingston, opening his first electronics shop in 1966. He began by selling and repairing radio and television sets, but soon started to also sell records as a way of drawing people into the shop.[70] Leslie Kong's Beverley's Ice Cream Parlour and Record Shop was located across the street, and Gibbs keenly observed "just how readily people were drawn into the shop to buy music. With his background in electronics his move into music production was a logical step as he had always been fascinated by different frequencies that he heard in the music and their is no denying that his 'music does have a great deal of sonic depth'[71]".[72]

However, it was the partnership with highly skilled Errol Thompson that really made their explorations in "sonic depth" possible. Errol

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[66] ibid.

[67] ibid.

[68] Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978"*, Pressure Sounds, 2002.

[69] Gibbs qtd. in ibid.

[70] Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978"*, Pressure Sounds, 2002.

[71] Joe Gibbs qtd. in ibid.

[72] ibid.

Thompson first began engineering at Studio One in early 1969 under Sylvan Morris (Barrow and Dalton 2001: 235). One of the first sessions Thompson mixed at Studio One was the voicing of Max Romeo's risqué "Wet Dream", produced by Bunny Lee.[73] "Unable to get on with Morris, he [Thompson] moved to Randy's, where he completely rebuilt the studio" (Barrow and Dalton 2001: 235). As chief engineer at Randy's (Katz 2003: 187), Errol Thompson "recorded some of the most successful Jamaican music of the next six years, including much of the work of such producers as Lee Perry, Bunny Lee and Winston 'Niney' Holness" (Barrow and Dalton 2001: 235).

In fact, as photographer and reggae journalist Dave Hendley explains (1987: 93-94), Errol Thompson's work at Randy's constitutes some of the earliest dub explorations, running parallel to King Tubby's "ground-breaking experiments" (Barrow and Dalton 2001: 235). In Dave Hendley and Ray Hurford's pioneering article, "King Tubby - In Fine Style", Hendley writes:

> It would be unfair to credit Tubby with the invention of recorded dub as Errol Thompson was at the same time pioneering bass and drum at Randy's Studio 17 with a great deal of success. But Tubb's was managing to refine the sound using faders, delay echo and a phase shifter to bend the music still further.
>
> (1987: 93)

Hendley goes on to state that the difference in mixing styles had more to do with the limitations of the equipment than any lack of imagination on the part of Thompson (ibid. 94). Thompson, Hendley notes, was restricted to push-button type switches when mixing on Randy's board (ibid.), and thus was unable to slide "tracks smoothly in and out of the mix (as King Tubby was able to do to such great effect)" (Barrow and Dalton 2001: 236). "Nonetheless, on tracks like the version side to Lloyd Parkes' 'Ordinary Man' (Impact), mixed in 1973, Thompson was able to introduce novel sounds -- backwards-running and slowed-down vocal tracks -- to great effect. This was a precursor of the work he mixed for Joe Gibbs at his new studio on Retirement Road. . . " (ibid.).

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[73] Barrow and Dalton 2001: 235; Hawke, sleeves notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002.

An important element in the success of Errol Thompson's dub experiments at Randy's was the partnership he established there with his old school friend, Clive Chin (son of Randy's proprietor, Vincent Chin).[74] "Them time there, Tubby try and experiment fi dub, but me and Errol start dub music", states Clive Chin (qtd. in Katz 2003: 185). Clive Chin quickly qualifies this claim:

> When I say start it, I'm not saying we going to take credit for any other man that put out a dub album, but we really experiment, because we had the time and facility to do it. Another man like Phil Pratt or [Winston] Niney ["The Observer" Holness], time was so important that you have to run in and run out - that's how the studio used to run.
>
> (Chin qtd. in ibid.)

Clive Chin began producing at the end of the 1960s after initially being brought into the family business as an auditioner (ibid. 185-186). Much to Clive's frustration, the credit for many of his early productions was taken by his uncle, Keith Chin: "A whole heap of tune, my uncle Victor press them up and put, 'produced by Keith Chin', and it's really me do it" (ibid. 186). Perhaps one of the most noteworthy of these early efforts is Augustus Pablo's instrumental "Java", mixed in 1971 (ibid.).

Like many instrumentals that Clive and Errol Thompson recorded at this time, "Java" arose out of Clive's dissatisfaction with the original voicing of the tune (ibid. 185-186). (Here, one can begin to appreciate some of the benefits of multi-track recording and segmentation, for desired elements can be isolated, amplified, and re-interpreted through further layering, creating an almost endless series of descendent versions.) "When the vocalist could not supply what Clive had in mind he got Pablo to reach for his melodica, providing the talented musician with his first big hit as a solo artist" (ibid. 186). However, when the tune was released, it was credited to a more well known group, the Chosen Few, and listed Keith Chin as producer. Despite the fact that the group only had a minimal role on the recording, "at the time Chosen Few had a name and nobody don't know Pablo" (Clive Chin qtd. in ibid.). Clive adds that because the melodica was new on the scene, he thought that the association with the Chosen Few would help make the sound more readily

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[74] Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002; Katz 2003: 185.

accepted (qtd. in ibid.). Whether or not this strategy had anything to do with its "tremendous success", the song was awarded "the accolade of Best Instrumental in 1972" (ibid.).

Another innovative release which followed was *Java Java Java Java*, "one of the first dub albums, issued in a limited pressing of one thousand copies in 1973" (Katz 2003: 187). As Katz notes, Errol Thompson brought the throbbing bass to the front of the mix throughout the entire album, "shuffling in reverb-treated keyboards, guitar, horns, and the odd snatch of vocals or melodica" (ibid.). "The album's concentration on drum and bass was a radical departure, and underlies not only the strength of the Randy's session musicians but, more importantly, the creative interaction between Clive Chin and Errol Thompson at the mixing desk" (ibid.).

Clive Chin describes the dynamic behind this production as follows:

> It was works done between me and Errol, and it was something new at the time. There wasn't an album out there that wasn't a mento, a calypso, or one of them uptown reggae albums by man like Byron Lee or Tomorrow's Children, so we wanted to do something different and say, "Boy, we a go give them a wicked dub album". We didn't commercialize it, we do it more like a dub plate special, so the market at that time wasn't great enough to keep the dub flow. People was just starting to listen to this new music, so we didn't consider it was going to be a big hit.
>
> (Clive Chin qtd. in ibid. 187-188)

Clive reflects fondly on their combined efforts and aspirations. "I had a good relationship with Errol, a very innovative relationship" (ibid. 187). The two regularly discussed new ways of furthering the music: "how we can do a different kind of fixture to it, spice it, rather than have the same old pattern of just Tommy [McCook] blowing a horn, Bobby [Aitken] Playing a guitar, Winston [Wright] playing an organ" (Clive Chin qtd. in ibid.). Clive's feelings about Errol Thompson's departure to Joe Gibbs are still palpable many years later. In an interview given in the late 1990s, Clive states:

> You see Errol is the history of certain music in the seventies. . . (he put) a microphone in the toilet and flush it just to get the sound effect. If I could turn back the hands of time Errol

would never leave Randy's. He was the innovative one. I felt like something left me when he left.[75]

Errol Thompson was first introduced to Joe Gibbs by Winston Holness, also known as Niney the Observer. According to Hawke, "Niney appreciated just how good an engineer he [Thompson] was" and mentioned him to Gibbs: "Gibbo you want engineer?"[76] Niney had become "an important part of the Gibbs operation" in the late 1960s after Lee Perry left to establish the Upset label in collaboration with Lynford Anderson and Barrington Lambert (Katz 2003: 100). Both Lynford Anderson (a.k.a. Andy Capp) and Lee "Scratch" Perry are important figures in the development of dub and versioning, and will be considered shortly. Niney also worked with Lee Perry on independent projects, and Perry "would be instrumental in helping Niney to establish his Observer label after he too broke away from Joe Gibbs" (Katz 2000: 104).

However, Gibbs was careful not to undermine the partnership with Errol Thompson, the importance of which was given firm acknowledgment in their new co-producing moniker: The Mighty Two (Barrow and Dalton 2001: 172). Following Channel One's lead, Gibbs and Thompson produced a series of vocal, deejay and dub hits based on updated Studio One and Treasure Isle rocksteady rhythms (Katz 2003: 249). Particularly instrumental in the success of the popular *African Dub* series of LPs was "the assured nature of their studio band -- essentially the Channel One Revolutionaries, usually substituting Lloyd Parkes for Robbie Shakespeare on bass" (Barrow and Dalton 2001: 242-243). Two other acts that really contributed to the studio's rising popularity were former child star Dennis Brown and an "exciting new vocal group" called Culture, led by the inspiring Joseph Hill (Katz 2003: 249, 251).

As touched on above, it was the *African Dub* series that featured The Mighty Two's most commercially successful dubs. As the series progressed from the mid to the late 1970s, mixes became marked by a noticeable increase in the "generous use of sound effects such as car

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[75] Clive Chin qtd. in Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002.

[76] Winston "Niney" Holness qtd. in ibid.

horns, barking dogs, ringing telephones and running water" (Barrow and Dalton 2001: 242). The eruption of car horns and ringing phones certainly has a certain lack of subtly, and the latter part of the series drew criticism from some who considered these practices to be a commercial dilution of otherwise solid material (ibid. 242-243). For example, in somewhat of a backhanded complement, Barrow and Dalton state that the music featured on the *African Dub* series "always remained much more than the gimmicks that were tagged on (and helped sell it to a wider audience). The second and third volume of Gibbs' *African Dub* series sold by the cartload, and remain amongst the best-remembered dub albums of the period" (ibid. 243).

In the sleeve notes to *Joe Gibbs & The Professionals - "No Bones For The Dogs"*, Harry Hawke attempts to defend The Mighty Two against criticism of commercial dilution by pointing out that it largely came from those who were envious of their success; something that was desperately sought after in the highly competitive Kingston music scene.[77] In this kind of "grudgeful criticism", the two were accused of being over-reliant "on previously popular formats and the particularly pointed 'commercial dread' epithet somehow seemed to become the accepted view of their productions but this is both untrue and unfair".[78] Indeed, due to the mass nature of vinyl record production, nobody could afford to devote themselves to productions that did not hold some prospect of commercial success. Although like most other Jamaican studios, Joe Gibbs put out its share of middle of the road and schmaltzy releases, the studio also recorded some of the heaviest material of the time.

Nor does The Mighty Two's use of sound effects seem to constitute a commercial dilution as some have suggested. Dubs such as "I Am Not Ashamed Version" and "Jubilation Dub"[79] which feature a variety of startling sound effects such as car horns and ringing

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[77] Sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002.

[78] ibid.

[79] Released in 1977 and 1978 respectively. "I Am Not Ashamed Version" appears on the excellent *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978* (Pressure Sounds, 2002) compilation, suggested to me by Jim Dooley, while "Jubilation Dub" can be found on Chapter 3 of the *African Dub* (Joe Gibbs, 1978) series.

telephones, come across as quite far off the commercial mainstream map. In the former, Culture's "I Am Not Ashamed" is stripped down to a fat, pumping bass line, complimented by an equally severe rim-clapping "militant style" drum workout[80]. At the end of the introductory passage, where one would expect to hear Culture's refrain, an emphatic and rapidly approaching car horn instead comes tearing past; a cue for the unseen hazards to come. Although also featuring running water and crying babies later in the song, it is the car horn that is most prominent in the mix. As one of the most immediately recognizable sounds, the warning function of the car horn is an extremely interesting choice of sound. As a summoning technology, the designed function of the car horn is one of high intensity communication, generally ranging somewhere between concern to crisis (i.e., impending collision). The horn communicates messages "in the imperative mood", to use an expression of Norbert Wiener (2001 [1954]: 49). To quote a summoning technology of this intensity in this context seems much more than an attempt to cater to a wider audience.

A similar argument can be made for the ringing telephones in "Jubilation Dub". This radical remix of Dennis Brown's "Repatriation"[81] begins with a moderately mutated version of the original's introduction. However, the initial flourish of echoing guitar and organ is quickly reigned-in to a heavyweight bass and drum combination, complimented by the occasional reverberating "chick-chank" of guitar. Sound effects are at first limited to squelching bleeps, a characteristic sound in many Mighty Two dubs, and "magic-wand" chime sounds, both of which are pulled into new forms through echo and reverb treatment.

About half way through the song, unintelligible fragments of Dennis Brown's vocals begin to break through momentarily, and a low-frequency shuddering starts to rupture, giving the impression of distant automatic gunfire. Bass and drum once again carry the song for a period as the mix appears to re-arrange itself for a final mounting crescendo. As pressure is built to the breaking point, ringing telephones become increasingly

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[80] Hawke, sleeve notes, *Joe Gibbs & The Professionals - "No Bones For The Dogs": Dubs From The Mighty Two 1974-1978*, Pressure Sounds, 2002.

[81] "Repatriation" can be found on Dennis Brown's *Visions*, Joe Gibbs, 1978.

audible. The final two rings, now quite forward in the mix, usher in Dennis Brown's climatic delivery:

> When the right time come
> It will be dread for some
> But no one can stop
> The righteous ones

This last line is then sealed off with an ascending squelching bleep, leaving the dub-mixing mayhem to continue for the short remainder of the song. This is the only lyrical passage that is allowed to enter the dub in its entirety.

The words themselves suggest the intensity of the moment of judgment. In the context of the original vocal version, this passage links the necessity of repatriation to the impending judgment. In "Jubilation Dub", the urgency of this isolated passage is given new weight through the prophetic ringing of telephones. The ringing telephone is amongst the most compelling of the summoning technologies, in a way, its request is even more specifically insistent than a car horn. For example, a ringing telephone in effect says, "Answer me, anyone who can hear me! Answer me, anyone who can hear me!", etc., whereas a car horn just says "!!!". Harolding the transmission of this vocal shard, the telephone signal amplifies the climate of crisis and the threat of breakdown, drawing the listener deeper into the realm of message transmission "in the imperative mood".

A rough chronology has been built around the arrival of multi-track recording. Having outlined the development of a number of the more important studios up to the late 1970s, there are still some conspicuous gaps in terms of the discussion of dub. Several figures that play a crucial role in the evolution of dub have only received brief mention thus far, most notably Lynford Anderson, Lee Perry, King Tubby and, to a lesser extent, Sylvan Morris. In the following chapter, a survey of the role of these four figures will attempt to address some of these more glaring gaps. Although the discussion of Joe Gibbs and Errol Thompson has brought us up to the late 1970s, some back-tracking will be necessary in the examination of Anderson, Perry, Tubby and Morris. In order to

introduce this group of actors and their relationship with various innovations and facilities, it will thus be helpful to first briefly trace some of the earliest dub and proto-dub releases.

It is hoped that the subsequent biographical investigation of these figures will provide a platform for a continuation of the encounter model of approach; in this case, following encounter at the personal level. A disproportionate amount of attention will be focused on King Tubby, and Lee Perry in particular, for it is these two mutually-influential figures that (given the available information) seem to offer the greatest insight into the role of unorthodox studio practices in the development of dub. These unorthodox practices include the now obvious example of multi-track reversal, as well as numerous other cases of sound treatment device modification (i.e., custom-built reverb units and high pass filters) and innovation (i.e., King Tubby's "thunderclap" and Lee Perry's rudimentary sampling and track "bouncing" methods). The discussion of Sylvan Morris provides a similar glimpse into such approaches with the case of custom-built speaker boxes, re-built ribbon microphones, experimental equalization and posterior-position bass-micing. The relation between design and use (as discussed in connection with the liminal regions of machine art [p. 72-89]) is an interesting theme running through all these practices.

CHAPTER FOUR
DUB

SECTION I
EARLY VERSIONS OF DUB

> "When them cut [a dub plate], it's difficult to put in the voice, and Smithy [Treasure Isle engineer Byron Smith] a go stop it and Ruddy [Redwood] say, 'No, make it run'. When it done, him say it art".
>
> (Bunny Lee qtd. in Katz 2003: 166)

At the beginning of Chapter Two, I introduce an important event in the emergence of dub-mixing. This event revolves around the "mistake" which Byron Smith makes in 1967 during a dub cutting session at Treasure Isle studio. More specifically, it is Ruddy Redwood's response to this technical difficulty that is most exceptional: "No, make it run", Redwood tells Smith (Bunny Lee in Katz 2003: 166). The difficulty in question has to do with proper synchronization of vocal to instrumental track in the transfer from master tape to dub plate. Smith missed the cue and his first reaction was to stop cutting but Redwood insisted that Smith continue to the end, without the vocal track (ibid.). When the dub plate finished cutting, Ruddy pronounced it art (ibid.).

This account is a good place to begin, for it roots the development firmly in the context of the sound system. As David Katz notes, "The standard practice of 'version' B-sides being constructed from customized rhythm tracks clearly follows from the legendary [late 1967/]1968 Treasure Isle soft wax session described above" (ibid.). However, he also points out that the use rhythm tracks "for more than one purpose" is not without precedent. "At Studio One in 1965, for instance, Roland Alphonso blew sax on a song called 'Rinky Dink', using the rhythm of Lee Perry and the Dynamites' 'Hold Down' with the vocals removed" (ibid.). In *People Funny Boy: The Genius of Lee "Scratch" Perry* (2000), Katz states:

> Discs like these reveal the ceaseless creativity of Jamaican producers and artists, who would re-use original rhythm tracks as an opportunity for a new instrumental, an alternative vocal, or deejay interpretation. Perry and Coxsone were already creating such alternative 'versions' by

> the end of the ska era. Re-using previously issued rhythm tracks as the basis for further recordings, they were thus able to generate something exciting and new without. . . [needing] to start from square one.
>
> (35)

Yet it was not until Ruddy Redwood received the enthusiastic support of Spanish Town sound system patrons that instrumental cuts were taken to the next level. After hearing the ecstatic response to his first experimental dub plate (an instrumental cut of the Paragon's "On the Beach"), Redwood immediately reported back to Duke Reid:

> I went into Duke Reid - Duke was my good friend, yunno - an' I says to him, "Man this ting - you can put the riddim on the other side [of the vocal single]". He says, "What!?" I say, "Yes man, I play it las' night". Duke used to depend on me to tell 'im which records goin' good. I tell 'im: "Well, try it" - yunno? An' 'im try it, an' it work".
>
> (Redwood qtd. in Barrow and Dalton 2001: 229)

Barrow and Dalton go on to state that Ruddy himself "lost no time in cutting versions of other well-known Duke Reid tracks to play at dances" (ibid.). Although most of these instrumentals appeared only as dub plates, they featured some interesting re-working on top of the mix, for example, with the addition of new melody line from the superb rocksteady guitarist, Lynn Taitt (ibid.).

By 1968, Duke Reid had accepted Redwood's advice and began releasing "tunes like 'Black Power' which used the rhythm track of the Silvertones' rocksteady cover of 'In the Midnight Hour', with Winston Wright's keyboard replacing the [vocal] group" (ibid.). A number of other re-worked instrumentals were issue by Treasure Isle around this time, and the "version" was on its way to becoming the standard feature on the B-side of Jamaican 45 rpm singles (ibid. 229-230). The previous convention was to have an entirely different song on each side of a single, but by 1970 this standard was replaced with a new one: "the B-side now carried an instrumental which used the same rhythm track as the top side" (ibid. 230).

"Before long practically every producer on the island was following in Ruddy's footsteps" (ibid. 229). Lynford Anderson, whose undervalued contributions have been noted in Chapter Two, mixed some of the most interesting versions of the time during his residency as engineer at WIRL

(ibid. 229-230). As early versioning was closely linked to the growing popularity of deejay records in the late 1960s, Anderson's pioneering dub mixes were simultaneously some of the first deejay hits. For example, in 1968, Anderson put King Stitt on "Herbman Shuffle", which had the deejay doing a shouted introduction and numerous "vocal sound effects to emphasize the song's pro-ganja message" (Katz 2003: 164). Anderson notes that, "If you listen to the record, I'm also talking on there - you can hear my voice along with King Stitt" (qtd. in ibid.).

It appears as if singer/producer Clancy Eccles released an instrumental version of "Herbman Shuffle" called "Phantom" (by The Dynamites) in 1970 (Barrow and Dalton 2001: 230). It is likely that both "Phantom" and the pioneering B-side of Little Roy's "Hard Fighter" (1971) were also mixed by Lynford Anderson. The B-side of "Hard Fighter", produced by Lloyd Daley, has already been noted for its significance as "the first vocal record with a full dub version on its flip side" (ibid. 232). "Phantom", released the year prior, is similarly singled out by Barrow and Dalton: "What made the record different from other contemporary instrumental 'versions' of hits was that it had been subjected to remixing that reduced the track to its fundamental element - *the lethal bassline*" (Barrow and Dalton 2001: 230-emphasis added).

However, more "wacky" is Lynford Anderson's "Pop a Top", which began as a cover of Dave Bartholomew's "South Parkway Mambo" (Katz 2003: 164). Anderson managed to persuade the session musicians at WIRL to let him record the song free at the end of the long day of recording. As bassist Clifton "Jackie" Jackson recalls:

> We were there recording, and we got to know him as a nice guy. He said to us, "Me have a likkle one, I beg you a song now". By this time we were there all day recording, it was one of those days when we had made about fifty pounds, so we were in a good mood. . . we did it and forgot about it. There was no question of money.
>
> (Jackson qtd. in Katz 2000: 59)

Anderson initially felt that the recording fell short of its potential and shelved it. "The instrumental version I was trying to re-create didn't work so we didn't touch that tape for years. One day I got it out, Lloyd Charmers starting playing 'pup pup pup, pup pup pup' [on the organ], so I said, 'Oh, Pop A Top!'" (Anderson qtd. in Katz 2003: 164). Anderson

voiced the tune himself under the alias Andy Capp (ibid.). "I did 'Pop A Top', the first talking record in Jamaica", Anderson states, "you can put that in any book" (qtd. in ibid.). Accompanied by Lloyd Charmers' chopping organ, Anderson's "quirky" delivery mimicked the bubbling sound of a Canada Dry advertisement, from which the song took its theme (ibid.). "The tune became a big hit", notes Anderson, "eventually we had about thirteen different versions of it" (qtd in ibid.). Barrow and Dalton describe these releases as "ground-breaking variations", displaying "the potential of the studio mixing board itself as an 'instrument'" (2001: 229-30).

Lynford Anderson had learned much of his craft through his apprenticeship with Graeme Goodall, who had been WIRL's studio engineer since its inception (Katz 2000: 58). Anderson moved to Kingston from his home town of Clarendon in 1959 (ibid.). The eighteen year old Anderson first worked as an accountant before leaving to work at RJR as a log keeper (ibid.). Although laid off in the early 1960s, Anderson was re-hired as a trainee engineer when another staff member was fired (ibid.). "Exhibiting a natural flair for sound engineering, Anderson stayed at RJR for two more years, recording and mixing material such as Prince Buster's '30 Pieces of Silver' on the studio's one-track monophonic recorder" (ibid.). Anderson was then approached by Ronnie Nasrallah, who had recently bought into WIRL's operations with Byron Lee (ibid.). "Mr Nasrallah asked me if I wanted a job at West Indies Records", Anderson explains, "Graeme Goodall was the engineer when they opened, he's the one that taught me the most of what I know. It was only a little console they had then, a little portable Ampex two-track" (Katz 2003: 99-100).

Graeme Goodall would train Anderson for a "significant period" before departing from WIRL and emigrating to England, where he established the Doctor Bird label in 1966 (Katz 2000: 58). Anderson soon became "an integral part of WIRL's operation": "I used to record and master almost one hundred songs a day, for foreign and local. I used to have to work right through the night, after working in the studio, then go down and cut again until four in the morning. Byron Lee was paying him a dollar for each one, so at night if you cut twenty you'd get twenty bucks" (ibid.).

It was during these all night sessions that Lynford Anderson would, in turn, share his skill and knowledge with upcoming producer, Niney the Observer. Like many Jamaicans with pet names, Niney is more commonly known by his nickname than his given name (Katz 2000: 57). He received his moniker after one of his thumbs was severed in an industrial accident, and it had the added advantage of avoiding the confusion around his given name; his father named him George Boswell while his mother raised him as Winston Holness (Katz 2000: 57). Niney first began as a record plugger and salesman for a number of leading producers, eventually entering production following a long period of freelancing (Katz 2003: 144). After settling in Kingston with his aunt, Niney began linking up with "guys like Derrick Morgan and Monty Morris, then me and Bunny Lee hook up, and me and Lee Perry" (Niney qtd. in ibid.). Most importantly, Niney emphasizes that:

> Andy Capp [Lynford Anderson] is a man who I get a lot of experience from - he was the greatest engineer at those times, and he was a genius in the business. Night 'pon nights I used to be around Andy. We sleep at the studio and he make songs, and I'm the salesman for them. I work with him on a lot like "Pop A Top", "Fat Man" by Derrick Morgan [issued as "Top The Pop"] and [the Race Fans'] "Bookie Man".
>
> (Niney qtd. in ibid.).

SECTION II
LEE PERRY AND LYNFORD ANDERSON

Another important relationship that Lynford Anderson established while at WIRL was with Lee "Scratch" Perry, who had began as an "errand boy" for Coxsone Dodd in the early 1960s (Katz 2000: 23). "He used to come down with records for Coxsone, cutting the masters", Lynford Anderson recalls (qtd. in ibid. 59). "He was the runaround, the guy who take them over for Coxsone. We get to know each other, and after work we'd hang out" (Anderson qtd. in ibid.).

Lee Perry arrived in Kingston in the early 1960s after working construction in Negril in the mid 1950s during the early stages of its development as a tourist destination (ibid. 7-8). Perry was born and raised on the edge of a sugar plantation near the rural town of Kendal,

and as he grew up he watched his family and those around him endure back-breaking labour in their daily struggle to make ends meet, "cutting cane in the fields for a mere pittance" (ibid. 5; 2003: 41). Perry was troubled by the prospect of this future.[1]

Once in Kingston, Perry headed over to Duke Reid's headquarters, Treasure Isle Liquors, but he received a chilly response from the Duke:

> Duke is said to have been troubled by the small man's presence, there was something unnatural in Perry's eye and when his gaze fixed on you, it was as though he was seeing through you, or looking at something else that was far and distant. Perhaps Duke had occasionally seen such a look before in his days as a policeman, in the eyes of those who scraped a precarious existence amongst the poorest slum dwellers who were saying that God was an African.
>
> (Katz 2000: 21)

However, Reid was impressed by the lyrics of the song that Perry sang for him, which he promptly gave to "popular hitmaker" Stranger Cole (ibid.). When Perry protested during the recording session at Federal studio, "Duke flattened him with a hefty punch" (ibid.).

Lee Perry departed for the rival camp of Coxsone Dodd, who started Perry as an "errand boy" (ibid. 23). Perry soon became a "regular fixture" at the Downbeat dances, and Dodd was particularly impressed by the "wild dance steps that the short youth employed" (ibid.). Perry's main task was to deliver freshly cut records, most likely in the form of dub plates, and monitor their reaction on the dance floor (ibid.). "I might go at certain times to see what was happening or bring new songs to give to the selector to play", Perry explains, "I would check the direction of the people: if it's this cut we want or that cut we want, or if you like this one, maybe we should make another cut of it" (qtd. in ibid. 23-24).

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[1] As Lee Perry explains, "I wasn't one of the working type. I loved to play games like dominoes. I never like to work, because I don't wish no one to be a slave. I want to be worked by my mind, not work by my body. I don't wish my body to be harmed. I really know this is the only body I've got and I've got to protect it. . ." (Perry qtd. in interview with Bruno Blum, Zürich, May 1994; Katz 2000: 5-6). While "throwing stones" on a construction site in Negril, Perry had a revelation: "I get an overload from throwing stones down there. . . I started making positive connection with stones, by throwing stones to stones I start to hear sounds. When the stones clash I hear the thunder clash, and I hear lightning flash, and I hear words. . . These words send me to King-stone: to Kingston. . . that's where the music's coming from. . . the stone that I was throwing in Negril send me to Kingstone for my graduation" (Perry qtd. in ibid.; Katz 2000: 8).

As part of Dodd's team of Downbeat defenders, Perry's position also involved spying and guarding the sound against rival sabotage, a task most notably performed by Prince Buster before him (ibid. 25). Trained as a professional boxer, "Buster started out as a follower of Tom the Great in the late 1940s, and controlled a gang based around Luke Lane in central Kingston, a notoriously tough area. Buster and his followers ensured that Coxsone's patrons actually paid to come into the dance" (Barrow and Dalton 2001: 15-16). Prince Buster's boxing skills gave him an edge when dealing with dance-crashers from other sounds, "in particular Duke Reid's bad-boy posse, from whom Buster once rescued Lee Perry" (ibid.).[2]

In 1961, Perry voiced "Chicken Scratch" for Dodd at Federal. Although the song was not pressed for commercial release, it became an "extremely popular" exclusive dub plate on Coxsone's sound system (Katz 2000: 25). That same year, Dodd presented Perry with his standard recording contract for vocalists (ibid.). Perry signed a five year contract which stipulated that he record exclusively for Dodd (ibid.). As Perry neared the end of his contract, he became increasingly frustrated with the lack of recognition he was receiving from Dodd (ibid. 42). Since 1962, Dodd had been giving Perry's lyrics to his other upcoming artists, a situation made worse by the fact that he substituted his own name in the credits and offered Perry no payment in return (ibid. 40). Perry also began "banging percussion" on some of Dodd's material and was assigned the role of auditions supervisor around this time (ibid. 27-28, 30). When the Maytals turned up for an audition in 1962, it was Perry who told Coxsone to record the group immediately (ibid. 29-30).

By the time his contract was nearing its end, Perry had voiced over thirty tunes for Dodd, about two dozen of which "were licensed for pressing in the UK and several were substantial hits" (ibid. 40). Most notably, Perry's "Pussy Galore" had become one of the biggest hits of 1966, and his "similarly lewd 'Rub and Squeeze' and 'Doctor Dick' (about

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[2] Although no longer working for Dodd at the time of this rescue operation, Prince Buster felt compelled to come to Perry's aid after Reid's heavies infiltrated a Downbeat dance at Forrester's Hall (Katz 2000: 26). The fight quickly turned ugly "and Coxsone fled the premises while Perry was given a knock-out punch. Buster then appeared just in time to fend off the attackers, dragging the unconscious youth to safety after a considerable battle" (ibid.).

an 'injection specialist' and his female patient) were also big sellers that year" (ibid. 40). Despite the "enormous popularity" of these and other songs, Dodd continued to doubt Perry's singing ability (ibid.).

Perry was also disturbed by the stifling climate at Studio One, particularly Dodd's "enduring disapproval" of material expressing Rastafarian sentiments (ibid. 41). Although nowhere near as "anti-Rasta" as Duke Reid, who retained a "blanket policy" against Rastafarian music throughout his entire career, Dodd was certainly hesitant (ibid.). Only after the repeated insistence of keyboardist and arranger Jackie Mittoo did Coxsone allow the recording of occasional Rasta instrumentals featuring Burru drums[3] (Katz 2000: 41). This restrictive policy remained in place through most of the 1960s, and only changed after "Rastafarian tunes became the rage at the end of the decade" (ibid.). Katz attributes this reluctance partly to the fact that bigger producers like Dodd and Duke Reid "were earning sufficient money to place some distance between themselves and the ghetto" (ibid. 42).

In the last year of his contract, Perry told Dodd he was going to the country for a holiday, but rather than leaving town, he sneaked into the studio to voice "Give Me Justice" for Carl Johnson, a.k.a. "Sir JJ" (ibid. 42-43). The first of a series of songs "aimed directly at Coxsone's head", "Give Me Justice" had the "double irony" of having been secretly

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[3] "At the very bottom of Jamaican society, the Burru men had retained the drumming traditions of the Asante tribe. . . and had a long history of rebellion and criminality that stretched back to the slavery days. . . Derived from a fertility ceremony that accompanied a masquerade dance, Burru music was later associated with a variety of social functions, including the greeting of prisoners returning home or morale boosting for incarcerated prisoners that were soon to be released" (Katz 2000: 9). Interestingly, it was Prince Buster that made the most daring move by including the (Burru-based) drumming of "renowned Rastafarian drummer Count Ossie (b. Oswald Williams)" in "Oh Carolina" in 1959 (ibid. 27; Bilby 1995: 163). This "monumental recording" became an instant hit through sound system play, with popular demand for the song becoming "so intense that both RJR and JBC radio stations had to overturn their ban on the single, and both eventually gave it ample airplay" (Katz 2000: 27). Although Kingston's leading jazz musicians had been congregating for regular late night sessions at Count Ossie's Rasta camp since the late 1940s (Katz 2003: 33), both Rasta and Burru men were regarded with extreme hostility by society; Count Ossie thought that Prince Buster was trying to ridicule him when Buster first approached him about doing a recording (ibid. 27). In fact, Prince Buster had to spend several days up at the Rasta Camp in the Wareika Hills before "convincing the master drummer there was no hidden agenda" (Bradley 2000: 59). Despite Duke Reid's attempt to sabotage the recording session, "Oh Carolina" brought Buster such popularity that soon "Count Machuki fled [Dodd's] Downbeat set to deejay for [Buster's] Voice of the People, forcing Coxsone to deejay on his own set temporarily" (Katz 2000: 27).

recorded at Dodd's own studio during his absence (ibid. 43). The break was thus complete and Perry spent the pivotal year of 1967 trying to establish himself in a partnership away from Dodd (ibid. 47). Perry had neither financial resources nor an outlet for his product (ibid.). He did a number of one-off recordings over the year with various producers, his biggest success being "Judge Dread" with fellow Coxsone defector Prince Buster (ibid. 48). Sylvan Morris, Studio One's engineer at the time, remarks on Perry's peculiar creative disposition in connection with this session: "Him make a suggestion and him and Buster just go about it. Scratch is an extraordinary individual. He's a creator, he creates things which is abnormal and unusual" (Morris qtd. in ibid. 49).

When Prince Buster went on tour for several months in the U.K. that year, Perry drew on a contact made with WIRL's manager, Clifford Rae, during his time at Studio One (ibid. 50). Perry worked out a "record now and pay later" arrangement with Rae in which Perry would supervise sessions and deliver records for WIRL on a little Honda 50 motorbike. Session and pressing fees for Perry's own projects would be, in turn, absorbed by WIRL until he could raise the funds through record sales (ibid.). However, not long after settling into this new position, Perry was ousted by the better connected Bunny Lee (ibid. 51).

Bunny Lee began working in the music business as one of Duke Reid's hired hands in 1962 (ibid.). Katz states that "the heavy-set youth's task was to see that Reid's product was played on the radio 'by any means necessary'[4]" (Katz 2000: 51). When singer Roy Shirley approached Joe Gibbs with a song he wrote called "Hold Them" (1967), it was Bunny Lee's promotional efforts that helped get the song in the charts (ibid. 53). Roy Shirley subsequently brought Bunny Lee to WIRL and introduced him to Clifford Rae: "This is Bunny Lee, the man who help get that tune ["Hold Them"] in the charts", Shirley told Rae (qtd. in ibid.). Shortly thereafter, Bunny Lee was brought in to replace Lee Perry as WIRL's arranger, and Bunny Lee broke out into independent production with the establishment of his Lee's label (ibid. 52).

Backed by Lynn Taitt and The Jets, "Hold Them" was a "massive success" for both Joe Gibbs and Roy Shirley (ibid.; 2003 : 71). For band

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[4] Bunny Lee qtd. in Katz 2003: 51.

leader Lynn Taitt, the tune was also one of the first in a series of recordings that ushered in the shift to *rocksteady* (Katz 2003: 66, 69-73). In contrast to the "after-beat emphasis of ska", "the slower, less cluttered" rocksteady style revolved around the "one drop" rhythm, and the new prominence of electric bass in carrying the melody line (ibid. 65).

The shift from upright acoustic to electric (solid-bodied) bass was indicative of a broader shift in instrumentation (Katz 2000: 43). This shift entailed a decline in ska's big-band jazz arrangements and a corresponding increase in "smaller, studio-based groups that used horns as complementary instruments rather than musical focal points" (ibid.; 2003: 65). Accompanying the new style and musical arrangement was a cool new dance by the same name: the rocksteady (Bradley 2000: 159-161). The phenomenal Leonard Dillon, lead singer of the Ethiopians, recalls the centrality of studio musicians and the dancing public in this shift: "The musicians were very creative, and the dance again have a lot to do with it - the dancing change the music a lot. In those times, when you make a song, you have to make a dance with it for it to sell" (Dillon qtd. in Katz 2003: 66).

According to Bradley, this move towards smaller session groups was largely enabled by an important change in the medium of instrumentation (2000: 157-158). Around 1960, it is said that Byron Lee introduced the Fender solid-bodied bass, amplifier and electric organ, primarily in a quest for greater touring mobility (ibid. 157). As Byron Lee explains:

> Nobody was going to carry the stand-up bass on a truck for you. Or the piano. . . And we were the first band in the entire Caribbean to come up with the idea of touring, but we had to get that mobility. So I went to America and got the basic electronic equipment - the first Fender bass and Fender bass amplifier in the whole Caribbean; and an electric organ.
>
> (Byron Lee qtd. in ibid.)

"The people took to this immediately", Byron Lee goes on to say (qtd. in ibid.). However, mobility was not the only reason for the success of this new equipment: "Most importantly, it was because the electric bass and organ gave what we were doing much more punch and *after the power of the sound systems, they didn't want anything subdued*" (Byron Lee qtd. in ibid.-emphasis added). Despite the central position Byron Lee allocates

to his band, the music itself was of little note. It was in fact the proliferation of the electric bass which represented the group's most lasting contribution to the island's musical development. By the mid 1960s, the instrument had become standard equipment in most Kingston studios (ibid. 158). According to Lee Perry, it was with Coxsone Dodd that the instrument really began to assume a dominant and innovative position in the music.[5]

Bumped from his post at WIRL in 1967, Lee Perry decided to align himself with "recent adversary and former rival" Joe Gibbs (Katz 2000: 53). Like Perry, Gibbs was in the process of trying to establish himself on the ghetto record scene with relatively few resources (ibid., 52). Although "Hold Them" brought Gibbs considerable notoriety, Perry would further this reputation by working closely with the artists in the studio, "developing a distinct musical style" in the process (ibid. 53). One of the more distinguishing features of Perry's approach to production, which would increasingly permeate his own recordings, is the use of sound effects. Perry would use sound effects as both a means of studio direction and as an additive to session recordings[6]. The prominence of sound effects in Perry's work seems to be more than just another oddity in his often puzzling approach to record production. Perry's use of sound effects suggests some of the ways in which recording technologies appear to be emphasizing different skill sets than those associated with composing via a written score.

In terms of a heuristic and communicative device, Perry would employ sound effects to convey his ideas about the kind of sound he was after. Bassist Jackie Jackson recalls how "Scratch would come into the studio and say 'Play this for me: doo doo, doo doo, doo doo, doo doo, ding ding' and we play it, or he might say 'the drum, give me this beat'. He's not a musician, but he can relate to you what he wants that kind of way" (Jackson qtd. in ibid.). Errol Dunkley, Jamaica's second child star

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[5] Interview with Steve Barker and Roger Eagle (recorded for BBC Radio Lancashire's "On The Wire" with Steve Barker in 1984, 1986 and 1991), *Lee Perry: "Divine Madness ... Definitely"*, Pressure Sounds, 2001.

[6] On this sound effects style of production, bassist Paul Simonon of the Clash states: "I see Lee Perry as the Ennio Morricone of Jamaican Music. . . his music is like the soundtrack to my childhood" (Simonon qtd. in Katz 2000: 288).

following Delroy Wilson, confirms Perry's talent in this area and contrasts it with Gibbs' attempts at direction:

> [Lee] Scratch [Perry] was a freelance producer, he's got a good hearing for sound. . . Lee Perry's the guy who could compare with musicians. When (Gibbs) tried to tell them what to do, they just laughed, because him couldn't talk to them in the term of music. It's like he's just the guy who put up the money. Later on, him get an idea of things still.
>
> (Dunkley qtd. in ibid. 54)

Organist Tyrone Downey recounts how Perry's phonetic production style continued into the 1970s. Downey compares Perry's "non-professional" approach to Duke Reid's, in the sense that neither knew the proper musical terminology, but both knew exactly what kind of *sound* they wanted to hear from their musicians:

> Lee Perry, Duke Reid, they have a way. . . they don't know music, they don't know shit about music. He'd say, "Give me a zoing, man" and "Zoong zoong zoong paff! Chikee-crash!" And Duke Reid even write it down, like long stokes, short strokes, hold, like hieroglyphics. . . Hearing from other musicians, they talk about Duke Reid, it seemed to me like between him and Lee Perry, they were like conductors. . . they never had the coat with the tails or the stick, but they know what they wanted and they knew how to relate to the musicians.
>
> (Downey qtd. in ibid. 134)

Sound effects also began breaking into the recordings themselves, particularly striking on Perry's "Kimble", recorded for Joe Gibbs in 1967 (ibid. 57, 59). This version of Stranger and Gladdy's "Seeing Is Knowing" appeared on the B-side of the Pioneers' "Jackpot" and featured Perry assuming the identity of the one-armed killer in *The Fugitive* television series (ibid. 57). "Breaking bottles and cracking whips" punctuate his lyrical delivery (ibid.).

Another interesting recording Perry made while with Gibbs was "The Upsetter" (1968), a follow-up to "Give Me Justice" in his series of musical attacks on former employers (ibid. 55). The tune accused Coxsone Dodd of being greedy and "gravelicious" and announced the arrival of Perry's latest recording personality, the Upsetter (ibid.). The chugging rhythm was complimented by two quirky guitar lines playing simultaneously, an effect created by double-tracking Lynn Taitt accompanying himself (ibid.).

However, soon Joe Gibbs would become the next target of Perry's musical ire. Perry increasingly found himself acting in the capacity of a partner, yet without any of the rewards of a partnership. If Perry "had been under any illusions about being in a partnership with Gibbs, the assertion of the more ruthless side of Gibson's character soon made it readily apparent that this would never be the case" (ibid. 57). Katz continues by stating that when Perry confronted Gibson one night, "their quarrel turned ugly", and Perry struck out on his own (ibid.). The opening left by Perry's departure was soon filled by Niney, with Perry now shifting his attention back to WIRL (ibid., 59).

It was not only the facility that attracted Perry this time, but also the prospect of establishing an allegiance with WIRL's resident engineer Lynford Anderson (ibid. 59). Anderson was in a similar position of attempting the move into producing his own records (ibid.). He had already managed to record "South Parkway Mambo" which, as mentioned earlier, was shelved for some time before being turned into the hugely successful "Pop A Top" series (ibid.).

By 1967, Anderson had formed the Upset label with Perry and WIRL's trainee engineer, Barrington Lambert (ibid.; 2003: 100). The following year, Perry presented his idea for "Honey Love" (a cover version of the Drifters' tune) to the Upset team. The singer that Perry brought in to voice the tune was an "unknown adenoidal crooner" named Burt Walters, "someone Perry found singing barefoot on the streets of Rockfort in East Kingston, a 'sufferer' who is said to have been emotionally unstable" (Katz 2000: 63). Although the vocal version turned out to be nothing special, the B-side was bizarre indeed (ibid. 63-64). "Evol Yenoh" used the same instrumental backing as "Honey Love", but ran the entire vocal track backwards. As Katz David emphasizes, the result was nothing less than shocking, particularly at the time:

> Walters' saccharine sentiment thus appeared as the fervent pleas of a tongue possessed, the sweet banality of pop turned on its head to produce something startling and alien. Such radical representation of a singer's voice was unheard of in 1968; even the Beatles had dared only to reverse a mere half a vocal line of their experimental song "Rain".
>
> (ibid.).

Yet the most influential recording to be released on the Upset label was "People Funny Boy" (1968), recorded at WIRL with the assistance of Clancy Eccles (Katz 2003: 100). Inspired by the rhythms of a late night Pukumina church service[7], "People Funny Boy" clearly signaled the arrival of new beat (Katz 2000: 65, 68). According to Katz, it is this new beat that would give rise to "the music that would eventually be known as reggae" (ibid. 68). There are many contenders that have attempted to claim the title of first reggae record. These completing claims have the advantage of drawing attention to the various characteristics which have been put forth as definitive of the new style.

"Nanny Goat" (1968), sung by Larry Marshall and Alvin Leslie for Studio One, is another commonly cited pioneering recording in the reggae style.[8] In terms of musical innovation, the element that stands out most in this recording is the greater sense of space, created largely through Boris Gardiner's tight, minimal bassline (Katz 2003: 123, 97). Boris Gardiner's rest stops opened the tune up further (ibid.), to the point where Coxsone Dodd told Larry Marshall: "This don't sound like it could go out, Larry, because this sound empty" (Marshall quoting Dodd in ibid. 123). "No, man - empty? The people await 'pon this", Marshall replied (qtd. in ibid.). But Dodd was not interested and Marshall and Alvin Leslie had to promote the song as a dub plate, which was hugely successful although not financially rewarding (ibid.). "Because Coxsone did not

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[7] In describing the "interface" between rural and urban musical styles in the rapidly expanding West Kingston urban fringe of displaced peoples, Bilby states: "Much more widespread. . . were the musical expressions of Jamaica's hundreds of rural Afro-Protestant churches and sects, most of them variants of the general form of worship known in Jamaica as *Pocomania* (sometimes spelled *Pukkumina* [or *Pukumina*]), or 'Revival'. These indigenous religions were forged out of the nineteenth-century encounter between religious concepts brought to Jamaica by enslaved Africans and the teachings of European missionaries" (1995: 152). Katz adds that, "As in other parts of the Caribbean, slaves in Jamaica propagated African forms of religious worship through secret ceremonial societies" (Katz 2000: 65). In the ceremonial rites of Pukumina, ancestral spirits would visit the faithful, taking possession of their bodies following a ritual involving music, singing and dancing (ibid.). It was the intensity of one such service that assailed the ears of Perry and Lynford Anderson while walking home from a bar one night. Perry was immediately struck by the way that "the people inside a wail. And me catch the vibration and say boy! Let's make a sound fe catch the vibration of them people! That's where the whole thing come from, 'cause them Poco people getting sweet" (Perry qtd. in Chris May, "Starting From Scratch", *Black Music*, vol. 4, no. 47, Oct., 1977: 13; Katz 2000: 65).

[8] Liner notes, *Larry Marshall: "Presenting Larry Marshall"*, Heartbeat, 1992; Katz 2000: 68; 2003: 97.

approve of 'Nanny Goat'", Larry Marshall explains, "I had to take it as a dub and promote it myself" (qtd. in Barrow and Dalton 2001: 100). Taking advantage of his position as deejay on the King Victor sound system, Alvin Leslie thus made sure the dub plate received some of the exposure it deserved: "Fi five months him [Alvin Leslie] crash [flop] every set. . . When you look at Tommy's Lawn inna Papine Square [where King Victor played], they're so ram with people, yet me cook up in a one corner with one little piece of boot 'pon me foot, all the bottom broke, and Alvin and me have a number-one tune named 'Nanny Goat'" (Larry Marshall qtd. in Katz 2003: 123).

Duke Reid and all the big sound systems began asking how they could get their hands on a copy (ibid.). Coxsone Dodd must have recognized his error with "Nanny Goat" because Larry Marshall was subsequently brought into the Studio One operation for "a long period" (ibid.). During this term, Marshall's "recorded material, harmony vocals and assistant engineering helped to consolidate the emerging genre that came to be called reggae" (ibid. 124). His follow up recordings with Alvin Leslie,[9] constitute some of the most stirring vocals ever committed to vinyl.

Through his involvement in cutting and promoting dub plates at Studio One, Larry Marshall also appears to have had an important influence on the young King Tubby. In his interview with Jim Dooley, Larry Marshall relates: "It's me them used to call the dub master at Coxsone's place. So that is where King Tubby. . . him come for his dub, and him sit down and watch we. Him and Jammys, because Jammys used to come with him".[10] Further, Tubby's remix of Larry Marshall's "I Admire You", called "Watergate Rock" (1974), has been singled out as the dub that really made Tubby's name in Jamaica (Barrow and Dalton 2001: 233).[11] Upon encountering a bunch of tough Waterhouse (South

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[9] Released as singles in 1968 and 1969 (Katz 2003: 124), although a number of these tunes are collected on the excellent "*Presenting Larry Marshall*" (Heartbeat, 1992).

[10] Marshall qtd. in interview with Jim Dooley, "Come Let Us Reason" <http://www.rayx.freeserve.co.uk/Larry%20Marshall%20-%20Come%20Let%20Us%20Reason%20-%20Jim%20Dooley.htm>: 4.

[11] In Larry Marshall's own words: "That the dub that made King Tubby's name. Him tell me!" (Marshall qtd. in Barrow and Dalton 2001: 101).

Kingston) youth with Larry Marshall one time, King Tubby was quick to set the record straight concerning Marshall and the respect he deserved:

> About ten youths from Waterhouse, bad youths them, walk around and a look things, and beg people money and things. And them come a Tubby's, and. . . we round there, so Tubby look upon them and say, "Hey, let me tell you something. You see this man here, Mr. Marshall, him is the one who make me name King Tubby." When him say these things, they say, "No Tubby man, what you say that for". Him say, "Yes youth, and I will tell you", and him tell some certain things.[12]

Although Katz is careful to point out the contributions of Larry Marshall and Boris Gardiner to the development of the new reggae style over at Studio One, he finds that the new beat of "People Funny Boy" is "far more extreme" (Katz 2000: 68). A similar assertion could be made about the contrasting vocal styles. Whereas Marshall and Leslie's vocal delivery had a delicate quality, in "People Funny Boy", Perry kept his voice "gruff and unrestrained in the chorus", attempting to capture the fevered pitch of the Pukumina session he had witnessed the night before (ibid. 66). Further, sound effects were once again being brought to the fore on this recording, this time in the form of his crying infant son, meant to underscore the injustice Perry endured while with Joe Gibbs (ibid. 66). Singer Watty Burnett, who was in the studio during the song's recording, states that, "When Scratch's little boy was a baby, he took him in the studio and give him two spank on his bottom. . . That was the first sampling" (qtd. in Katz 2003: 100).

After recouping their initial investment following the release of "Honey Love", Lynford Anderson and Barrington Lambert decided to pull their money out of funding further Perry projects on the Upset label (Katz 2000: 64). Instead Anderson and Lambert opted for gambling the money away at the racetrack, and Perry had to find an alternative outlet for the release of "People Funny Boy" (ibid. 64, 67). Anxious to get the tune out, Perry went to a distributor known as KG, who would sometimes front money to small producers to cover pressing fees (ibid. 67). After a favourable response to the first thousand pressings, KG agreed to press

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[12] Larry Marshall qtd. in interview with Dooley, "Come Let Us Reason" <http://www.rayx.freeserve.co.uk/Larry%20Marshall%20-%20Come%20Let%20Us%20Reason%20-%20Jim%20Dooley.htm>: 5.

another ten thousand, all of which appeared on blank labels (ibid.). "Ten thousand blanks!" exclaims Lynford Anderson, "It was all illegal stuff they used to do those days. Nobody get paid, nobody registered nothing" (Anderson qtd. in ibid.). KG would make twice as much as Perry through a deal with Graeme Goodall's Doctor Bird label in England (ibid.). Perry later indicated that the song sold a "staggering 60,000 copies on its initial release" (ibid.). The money raised from this release enabled Perry to launch his own Upsetter label, take over Prince Buster's former record shop at 36 Charles Street, and buy his first car, a model S Jaguar which he imported from England (ibid.; 2003: 100). It appears that following this success, the Upset label issued "People Funny Boy" as well (ibid. 2003: 100). With Perry now firmly established as an independent force, attention can be shifted to the next figure in the investigation, Sylvan Morris. Lee Perry will be picked up again in the concluding section of this chapter, which centres around his experimental work at the Black Ark studio.

SECTION III
SYLVAN MORRIS AT STUDIO ONE

In 1963, Coxsone Dodd established the Jamaica Recording and Publishing Studio, more commonly known as Studio One (ibid. 47). Studio One was installed by "the supreme sound technician and session guitarist Headley Jones" in a former nightclub at 13 Brentford Road (ibid.). Construction was carried out with the assistance of Dodd's father, while Dodd's cousin, Sid Bucknor, helped Jones with the installation of the electrical equipment (Katz 2000: 32; Barrow and Dalton 2001: 15). The equipment itself was purchased from Federal studio after Ken Khouri decided to make the move to stereo recording that same year (Katz 2000: 32; Chang and Chen 1998: 85). Despite this "technically inferior one-track equipment", Studio One's establishment became "one of the most significant moves in the solidification of ska's popularity" (Katz 2003: 47).

Sylvan Morris appears to have joined the Studio One team around the mid-late 1960s, just as the new reggae sound was taking shape (ibid.

119-121). As the earlier discussion of Dodd's reaction to the emerging reggae sound suggests, it was primarily the efforts of "upcoming 'ghetto promoters'" that initially pushed the reggae sound forward (ibid. 97). Yet despite this hesitant beginning, a number of important developments in the reggae style were taking place at Studio One as well (ibid. 119). Musically, Leroy Sibbles' introduction to the bass by Jackie Jackson would result in some of the most influential basslines in the history of Jamaican popular music (ibid.). In contrast to Boris Gardiner's spacious yet bouncy bassline in "Nanny Goat", Sibbles brought a new meditative emotional weight to the lower frequencies, augmented further by the studio's beautifully idiosyncratic bass-capturing capabilities (ibid., 97). The development of these capabilities was very much the work of one man, Dodd's new resident engineer, Sylvan Morris (Barrow and Dalton 2001: 246).

Growing up in Trench Town, Sylvan Morris had been interested in electronics at a young age (Barrow and Dalton 2001: 246). Morris was later formally trained at a telecommunications firm and technical school (Katz 2003: 120). He explains that, due to his knack for fixing a type of two-way radio called the Reporter, he became known as the "Reporter Professor" (Morris qtd. in Barrow and Dalton 2001: 246). After working in telecommunications at a place called Comtec, he was brought in to WIRL's operation by a man named Abrahams (ibid.; Katz 2003: 121). "They wanted a technician to help with the installation of the three-track", Morris recalls (qtd. in Katz 2003: 121). "Graeme Goodall, a very good engineer, was here [at WIRL] and wanted an assistant, so they bring me in. He taught me the practical work of mastering and the sense of the board. We did work on some of them tunes with Linford Anderson, but I didn't stay that long" (Morris qtd. in ibid.). He explains that Byron Lee came in one day and started fiddling with some controls, causing the monitors to react badly, "him [Byron Lee] say, 'What kind of noise is that?'" (Morris qtd. in ibid.). Being young, Morris replied, "If you don't know what you're doing, don't touch it", and was promptly fired (qtd. in ibid.).

Morris moved to Treasure Isle studio, working there for about half a year, but found Duke Reid's dictatorial manner abrasive and decided to join Dodd's team (ibid.). Sid Bucknor was then resident engineer at

Studio One, and the two overlapped for a short period before Bucknor left (ibid.). Morris made a number of interesting modifications, attempting to get as much as possible out of "Coxsone's low-fidelity set-up" (ibid.). One of the most important modifications involved the refinement, if not the creation, of Studio One's signature bass sound (Barrow and Dalton 2001: 246-247).[13] As Sylvan Morris recalls, "I noticed that from the back of a speaker you usually get a very heavy bass sound - it is a lot louder in the back than in the front" (qtd. in Katz 2003: 121). Elsewhere, Morris describes the quality of this posterior position as being "rounder"; "I always notice the back of the bass speaker always get a rounder sound" (Morris qtd. in Barrow and Dalton 2001: 247). "So I created a box where I left two holes and put the mike at the back" (Morris qtd. in Katz 2003: 121).

Another device which helped create Studio One's "round" bass sound was a curiously re-built ribbon microphone. As Morris states, "there was an Electrovoice mike that Coxsone had which create a lot of those bass sounds" (qtd. in ibid.).

> What happened was the ribbon for it got broke one night, and they couldn't find another one. So I created a ribbon from one of the tapes. On the end of the tape, you have a piece of silver tape, and I took that and made a ribbon out of it, and put it into the mike. And it seemed to know just how to respond to the right bass frequency.
>
> (Morris qtd. in Barrow and Dalton 2001: 247)

Morris adds elsewhere that "because this ribbon is not created for the mike all it did was pick up a certain range of frequency -- mostly bass -- so you got a more rounder bass penetrating" (qtd. in Katz 2003: 121). Further, many of Dodd's microphones had become "selective because

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[13] While Sylvan Morris is careful to single out Leroy Sibbles as a foundational element in the Studio One sound (Morris in Barrow and Dalton 2001: 247), Leroy Sibbles seems to withhold similar praise for Morris, reserving credit instead for Coxsone Dodd: "A lot of that Studio One sound was possible from the way it was engineered. Even when it went two-track the way it was balanced hadn't changed. Coxsone himself had set it up, because in the beginning he used to do all his own engineering and he knew what he was doing. He had bought two six-track mixers in New York, from a firm called Lang, and because he had so many different channels he could balance the instruments by giving them more than one track if he wanted them to be strong. He'd mic'ed up the bass and the drums to sound strong and fat - I think it was three channels for the drums and three for the bass, and only one for horns - which was the foundation of that whole Studio One sound" (Sibbles qtd. in Bradley 2000: 219).

they dropped them -- you find that they're not picking up the right frequencies, so I have to try to equalize it" (Morris qtd. in ibid.).

Morris also devised a technique for creating a "dreamy" echo effect, as can be heard on the Eternals' "Queen Of The Minstrels" (ibid. 120) and Jerry Jones' "Still Water".[14] "Echo wasn't that prevalent as now", Morris explains, "Being a technician, I take the playback head and feed it back into the record head, feed it into a track on the board, so you had this echo on the voices" (qtd. in Katz 2003: 120). In contrast to the affective yet relatively consistent application of echo in "Queen Of The Minstrels" and "Still Water", other works from this period were subject to more unconventional echo treatment. The Wailing Souls' self-titled Studio One LP, featuring a collection of phenomenal songs recorded in 1970 and 1971, contains several tunes subject to such unconventional treatment. "Back Out With it", "Real Rock" and the amazing "Got To Be Cool" all feature subtly dubbed-out sections in the latter part of the song.

These dubbed-out sections do not constitute their own track but are actually tacked-on as part the original vocal version. Following a vocal with its dub-version would later become a common practice, as in the case of the *showcase* album format (Barrow and Dalton 2001: 452), but this was not the case here. Instead, on "Got To Be Cool" for instance, after being lulled into the grove of a beautiful vocal harmony workout, something unexpected happens. The now familiar line, "Like a trees is planted by the river, I shall not remove" begins as usual, but by the time one hits "planted by the river", the singers' words are suddenly pulled into a dramatic echo and the bottom-end of the frequencies drop out. As "remove" echoes-out over the faint upper-end instrumental backing, an audible "crack" or "pop" occurs. This unintentional noise is likely a byproduct of the switch used to punch-out the bass track. These kinds of unintentional cracking noises tend to make engineers wince, and Sylvan Morris may well have at the time, but this "crack" has the interesting effect of signaling a fundamental break; the crossing of a threshold in the possibilities of recording. The point at which the familiar becomes strange. Like so many other dub innovations, it is the "mistake" which

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[14] "Queen of the Minstrel" and "Still Water" can be found on *Studio One Soul* (Soul Jazz Records, 2001).

"finds a place and fits in".[15] The remainder of the track is a moving demonstration of the subtly of expression Morris was able to achieve in dub.

In fact, Morris's engineering specialty was more on the side of recording than dub remixing (Barrow and Dalton 2001: 249), and this partly explains why the strength of his remixes rests so much on restraint. However, during his subsequent residency at Harry J's studio, beginning around the mid 1970s, Morris did release two dub LPs under his own name in which he versioned a number of classic Studio One rhythms (ibid.). He had this to say about the explosion of dub's popularity at this time:

> The dub thing was just coming to the fullness at the time. . . it was brought about to a degree by the sound men. They came and they wanted probably just a rhythm, a particular rhythm, and if you gave it to one man, another would wanted a different version. So you had to improvise -- you had to give some a little bass and drum -- every one of them sound different. This is how the drum and bass thing come about.
>
> (Morris qtd. in ibid.)

Echo and reverb effects, used to such great effect in the above mentioned Wailing Souls' material, would be a central instrument in further morphing the already-fragmented and increasingly experimental dub-versions around this time. These effects could be used to deepen the sense of "bottomlessness", already inherent in dub-mixing de-constructions, as well as intensify the dramatic quality of vocal deliveries. Connected with this sense of bottomlessness was the impression that an original vocal version had been "opened-up", bringing both a feeling of possibility and danger. One is clearly in the realm of loss, for as mentioned earlier, the dub-version emerges from what has been taken away. Echo also bears an interesting relation to the process of mechanical reproducibility (or "repeatability", as McLuhan calls it),

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[15] In terms of the role of the "mistake", Scientist (one of King Tubby's most talented apprentices) describes the dub form as stemming from "engineers using the recording equipment to bring about musical changes, a musical environment where reggae music is the music what brought forward the remix, or most of what we hearin' in hip-hop. There is no other music in the world that has the kinda versatility that you could make dub. . . With [dub] reggae, *when you make a mistake, it finds a place and fits in*" (Scientist qtd. in Barrow and Dalton 2001: 254-emphasis added). One might also recall the crucial "mistake" made by Byron Smith while cutting a dub plate for Ruddy Redwood in 1967.

particularly in its degenerative aspect. This degenerative element becomes especially apparent in the swelling distortion which builds in a lingering echo; an expression of the principle known as "generational decay".

Having considered some of the more unorthodox practices pioneered by Sylvan Morris at Studio One before his departure to Harry J's studio in the mid 1970s, King Tubby can now take centre stage.

SECTION IV
KING TUBBY

In 1969, important changes were taking place in the sound system, largely as a result of the partnership between King Tubby and U-Roy (Barrow and Dalton 2001: 231). Together, they pushed the parallel innovations of modern deejaying and the instrumental dub plate to a new level (ibid.). Three years later, Tubby purchased a piece of equipment that would enable him to make equally groundbreaking contributions in the realm of dub-mixing. This equipment was a four-track MCI mixing console, secured from the recently upgraded Dynamic Studio, formerly WIRL (ibid. 232).

The deal was brokered by Tubby's friend Bunny Lee who, as one of Dynamic Studio's in-house producers, was well connected with the studio's owner, Byron Lee (ibid.; Katz 2000: 154). In November of 1972, Dynamic installed the first sixteen-track machine on the island and converted studio B's four-track facility into a stamper cutting department (Katz 2000: 154; 2003: 182). In Tubby's hands, the impact of this "obsolete" mixing-board[16] could be felt almost immediately. As Barrow and Dalton state, "Dub, in the now familiar sense of radically remixed versions, arrived in 1972, and was largely the contribution of one man: Osbourne Ruddock, aka King Tubby" (2001: 227).

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[16] As Bunny Lee states, "I help him out getting a new mixing board, beca' I knew Byron Lee was upgrading his Dynamic Studios and throwing out his old four-track board. That's how King Tubby's Studio, as a multi-track, was really begun" (Lee qtd. in Bradley 2000: 316).

Like many innovators discussed, King Tubby's fascination with "all things technical and in particular electronics" began as a child (Hendley 1987: 91). After leaving school, he enrolled in the first of three courses on electronics and, by 1962, he had built his first amplifier (ibid.). Although only 25 watts, his first amplifier sounded so good that "friends began to urge him to start building a system for playing at dances" (ibid.). Katz states that Tubby established his first sound system in 1958, but Niney suggests that this was initially a small set, affiliated with more uptown crowds (2003: 165). "King Tubby used to have a likkle hi-fi that he played up Red Hills. . . There is certain little people follow him, not the rebel people those days, 'cause he have a hi-fi"[17] (Niney qtd. in ibid.). Niney also adds that, in terms of content, Tubby first began by recording songs off late-night radio broadcasts, playing them back over his sound system at the dance.

Glen Brown[18] describes how King Tubby's penchant for recording resulted in the construction of a special device for Tubby's motorcycle. Being from the same area in Waterhouse (South Kingston), Glen Brown remembers how "King Tubbys always build some little speaker, he always have a little [motor]bike, so King Tubby's build a little thing on the bike. Sometimes you're talking to him and he'll record you" (qtd. in ibid. 182).[19]

As an electronics technician, Tubby's primary source of income came from his electrical repair work (ibid.). He carried out most of his repairs in a "little house" in the backyard of his Dromilly Avenue

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[17] "Hi-fi" generally indicates that a sound is more "uptown".

[18] Glen Brown was one of the first producers to use King Tubby's facilities, most notably with "Merry Up" (1972), "One of the first drum and bass tunes that come out" according to Bunny Lee, and "Tubby At The Controls", a salute to Tubby's mixing abilities (Katz 2003: 179-182).

[19] This kind of playful recording behavior would later come up in Tubby's approach to dub-mixing. Michael Campbell (a.k.a. Mikey Dread) and King Jammy, both whom apprenticed under King Tubby, have commented on Tubby's sense of humour at the mixing-board. "The man a marvel, he move rapid and touch up 'nuff likkle things to go *blee-blee-bleep* and t'ing. That's like his sense of humour and joyfulness coming out", explains Campbell (qtd. in Bradley 2000: 322). "He had a good sense of humour", Jammy similarly remarks. "You can hear it in his mixes, they're full of humour, and that was one of the things that gave him the advantage over other mixers" (qtd. in Bradley 2002: 103).

residence[20]. Philip Smart, Tubby's resident engineer through much of the mid 1970s, recalls that:

> His main income was building amplifiers and winding transformers, because he had contracts for hotels that needed transformers for stabilizing the current. The music was an addition, because he had the [Home Town Hi-Fi] sound and he always wanted to make his own dubs [acetates], so that's how he started: he bought the dub cutting machine to cut his own dubs.
> (Smart qtd. in ibid.)

King Tubby was regularly called to carry out repair work at Duke Reid's Treasure Isle studio on Bond Street (Barrow and Dalton 2001: 231). He would occasionally step behind the dub cutting machine in the capacity of mastering engineer there as well (Tubby in Chang and Chen 1998: 76; Katz 2003: 164). However, it was Tubby's friendship with Bunny Lee that would really bring him to the front-lines of dub plate experimentation. It was Bunny Lee who, in 1968, took Tubby to one of Ruddy Redwood's dances in Spanish Town to show him the effect of Ruddy's exciting new dub plate instrumentals (Barrow and Dalton 2001: 231). Tubby was inspired by what he saw, and he resolved to upgrade his sound and try experimenting with the new style of mixing himself (ibid.).

The discovery of mid-song track drop-outs seems to be a central feature of the next shift in dub-mixing. In one statement, Tubby appears to suggest that this discovery emerged out the process of making test cuts over at Treasure Isle (Chang and Chen 1998: 76). As Tubby explains:

> I used to work on the cutter for Duke Reid and once a tape was running on the machine and I just drop off the voice - it was a test cut. We take some of these test cuts and carry them home and the Saturday we was playing out, I decided to test them cause it sounds so exciting the way the records start with the voice, the voice drop out and the rhythm still going. We carry them to the dance and I tell you, about four or five of the tunes keep the dance. Cause is just over and over we have to keep playing them. The crowd wouldn't let us play anything else. We introduce a different thing to the sound system world, with reverb and all that. And it get people excited and we have a following. And then U-Roy come on with a style. . .
> (Tubby qtd. in ibid.)

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[20] 18 Dromilly Avenue was actually owned by Tubby's mother, known as "Miss Sissy", who allowed Tubby to live there (Katz 2003: 182).

However, the most exciting mixes were yet to come, and took place in a different location; King Tubby's home studio, located in the core of the Waterhouse ghetto (Katz 2000: 128-159). Tubby's tiny bedroom set-up was not a recording studio in the conventional sense, "nor was Tubby an actual producer until the late 1980s" (Katz 2003: 182). His one-room studio was located in a former carport, which had been converted into Tubby's bedroom and bathroom (ibid.; 2000: 159). At first, his equipment consisted mainly of an old dub cutting machine, a "home made" two-track mixing console and a "likkle two-track reel-to-reel [recorder] that come in a suitcase, him did have one like that him used to put on a stool".[21] As Philip Smart states, "He (Tubby) didn't buy his first console, he built it - built the chassis and everything, put all the components together" (qtd. in Katz 2003: 182). By 1969, the carport bathroom had been converted into a voicing booth and the studio began to be used for voicing as well as mixing (Pat Kelly in Katz 2003: 183).

The greatest changes were to occur after Bunny Lee helped Tubby secure the aforementioned four-track mixing-board from Dynamic Sound. It was at this time that a surge of Kingston's most creative producers began "beating a path to Tubby's door" (ibid.).[22] From 1973 to 1974, the popularity of Tubby's dubs were such that the engineer began to receive credit on the record label; "Records bearing a B-side credit like 'King Tubby's Version' or 'Drum & Bass by King Tubby's' were often selling on the strength of these, rather than their official top sides" (ibid. 227; Hurford 1987: 95). "King Tubby, mixing engineer, had become a star in his own right" (Hurford 1987: 95).

King Tubby's skill on the mixing board is something that many producers and apprentices have commented on. As King Jammy, one of Tubby's most successful apprentices, states:

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[21] Singer/Producer Roy Cousins qtd. in Katz 2003: 183; 2000: 159.

[22] Barrow and Dalton give a good idea of the volume of traffic and material pumping through Tubby's studio over this period when they state: "Dub really became established with the series of Tubby-mixed dub sides that emerged in 1972-1974, principally on Lee Perry's Justice League and Upsetter labels, Glen Brown's Pantomine, Roy Cousins' Wambesi, U-Roy's own Mego Ann, Augustus Pablo's Hot Stuff and Rockers, Winston Riley's Techniques, Prince Tony Robinson's High School, Bunny Lee's Jackpot and Carlton Patterson's Black and White" (2001: 232).

> King Tubby's have a style that nobody else have, so producers used to cling to him, but apart from his style, his mixing console had certain features that other didn't have. He had a high-pass filter built into the console with a slide, so when he was mixing a dub, he could swing the frequency from a low frequency to high and keep on swaying it. For his echo he used to use another four-track tape machine patched into the board so he always used a tape echo and could gauge it to any speed he wanted.
>
> (Jammy qtd. in Bradley 2002: 103)

King Jammy describes a similar process of modification in relation to Tubby's reverb unit:

> The reverb unit that we used to use there, it was a Fisher reverb, an' we change it to become a King Tubby and Fisher! The slides that we use to use, we change them from the original slides, because the mixing console was so old you couldn't get replacement parts. We use other models to incorporate in that console.
>
> (Jammy qtd. in Barrow and Dalton 2001: 233)

Michael Campbell, a.k.a. Mikey Dread, of *Dread At The Controls* is another apprentice of Tubby's who has much to say about Tubby's knowledge and equipment. Campbell describes the overwhelming wealth of literature, on subjects ranging from theories of sound to audio technologies, that Tubby would constantly work through. Campbell relates Tubby's generosity with such knowledge: "'Yo, Mikey, me 'ave a book for you', and he'd reach up and get down from offa his shelf some new book. Techniques of sound recording, audio technique, stuff like that" (Campbell qtd. in Bradley 2000: 319). Being university educated and holding electrical engineering qualifications of his own, Campbell had a good knowledge of electronics himself, but he was amazed by Tubby's commitment to learning. "I study at A-level and at the university and I never meet nobody who study like King Tubby" (Campbell qtd. in ibid.).

> The man invent a whole heap of things and don't get no credit. He made his first echo machine with two old tape recorders. He build spring-loaded switches for his sound effects, so it's pressure-sensitive and he can hit it hard or soft or slowly to get a different sound from each effect. . . in fact, not much of his equipment stayed the way it was when it came out of the factory. Such was his knowledge that if the man don't think a sound is like how he want it, he would go into the circuitry there and then and change it to create the particular effect that he want. His whole studio was custom made by King Tubby himself.
>
> (Campbell qtd. in ibid. 319-320)

It has been noted earlier that some of Tubby's earliest mixing work was for Lee Perry, appearing on Perry's Justice League and Upsetter labels in 1973 (Barrow and Dalton 2001: 232, 237). By this time, Lee Perry had already been pioneering the dub form "with bass-heavy instrumentals like 'Clint Eastwood' and 'Sipreano'", in addition to "some of King Tubby's earliest mixes on 7", including 'French Connection', 'Ipa Skank' and 'Dub Organiser'" (Barrow and Dalton 2001: 237). Aside from his trailblazing contributions to versioning over at Studio One in 1965 (Katz 2003: 166), Perry was also responsible for "proto-dub" instrumental sets such as *Cloak & Dagger*, released in 1972 (Barrow and Dalton 2001: 237). Lee Perry has indicated that it was at one of his drum and bass sessions that King Tubby was struck by the mixing possibilities of this process of production:

> GRAND ROYAL: How did dub come about?
> PERRY: Was sound system again, with Tubby's. Competition must be in the music to make it go. So Tubby used to come in the session because he liked my funny music and think it's magic, he loved magic. So him come see how we make the tracks. Today I record the bass and drum and tomorrow I record the rest, the keyboards. So he used to sit in my drum and bass session, and he looked at me and said, "Scratch this is crazy, we can make them just like that! You don't believe me? Alright, give me that tape". And he cut some Dub and carried it to the studio and Jesus Christ that was it! People go fucking crazy and then King Tubby's go BOOM! It was so big, that's why them kill him. Tubby would be a billionaire now. So them kill him before him become a billionaire!
>
> (Interview with Thomas Market in *Grand Royal* 2, 1995-1996: 69)

By late 1973, Tubby and Perry would together mix one of the first dub LPs, the outstanding *Blackboard Jungle Dub*[23] (Katz 2000: 177). Although there are a number of contenders for the title of first dub LP, *Blackboard Jungle Dub* "is certainly among the first, and remains as a classic and defining work of the genre" (ibid.). The first Jamaican issue of the album apparently consisted of only 300 copies, but "collected 14 of the hardest Upsetter dubs of recent months, mixed in true stereo with definite channel separation" (ibid.).

Another important patron of King Tubby's during this period was Bunny Lee. In addition to encouraging Tubby to begin voicing and mixing at Dromilly Avenue in the first place, Bunny Lee provided King Tubby with

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[23] Originally released as *Upsetter 14 Dub Blackboard Jungle* (Katz 2000: 177).

more material than any other producer throughout the early to mid 1970s (Katz 2003: 183; Barrow and Dalton 2001: 240-241). However, "Bunny Lee also had a qualitative influence on Tubby's style, for he encouraged him to mix in an ever wilder way. As Bunny once said to the dub master: 'Yes, Tubbs, madness - the people dem like it!'" (Barrow and Dalton 2001: 240). Barrow and Dalton go on to explain that:

> Tubby's mixes for Bunny sometimes came complete with sudden and momentous thunder effects (created by striking the reverb unit), the sound of the tape being rewound to build up tension, and either bass or the hi-hat being emphasized for almost intolerable periods. Indeed, the "flying cymbals" sound that drummer Carlton "Santa" Davis developed for Bunny Lee seemed made for Tubby's radical deconstructions.
>
> (ibid. 240-241)

Flying cymbals or "flyers", as it is also know, is a "mechanized high-hat" style of drumming "adapted from the 'Philly Bump' soul beat" (Katz 2003: 210). The "Philly Bump" was developed by the Philadelphia studio ensemble MFSB, whose song "The Sound Of Philadelphia" ("TSOP") served as the theme music for the popular American television series *Soul Train* (ibid.). Santa Davis recalls that the first song to use the flyers style of drumming was Johnny Clarke's "None Shall Escape The Judgement" in 1974 (ibid.). Davis explains that MFSB's drummer was one of his favourites, "and I said, 'Damn, let's try that in a reggae sound'" (Davis qtd. in ibid.). Davis initially used the flying cymbals as an introduction to "None Shall Escape The Judgement" but Bunny Lee was so impressed with the sound that he wanted it through the entire the song (ibid.). In fact, the drumming style became a definitive feature of practically every Bunny Lee production up until late 1975, when the dominance of flyers was dissipated by the new rockers sound, developed over at Channel One (Barrow and Dalton 2001: 163-164; Katz 2003: 217).

As Barrow and Dalton note in the excerpt above, the flyers' emphasis on the high end of the sound spectrum met with Tubby's imaginative use of sound manipulating technology most wonderfully. Michael Campbell further describes how Tubby's custom-made devices could be made to cater to specific styles of material, in this case, flyers:

> One thing he make, it name a high pass filter, and he use it 'pon the snare drum and the hi-hat so that it kinda splashes [Mikey makes a sort of squelching/hissing noise]. He use it all the

> time on Johnny Clarke's mixes. . . When Bunny Lee come up with that whole flying cymbal thing -- *tiisst . . . tiisst . . . tiisst . . . tiisst . . . tiisst . . . tiisst* -- Tubby a-mix it through his high pass filter and it cut certain frequencies and boost certain frequencies, so when it come from the hi-hat -- which is like the highest frequency you're going to hear in any mix -- the *whole octave* change in that mix.
>
> (Campbell qtd. in Bradley 2000: 320)

Tubby's treatment of the flying cymbals was so intense that one of his later apprentices, Overton H. Brown (a.k.a. Scientist), used to use it for testing sound system equipment (Katz 2003: 306). As a teenager, Scientist learned about electronics through his father's television and radio repair business (ibid.). At the age of sixteen, he began constructing sound system amplifiers and, in the process, discovered that Tubby's mixes were ideal for testing their performance (ibid.). "After you build an amplifier you need a record that is properly mixed with all the frequency range to be able to test how the amplifier is gonna perform" (Scientist qtd. in Barrow and Dalton 2001: 253). Scientist explains that, "I would build one and test it with instruments and everything would read normal, but when I test it with one of the mixes from Tubby's with that 'flying cymbal' and that crisp hit-hat the amplifiers go crazy -- it didn't look normal. Every time you play reggae through this thing it start freaking out -- overworked amplifiers" (qtd. in Katz 2003: 306). According to Scientist, it was this reaction to Tubby's excessive mixes that peaked his curiosity and drew him to work under Tubby in the late 1970s (ibid.).

From the mid to late 1970s, King Tubby eased out from behind the mixing board and increasingly delegated the work to his apprentices (Barrow and Dalton 2001: 241, 250). Both Scientist and Prince Jammy began "forging their own distinctive mixing sounds using the same equipment as Tubby" (ibid. 250). Further, both would be instrumental in ushering-in different aspects of the new dancehall sound in the late 1970s and early 1980s (ibid., 252-254; Lesser [1989] 2002).[24]

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[24] While posterity has granted a pivotal place to King Jammy, specifically his 1985 issue of Wayne Smith's "Under Mi Sleng Teng" for signaling "the beginning of a new [digital] phase" (Dalton 2002: 89), it was Scientist's mixes which initially pointed the way to early dancehall (Barrow and Dalton 2001: 279). Although Scientist used the same equipment as Tubby and his other apprentices, "he seemed to find parts of the board his mentor had not reached, creating a style that was far more stripped down than either Tubby or Jammy" (ibid. 252).

By late 1976, Prince (later King) Jammy was mixing most of Bunny Lee's productions for King Tubby (Barrow and Dalton 2001: 241). In 1979, Scientist would also burst onto the mixing scene after Jammy was late for a mixing session with dancehall pioneers (singer) Barrington Levy and (producer) Henry "Junjo" Lawes (Scientist in Katz 2003: 308).[25] Junjo Lawes was apparently reluctant to let the young Scientist, who was only nineteen at the time, mix his material (Scientist in Katz 2003: 308, 306). However, after hearing the result, Scientist quickly became Lawes' engineer of choice (Scientist in ibid.; Barrow and Dalton 2001: 254), and the relentless hammering minimalism of his Roots Radics'[26] mixes came to greatly define the early dancehall sound (Barrow and Dalton 2001: 279).

Before concluding the discussion of King Tubby, I would like to draw attention to one of his most shocking innovations, the explosive *thunderclap* effect. The thunderclap began to surface in Tubby's mixes at least as early as 1975, and has been noted in connection with his Bunny Lee releases (Barrow and Dalton 2001: 240). The effect was apparently created by physically striking the reverb coil, the force and speed of the strike determining how loud and severe the crash would sound (ibid.; Michael Campbell in Bradley 2000: 319-320).[27] Generally, the thunderclap was not even used percussively. Thunderclaps break-out

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[25] "Dancehall pioneers", like all "pioneers" referred to in this work, is not meant to suggest that the innovation in question can be limited to these individuals alone. No innovation can be pried from the broader climate of musical exchange which characterized the creative dynamic of this relatively small community of talent. Junjo Lawes was brought into the business by "proto-dancehall" heavyweight Linval Thompson (Thompson in Katz 2003: 305, 275), who is also certainly deserving of the title "pioneer". And this is exactly the issue: also warranting mention are fellow proto-dancehall stars Johnny Clarke and Al Campbell (ibid. 275), not to mention Sugar Minott, Johnny Osbourne and Freddy McGregor's contributions to the new form over at Studio One (ibid. 230). On the engineering side of things, in addition to Scientist, Katz notes the influence of a younger generation of engineers that were also helping to shape the new sound at Channel One (ibid. 305). This "fresher crew of engineers" better understood the needs of dancehall audiences, and included Anthony "Soljie" Hamilton, drummer Stanley "Barnabas" Bryan, "Crucial" Bunny Graham (a.k.a. Bunny Tom-Tom) and Lancelot "Maxie" McKenzie (ibid.).

[26] Bassist Flabba Holt (b. Errol Alexander Carter) and guitarist Bingy Bunny (b. Eric Lamont) formed the nucleus of The Roots Radics session band, which also featured keyboardist Wycliffe "Steelie" Johnson and drummer Lincoln "Style" Scott most prominently among its shifting lineup of musicians (Flabba Holt in Katz 2003: 303-304).

[27] For example, by tempering the strike, Tubby could get sound effects that ranged from gun shots to a full-out lightening storm (Steve Barrow, sleeve notes, *King Tubby's Special 1973-1976: King Tubby, The Observer Allstars and the Aggrovators*, Trojan, 1989).

suddenly and violent, just as in a lightening storm, hence the term. For example, this startling effect can be heard crashing throughout Tubby's intense version of Horace Andy and John Holt's "A Quiet Place", "King Tubby's - A Quite Place Dub" (Trojan/Sanctuary [1975] 2003).[28]

This effect was one of Tubby's most radical expressions. Unlike the use of multi-track technology, the function of which becomes reversed in dub re-mixing, Tubby's treatment of the reverb coil cut through function on a completely different axis. One could say that function is hit on a oblique angle. The significance of this treatment becomes all the more pronounced when one considers King Tubby's reported fastidiousness. Dusty Hughston states that "His neat appearance was legendary, from his immaculate foot wear, to his revered amps polished like the family silver. He was even rumored to have traded crumpled bank notes for crisp new ones, claiming they offended his dignity".[29] As Michael Campbell confirms:

> Tubby was a man who was very neat. Everything about him had to be in order. His workshop, his studio. . . The chrome on the valves and the fronts of the amplifiers always highly polished. . . Him dress up good, too. Every day he come to work looking *crisp*, him clothes always well press. . . you couldn't take your shirt off in there if you didn't have a T-shirt or a singlet on; the man didn't like no bare chest in his studio. But his shoes. . . *bwoy*, King Tubby's shoes, *well clean and shiny*. Everyday. And it difficult to keep your shoes clean in Jamaica, so much dust. He always stopping if he see something on his shoes. . . if he look down and see a speck, he reach back, pull out him hanky and dust it off.
>
> (Campbell qtd. in Bradley 2000: 321)

For a man who would go to such effort to keep his shoes and equipment so meticulously polished, the decision to strike a piece of equipment as sensitive as a reverb unit was no act of carelessness. Tubby was surely well aware of the fact that a reverb coil is meant to translate sound

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[28] Other releases that employ this effect include King Tubby's "Bag A Wire Dub" (*King Tubby & Friends: Dub Like Dirt 1975-1977*, Blood and Fire, 1999), the Aggrovators' "Harder Version" (*Johnny In The Echo Chamber - The Aggrovators: Dubwise Selection 1975-1976*, Attack Records, 1989) and King Tubby & Santic Allstars' "Shooter Dub" (*2 Heavyweight*, Blood and Fire, 1997), the latter using the effect more sparsely, but no less effectively, to punctuate the song's serious theme. "A Serious Version" and "Crisp Version" (*King Tubby's Special 1973-1976: King Tubby, The Observer Allstars and the Aggrovators*, Trojan Records, 1989) also feature the thunderclap prominently, particularly the explosive introductory section in "A Serious Version" (a version of Horace Andy's "Skylarking").

[29] Liner notes, *King Tubby - Dub Conference*, 2B1 Records, 2002.

through minute vibrations in the air, and that striking it directly was a violent disruption of this function.

Without reading too much into this practice, it certainly seems that Tubby's treatment by authorities around this time played some role in such a radical expression. In 1975, Tubby had witnessed the violent destruction of his sound system by police gunfire for the second time, and considering how upset he apparently was about it (Philip Smart in Katz 2003: 217) this experience likely made a stark impression on him. Unfortunately, as Lee Perry alluded to earlier, King Tubby would fall victim to gun violence once again in 1989, however this time the encounter would be fatal (Barrow and Dalton 2001: 254). In the early morning of February 6, 1989, King Tubby was gunned down outside his home (ibid.). Tubby had just finished the lengthy process of upgrading his voicing and mixing studio to a state of the art 32-track facility a few years earlier (ibid.; Hurford 1987: 97). "The killer has never been found" (Barrow and Dalton 2001: 254).

SECTION V
LEE PERRY'S BLACK ARK STUDIO

The last facility to be considered is Lee Perry's Black Ark studio. By the mid-late 1970s, Perry's Black Ark productions were reaching farther and farther off the Jamaican commercial mainstream map (Katz 2000: 313-314). Unlike King Tubby, whose apprentices would become central in creating the popular new dancehall sound, Lee Perry's work in the late 1970s ventured into territory that diverged considerably from the trends of the time (ibid.), and indeed trends of the future. In many ways, Perry was a forerunner for which there was no successor.

In 1977, the explosion of dub LPs was such that "virtually every producer had his or her own dub album(s) on sale or were about to release them" (Barrow and Dalton 2001: 244). Despite his pioneering contributions to the success of this format, Lee Perry had basically withdrawn from the dub LP market after the release of his excellent *Super Ape* in 1976 (ibid. 238). He would continue to mix dubs for the flip-sides of his singles, and dub-mixing techniques would bubble (or *erupt*) through

his material for the remainder of the decade (ibid.). However, these techniques tended to become an integral element of his productions, rather than a specialized product[30] (ibid.).

In the time leading up to the construction of the Black Ark in 1973, Perry had released a number of increasingly experimental works. Two releases in particular seem to stand out during this period. In 1970, Lee Perry released "Kill Them All"[31] as a U.K. single on the Trojan label. Laurence Cane-Honeysett states that "Kill Them All" was "the most experimental release to be featured on the label to date, with the producer's vocal interjections bridging three different rhythms spliced together"[32,33] However, the use of this rhythm splicing method in "Kill Them All" would seem tame in comparison with its use in "Cow Thief Skank"[34] (1973) a few years later.

By the time of Black Ark's completion, Perry had also made a bizarre series of *skank*-themed "dance" singles (Katz 2000: 169). Most of this informal series was mixed over at King Tubby's studio, and included such titles as "Bucky Skank" (1973), "IPA Skank" (Trojan, 1973), "Bathroom Skank" (1973) and of course the groundbreaking "Cow Thief Skank" (Katz 2000: 169, 177).[35] Similar to "Kill Them All", the backing rhythm of "Cow Thief Skank" had been made by splicing the tapes of several previously recorded instrumental tracks together (ibid.). Whereas "Kill Them All" cut between rhythms in a manner closer to that

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[30] As is the case in the dub LP format, for example.

[31] "Kill Them All" can be found on *The Complete UK Upsetter Singles Collection: Volume 2*, Trojan, 1999.

[32] Barrow and Dalton state that this splicing method was used in Joe Gibbs' "News Flash, Versions I & II" (1970) as well, which was also one of the first records to use the word "version" in its title (2001: 230-231). Although this release is mentioned in a section which begins by noting the undervalued contributions of Lynford Anderson, it is not clear if Anderson actually mixed the "News Flash" versions (ibid. 229-231).

[33] Cane-Honeysett, sleeve notes, *The Complete UK Upsetter Singles Collection: Volume 2*, Trojan, 1999.

[34] "Cow Thief Skank" can be found on *Lee Perry The Upsetter: Essential Madness From The Scratch Files*, Metro/Union Square Music, 2000.

[35] "Bucky Skank" can be heard on *Lee Perry: Jungle Lion*, Demon Music Group Ltd., 2000, while "Bathroom Skank" can be found on *Lee Perry The Upsetter: Essential Madness From The Scratch Files*, Metro/Union Square Music, 2000.

of a medley[36], "Cow Thief Skank" managed to create the impression of a relatively seamless new entity.

One of the first things that strikes one about this toasting duet between Perry and Charlie Ace, aside from the quirky chugging rhythm, is the mooing cow introduction and refrain.[37] However, "it is the *rhythm* of 'Cow Thief Skank' that is truly noteworthy", as Katz points out:

> As seen more readily on the version side, "7 and 3/4 Skank", "Cow Thief Skank" is a composite creation, spicing together three different Upsetter rhythms. . . It begins with the rhythmic introduction to the Inspirations' "Stand By Me", one of the earliest rhythms the Upsetter created as an independent producer, before alternating between dubbed-out portions of the "Better Days" rhythm and a cut of "Musical Transplant". The cut-up technique employed by Perry on this tune was never really adapted by others in reggae, and pre-dates similar techniques that later appeared in new wave and hip-hop by many years - perhaps with a considerable higher degree of finesse than shown in most of the material created in other genres.
>
> (ibid.)

The first commercially available sampler would not even be produced until 1978! Although Perry had pioneered a technique on which entire genres would later be based, his creative impatience would quickly propel him to the next phase in his prolific series of innovations. The facility that would give Perry's experimental side greatest free reign for exploring these innovations was the Black Ark studio, the establishment of which will be considered in the following.

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[36] Particularly after the first splice.

[37] This mooing is not to be confused with the mooing sound that would increasingly surface in Perry's Black Ark productions in the late 1970s, which was created by singer Watty Burnett by projecting "a sound with a music in my throat" (Burnett qtd. in Katz 2000: 296) through a cardboard aluminum-foil roll (ibid.). In "Cow Thief Skank", Perry and Charlie Ace moo in unison, and due to the use of reverb, the mooing takes on eerie quality, having the odd effect of making the song feel funny and unnerving at the same time. The lyrics were aimed at Niney, who is referred to cryptically as Moccasin, a name that Perry used to deride Niney with at the time "due to his sporting of unfashionable footwear" (Katz 2000: 169). "Legend has it that Scratch learned Niney had stolen a cow in his youth and cut the tune to ridicule him, alluding to the notion that Niney had his finger and thumb chopped off as a result of the robbery" (ibid. 169-170). Niney explains that these kinds of musical jousts were taken in good stride at the time, and were part of a healthy climate of competition (ibid. 170). "In those days, we laugh at those things, and if we want to make back a song on each other we make it, but nowadays youth can't do that. They want to fire their gun in your face" (Niney qtd. in ibid.).

Vinyl Constraints and the Construction of the Black Ark

Since the release of "Dreamland" in 1970, Perry had felt increasingly confined by the power exerted by the three biggest recording studios on the island: Ken Khouri's Federal, Byron Lee's Dynamic Sound and Coxsone Dodd's Studio One (ibid. 124-125). Byron Lee and Ken Khouri had exclusive control of the manufacture, distribution and exportation of records (ibid. 1996: 12), and upcoming producers like Perry "were at the mercy of these industry giants" (ibid. 2000: 125). Even more frustrating, this vinyl monopoly was used to reinforce the power of the political and economic elite. Katz states that both Byron Lee and Ken Khouri were closely aligned with "those who held the nation's political and economic power - particularly Byron Lee, who had been brought into the business by Edward Seaga. . . If an independent producer was getting too big for their britches, the giants would not hesitate to exercise their power and squash the challenger like a bug" (ibid.). "Perry was growing gradually more resentful of the control they exercised over the aspirations of ghetto promoters like himself" (ibid.), and by 1973, he had resolved to build a studio in the backyard of his suburban home.

After the success of "People Funny Boy" in 1968, Perry and his family had moved from downtown Kingston to the suburb of Washington Gardens (ibid. 69). Perry purchased a three bedroom house at 5 Cardiff Crescent and it was there that Perry began the construction of the studio which came to be known as the Black Ark (ibid., 163). Guitarist and singer Bobby Aitken (brother of Laurel Aitken) was hired as the chief contractor (ibid.). Much of the masonry was done by Bobby Aitken himself, and Leonard Dillon of the Ethiopians did the patterning on the cement walls of the compound (ibid.). Although the wiring was installed by Errol Thompson, Perry insists that he alone could make it function: "Not even Errol Thompson who build the studio can't do nothing in there", states Perry, adding that, "Even the great King Tubby come in there and don't know what to do" (qtd. in ibid. 181).

Early productions at the Black Ark had a minimalism that paralleled its rudimentary range of equipment and instruments (Katz 2000: 240). The studio was constructed as a four-track facility, with Perry using a quarter-inch four-track Teac 3340 to record new material and a quarter-

inch two-track to mix down (ibid. 180). In the 1960s and 1970s, the standard practice in Jamaica was to have the vocal isolated on one of the channels when played on a two-track machine (ibid.). As Katz explains, this practice made it easy "to 'bounce' the rhythm track onto one or two tracks of a four-track tape and then overdub additional instrumentation or voice onto the remaining tracks, and this is mostly the method Perry was employing in the studio's early days" (ibid.). In fact, this method became an important element in the murky "underwater" sound that the Black Ark became most associated with, and famous for, in the latter half of the 1970s. Barrow and Dalton state that:

> Like so much cutting-edge reggae, the Black Ark sound exemplified the Jamaican approach of making maximum demands of minimal resources. Sound textures that were unique anyway were developed further through working with four-track equipment, and the necessity of dumping completed tracks onto one track so as to free them for further overdubbing. This meant a loss of what would normally be thought of as "sound quality" every time it occurred [due to the principle known as "generational decay"], but [in this case it] contributed to the incomparable feel of the Black Ark sound.
>
> (2001: 183)

Even after Island Records' founder Chris Blackwell bought Perry a half-inch eight-track Tascam recorder in 1978, Perry continued to opt for the channel "bouncing" method he had developed in connection with the limits imposed by his low-tech four-track equipment (Katz 2000: 321, 341).

In terms of the Black Ark's mixing console, Perry at first installed an Alice board, which he had purchased during one of his trips to England (ibid. 180). "I don't think my mixer, the Alice, cost me even £35", states Perry, "it was for radio station balancing or maybe like a PA system. You couldn't start a studio with that, but we were using them. Those were domestic machines; they weren't professional machines, they were only toys" (qtd. in ibid.). By 1975, the success of Junior Byles' "Curley Locks" (mixed on the Alice console) would help Perry secure one of the Black Ark's most important pieces of equipment: a Soundcraft mixing-board (ibid. 208-209). This console was "far more sophisticated than the Alice" board, enabling Perry to refine the sound while moving away "from the minimalism that characterised the studio's sparsely equipped early days" (ibid., 240). A drum booth was also constructed around this time,

giving the Black Ark a "readily identifiable" drum sound that would be "instrumental in establishing the studio's reputation in Jamaica" (ibid. 209).

In 1976, two other influential devices were added to the Black Ark arsenal: a Mutron phaser effects unit and a Roland Space Echo tape delay machine (model RE 201) (ibid. 240-241). In addition to the dense, spongy quality that the Mutron phaser introduced, Perry's Black Ark sound was slowing down and becoming heavier (ibid.), as can already be heard on Bunny and Ricky's "Bushweed Corntrash" and its dub "Callying Butt"[38] by 1975.[39] The Mutron phaser had been purchased by Perry after seeing a demonstration model in New York while on a business trip in 1975, and it became the first of its kind to be used in Jamaica (Katz 2000: 241). The Roland Space Echo, on the other hand, was used most prominently on "vocal mutations for dub tracks, allowing a message or certain words or syllables to echo seemingly to infinity, as previously demonstrated on [Doctor Alimantado's] 'Best Dressed Chicken In Town' [1974]" (ibid.). In Perry's hands, the Mutron phaser and Space Echo would greatly deepen the already experimental sound of the Black Ark (ibid. 241).[40]

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[38] Both "Bushweed Corntrash" and "Callying Butt" can be found on *Lee Perry: Jungle Lion*, Demon Music Group Ltd., 2000.

[39] Lee Perry by no means halted attempts at more commercial releases at this time. For example, Susan Cadogan's *Hurt So Good* LP (Trojan, [c. 1975] 1995) was clearly produced with a wider popular market in mind. Despite breaking into refrains of "Here Comes The Bride" repeatedly in "Congratulations", the album manages to capture that peculiar mix of "pop and dread" which Perry had such a talent for. Perry has a way of mixing these two elements together in such a manner that frustrates the expectations of both sides.

[40] This 1976 shift in the Black Ark sound is read by Lee Perry's biographer David Katz not only in terms of the exciting use of these new technologies, but also as an expression of the spiraling turbulence of the times (ibid. 240). Remember, 1976 was the election year in which Michael Manley was forced to call a ten month State of Emergency due to the terrifying wave of party instigated gun violence and bloodshed (ibid. 2003: 234-235). For instance, Katz describes how the ponderous "sound that Perry started to conjure up in the Ark in 1976 had the quality of aural molasses, undercut by seething tension and subdued urgency - dread echos of what would prove to be a most chaotic period in Jamaica's turbulent history" (2000: 240).

The Black Ark: Constricted Oversees Outlets, Mounting Pressure and Collapse

By the end of 1978, "Perry was under a tremendous amount of pressure from a variety of sources and had reached a breaking point" (Katz 2000: 322). Much of this pressure involved "increasingly threatening financial demands" (ibid.). These demands came from a variety of sources, including disgruntled musicians, studio idlers, and members of the Boboshanti (a.k.a., the Niyabinghi Theocracy, a Rastafarian sect) (ibid.).[41] Singer Earl Sixteen notes that, in addition to the weekly protection money demanded by the feared Spanglers gang, police and soldiers had become a "regular menacing presence" at the Black Ark (Katz 2000: 322).

The withdrawal of the support of Island Records made these pressures even harder to bear. It was Island that had previously given Perry the greatest exposure outside Jamaica, "helping to establish him as a cult figure with an entirely new audience" (ibid. 314). The company's reluctance to handle Perry's material became particularly apparent after Island's founder, Chris Blackwell, refused to issue the now classic *Heart Of The Congos* LP in 1978 (ibid. 308). This was a puzzling decision (ibid. 309). Not only was the set "arguably the strongest album Lee Perry ever produced with a vocal group", Island had already issued publicity for the album's upcoming release that April (ibid. 282, 308). Although the master tape which Perry originally presented to the company had been recorded at low-fidelity slow speed on a re-used four-track tape, and had Fay Bennett's "Big Cocky Wally" present on the other two channels, it is unclear whether this was a factor in Island's decision not to release the album (ibid. 308-309). The Congos' Roy Johnson and singer Max Romeo both felt that their material had been intentionally held back by Island in

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[41] Singer Max Romeo relates that: "He had a Rastafarian church he started with a bunch of dreads. . . but these dreads fall out of grace, so he wanted to keep them off him. He put a pound of pork on his antennae, and rode around town until it rotted and maggots were falling from it. . . " (Max Romeo qtd. in Katz 2000: 325).

order to focus attention and resources on the "Marley empire" (Max Romeo qtd. in ibid. 309).[42]

However, the final straw came when Island refused to release *Roast Fish Collie Weed And Cornbread* and *Return Of The Super Ape* that same year (ibid. 314). Perry was quite proud of material featured on these two LPs, and issued them both in Jamaica shortly after they were completed (ibid.). These two sets were highly original works, "and mark a high point of Lee Perry's career as a self-produced solo artist" (ibid. 313). They extend the dense, layering style developed in *Super Ape* into even more experimental directions, with *Return Of The Super Ape*, in particular, moving into jazz territory (ibid.). His commitment to experimentation had become somewhat of an obstacle to mainstream popularity in his native land[43] and, without the support of Island Records, the overseas outlet to his largest market had basically been strangled (Katz 2000: 313-314).

The details of the subsequent decline and destruction of the Black Ark are as interesting as those of its construction. (For a more in depth account of these events, the interested reader is referred to Appendix I.) The darker side of this collapse is that it seemed to mirror the emotional turbulence and breakdown which Perry was experiencing at the time. By 1979, this breakdown would push Perry into a new phase of unprecedented erratic and bizarre behavior (ibid. 319). He became obsessed with the materiality of written language, particularly in its perceived demonic manifestations, and began incessantly performing

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[42] As Roy Johnson relates, "Leslie Palmer used to work in the A & R Department in Island, so he know what's going on. He said to me, 'When that album [*Heart Of The Congos*] came from Jamaica, we have meeting for a month straight about who we was to put the promotion on: Bob Marley or the Congos'" (Johnson qtd. in Katz 2000: 309). Max Romeo similarly remarks: "I realize that they [Island] sign all the artists that was a threat to Bob Marley and put them on the shelf so they can send the King ahead and crown the King. We were all victims, all sacrificed to make the Marley empire, but we thank God for it because the world would hear reggae music" (Max Romeo qtd. in ibid.).

[43] As David Katz succinctly explains, since the middle of the 1970s, "Jamaica's biggest hits had been based on re-cuts of classics from Studio One and Treasure Isle; Bunny Lee's early dominance in this do-over field with his Aggrovators was later superseded by Channel One re-cuts with the Revolutionaries, who in turn gave way to a series of re-done hits created at Joe Gibbs. . . Through it all, Lee Perry avoided the trend, preferring to stick with originals or sometimes mutate an American standard; on the few occasions that he [re]did. . . a Studio One hit, he would completely restructure. . . though he had a fierce reputation as a sound originator and was noted as the most vocal of producers espousing the Rastafari cause, his productions were simply not ramming the dancehalls or generating the sales of his chief competitors. . . " (2000: 314).

linguistic exorcisms (ibid. 319, 328). The Black Ark studio was similarly transformed. Not unlike his more drastic dub de-constructions, Perry had stripped down the studio to a near non-functional level. In addition to the equipment and tapes that lay scattered across the floor, he had torn down shelves, covered the walls with declamatory graffiti and "ugly green and shit-brown paint", and an assortment of objects, including records, metal stampers and tapes, had been glued to the walls inside.[44]

Early one morning in the summer of 1983, despite repeated attempts to resurrect the Black Ark -- one of which involved a fascinating reconstruction based on alchemistic principles (see Appendix I) -- it became clear that the studio's glory days were forever over. A blaze tore through the studio in what Lee Perry later called "a return blessing through fire".[45]

Partly due to conflicting accounts from Perry himself, mystery surrounds the exact cause of the blaze (Katz 2000: 363). "As with speculations on Lee Perry's sanity, whether he torched the Black Ark has been fiercely debated" (ibid.). What is certain is that police held Perry in Hunt's Bay Jail for several days while they launched an investigation into the cause of fire, only to release him without charge due to lack of evidence (ibid. 365).

Inheritors of Lee Perry and the Black Ark

In one sense, the fall of the Black Ark marks a clean break from the exciting new developments taking place in the sound system around the turn of the decade. Yet despite Perry's trajectory away from sound system popularity in the last years of the 1970s, the formation of the dancehall sound was in part made possible by a number of his pioneering techniques. The minimalism of Perry's bass-heavy proto-dub instrumentals resonates strongly with that of dancehall's beefy raw rhythms. Perry was also among the first producers to cultivate the

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[44] Henry Targowski, "Lee Perry: Genius, Madman, Magician", *Vinyl* 7, 1981: 14-15; Katz 2000: 329)

[45] Perry qtd. in interview with Steve Barker and Roger Eagle (recorded for BBC Radio Lancashire's "On The Wire" with Steve Barker in 1984, 1986 and 1991), *Lee Perry: "Divine Madness ... Definitely"*, Pressure Sounds, 2001.

deejay form on record with his highly radical and commercially unsuccessful production of U-Roy's "Rightful Ruler" in 1969 (Katz 2000: 92).

At the Black Ark, Perry also developed the practice of live equalization, "with instruments also subjected to heavy phasing and echo effects while they were being recorded" (Katz 2003: 311). It was Scientist's introduction of these live equalization techniques over at Studio One, shortly after his departure from King Tubby's, that imparted a fresh, high fidelity feel to Coxsone Dodd's classic rhythms (ibid.). Combined with tight, modernized overdubbing from Freddy McGregor (on drums, Syndrums and cymbals), bassist Bagga Walker and keyboardist Pablove Black, these techniques provided the basis for a resurgence of Studio One hits, most notably, Sugar Minott's "Oh Mr DC" (1979) and Michigan and Smiley's "Nice Up The Dance" (1979) (ibid. 309-311). As Scientist recalls:

> When I went down there [to Studio One] I started to point out a lot of problems with the equipment, and how Mr Dodd wanted us to record didn't really sound right. Back in those times everybody was trained to record flat - you don't record with EQ. It was taught that you EQ afterward. So I. . . recorded with EQ, and the sound with Sugar Minott and Michigan and Smiley, you started to get a crispness to it. Mr Dodd would go crazy! He thought we was trying to sabotage something. Bagga Walker and the rest of the musicians convinced Mr Dodd that them rather [prefer] that sound, so everybody started to do away with flat recording.
>
> (Scientist qtd. ibid.)

As Scientist explains, such was Dodd's paranoia that "After a time, Mr Dodd brought up this scenario [that] they [King Tubby et al] send you [Scientist] down here to spy. . . Mr Dodd figured that everybody wanted to steal the secret of his sound" (Scientist qtd. in ibid. 310-311).

Another Black Ark innovation that would later be incorporated into the further development of dancehall was Perry's introduction of the drum machine, a Conn Rhythm Box drum machine, according to Ian McCann.[46] For example, on songs like "Congoman" (*Heart Of The Congos* [1977]), the relentless mechanical beat can be heard "ticking along at a breakneck pace".[47] This mechanistic style would eventually become most

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[46] "I Am The Dub Organizer And Not the Dub Miser" in *Mixmag*, March, 1997 <http://www.upsetter.net/scratch/mixmag0397.htm>:1.

[47] Richard Henderson, "The Congos: Heart of the Congos", *The Beat*, vol. 15, no. 1, 1996: 61.

pronounced in the dancehall era, especially with the introduction of "digital" rhythms, which exploded on the scene with King Jammy and Wayne Smith's "Sleng Teng" rhythm in 1985 (Lesser 2002: 30-43). Closely connected with this move into proto-digitalization, Perry's splicing practices of the early 1970s foreshadowed the sampling approach that has since become the foundation of nearly all beat-driven music. Having outlined some of the more influential techniques pioneered by Perry before and during his time at the Black Ark, one last theoretical element associated with Perry's mixing work remains to be addressed.

Dub Fragmentation:
Lee Perry's Phoneme-Dropping
and Walter Benjamin's Baroque Fragment

Lee Perry's idiosyncratic dub-mixing style has been commented on by a number of authors. Steve Barrow and Peter Dalton have noted that one of Perry's "trademark" techniques involved dropping a vocal fragment -- often as short as a half-syllable and drenched in heavy echo -- into the mix, as a kind of exclamation mark (2001: 238). The effect is quite powerful and difficult to describe; imparting a surge of crisis, yet without offering any definite direction as to its cause or potential solution. It is this shocking technique that initially inspired the theoretical thinking around which this thesis was built. Over time, this impetus developed into an analysis of broader patterns, such as the international spread of technology as encountered at the local level and the political implications of these kinds of movements. However, the theory of the dub fragment, provoked largely by Perry's idiosyncratic mixing-style, provided the most basic theoretical building block and has remained at the core of this project's attempt to understand the significance of dub-mixing.

No other theorist has been as instrumental to this conceptualization of the dub fragment as Walter Benjamin. Like many of the theorists considered in this work, Walter Benjamin allocates a special place to technology in social change. Benjamin is especially interested in the ways in which "technology has subjected the human sensorium to a

complex kind of training"[48], what he calls a "deepening of apperception" elsewhere[49]. In "The Work of Art in the Age of Mechanical Reproduction"[50], he considers the profound re-organization which the human sensorium has undergone in the age of mechanical reproduction.

He explains that two related processes occur when an object enters the realm of mechanical reproducibility: (1) "a plurality of copies" is substituted for "a unique existence", detaching "the reproduced object from the domain of tradition", and (2) "in permitting the reproduction to meet the beholder or listener in his own particular situation, it reactivates the object reproduced", enabling "the original to meet the beholder halfway" (1968: 220-221). Perhaps most importantly, "These two processes lead to a tremendous shattering of tradition" (ibid.). "Both processes", notes Benjamin, "are intimately connected with the contemporary mass movements" (ibid.). It is the masses' encounter with mechanical reproducibility that has accordingly "produced a change in the mode of participation" (ibid. 239): "The adjustment of reality to the masses and of the masses to reality is a process of unlimited scope, as much for thinking as for perception" (ibid. 223).

For Benjamin, the most powerful agent in this shattering of tradition is the medium of film (ibid. 221-222). The revolutionary potentials of film stem largely from "its tendency to promote the mutual penetration of art and science" (ibid. 236). In his description of the effects of film on human sense perception, older realities are exploded and the previous semblance of unity shattered:

> By close-ups of the things around us, by focusing on hidden details of familiar objects, by exploring commonplace milieus under the ingenious guidance of the camera, the film, on the one hand, extends our comprehension of the necessities which rule our lives; on the other hand, it manages to assure us of an immense and unexpected field of action. Our taverns and our metropolitan streets, our offices and furnished rooms, our railroad stations and our factories appeared to have us locked up hopelessly. Then came the film and burst this prison-world asunder by the dynamite of the tenth of a second, so that now, in the midst of far flung ruins and debris, we calmly and adventurously go traveling. With the close-up, space expand; with slow motion, movement is extended. The enlargement of a snap-shot does not simply render more precise what in any case was visible, though unclear: it reveals entirely new

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[48] "On Some Motifs in Baudelaire", *Illuminations*, trans. Harry Zohn, ed. and introd. Hannah Arendt, New York: Schocken Books, 1968: 175.

[49] "The Work of Art in the Age of Mechanical Reproduction", ibid. 235.

[50] Or more faithfully translated, "The Work of Art in the Age of its Mechanical Reproducibility".

> structural formations of the subject. So, too, slow motion not only presents familiar qualities of movement but reveals in them entirely new ones. . .
>
> (ibid.)

It is precisely these kinds of new structural formations that seem to be occurring in the encounter with multi-track technology[51]; older realities are shattered in the dub-remix, the fragments of which become the basis for new modes of expression, understanding and experience. The ability to isolate and amplify hidden details, or aspects that would normally escape our attention, also seems to resonate strongly with the case of dub.

However, the work that provides the greatest insight into this new sensibility is "Allegory and Trauerspiel", found in Benjamin's dissertation on *The Origin of German Tragedy* ([c.1925] 1977).[52] Benjamin's aim here is to show that allegory, as an essential component of baroque literature, is not simply "a playful illustrative technique, but a form of expression, just as speech is expression, and, indeed, just as writing is" (ibid. 162). One of the most powerful tools in this examination is Benjamin's formulation of the baroque theory of the fragment. "Allegories", he explains, "are, in the realm of thoughts, what ruins are in the realm of things" (ibid. 178). "That which lies here in ruins, the highly significant fragment, the remnant, is, in fact, the finest material in baroque creation" (ibid.).

Part of what makes this theory of the fragment so interesting is its connection with the spread of a new technology; namely, the introduction of the Gutenberg printing press around the middle of the fifteenth century. Benjamin does not emphasize this connection between fragmentation and mechanical reproducibility as much as he would in later works, but a number of references suggest that it is already in circulation. For example, he refers to the "extreme character of the typographical arrangement" in baroque literature (ibid. 175-176) and states that "It is

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[51] Paralleling the centrality of contemporary mass movements in Benjamin's description of this new mode of reception, it has been previously noted that: "*the practices from which the dub-version emerges are about a "peripheral" mass encounter with multi-track recording* (via the sound system-recording studio circuit)" (p. 48).

[52] My thanks to Professor Dawn Morgan for introducing me to this work, particularly Benjamin's ideas on the baroque fragment.

perfectly clear that this fragmentation in the graphic aspects is a principle of the allegorical approach" (ibid. 186). He later adds that "The printers, and indeed the writers of the baroque, paid the closest possible attention to the pattern of the words on the page" (ibid. 215). For example, Daniel Casper von Lohenstein, credited with having created baroque tragedy in Germany[53], is said to have "practiced 'the inscription of the engraving. . . in its printed form, on the paper with his own hand' [Müller qtd. in Benjamin 1977: 215.]" (ibid.). "And so the age was not entirely without some sense of those comprehensive relationships between spoken language and script, which provide the philosophical basis of the allegorical, and which contain within them the resolution of their true tension" (ibid.).

However, without getting too deeply into the discussion of the allegorical, there is one passage in particular that seems to epitomize the significance of the baroque fragment in a way that also strikes at the heart of the dub fragment. "The language of the baroque", Benjamin explains, "is constantly convulsed by rebellion on the part of the elements which make it up" (ibid. 207). This convulsion and rebellion leads to rupture and fragmentation: "word, syllable, and sound are emancipated from any context of traditional meaning and are flaunted as objects which can be exploited for allegorical purposes" (ibid.). The significance of this fragmentation becomes nowhere more apparent than in the Herod-drama of Pedro Calderón de la Barca (b. 1600) (ibid.).

In this work, Mariamne, the wife of Herod "catches sight of the fragments of a letter" written by her husband (ibid.). This letter, in its entirety, contains orders that Mariamne should be killed in the event of Herod's death to protect his allegedly threatened honour. Mariamne, however, confronts only a few isolated fragments of the torn-up letter lying on the ground. The first three words which meet her are "Death", "honour" and "Mariamne" and she is immediately taken aback. For as she states, "much is said in these three words" (ibid. 208). Although the totality of the original letter is destroyed, the fragments still convey an ominous meaning:

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[53] The Columbia Electronic Encyclopedia® Copyright © 2005, Columbia University Press, http://columbia.thefreedictionary.com/Lohenstein,%20Daniel%20Caspar%20von .

> Even in their isolation the words reveal themselves as fateful. Indeed, one is tempted to say that *the very fact that they still have a meaning in their isolation lends a threatening quality to this remnant of meaning they have kept.* In this way *language is broken up so as to acquire a changed and intensified meaning in its fragments.* With the baroque the place of the capital letter was established in German orthography. It is not only the aspiration to pomp, but at the same time the disjunctive, atomizing principle of the allegorical approach which is asserted here. . . In its individual parts fragmented language has ceased merely to serve the process of communication. . .
>
> (ibid.-emphasis added).

Benjamin's implicit explanation of this process of intensification goes something like this: as emotional intensity increases, so does the fragmentation of dialogue; feeling swells-up, but then encounters (linguistic) meaning, breaking-off "in the middle of the process of resounding, and the damming up of feeling, which was ready to pour forth, provokes mourning" (ibid. 209). Indeed, for Benjamin, allegories, like ghosts, "are manifestations from the realm of mourning" (ibid. 193). "In all mourning" he adds, "there is a tendency to silence, and this [is] infinitely more than [an] inability or reluctance to communicate. The mournful has the feeling that it is known comprehensively by the unknowable" (ibid. 224).[54]

This notion of an intensification through fragmentation, particularly in the sudden ruptures of sound and silence, is more than hinted at by Katz in a number of instances. For example, in his description of Perry's *Revolution Dub* LP, released in 1975, he notes Perry's tendency to trap "vocal snippets in a type of freeze-frame echoing action, with one word or syllable appearing from nowhere to echo over a dub's muted form"

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[54] This rupture into silence is also powerfully demonstrated in the work of one of Benjamin's greatest influences, Bertolt Brecht. George Steiner describes this effect in a performance of Brecht's *Mother Courage* as follows: "There comes a moment in *Mutter Courage* when the soldiers carry in the dead body of Schweizerkas. They suspect that he is the son of [Mother] Courage but are not quite certain. She must be forced to identify him. I saw Helen Weigel act the scene with the East Berlin ensemble, though acting is a paltry word . . . As the body of her son was laid before her, she merely shook her head in mute denial. The soldiers compelled her to look again. Again she gave no sign of recognition, only a dead stare. As the body was carried off, Weigel looked the other way and tore her mouth wide open. The shape of the gesture was that of the screaming horse in Picasso's *Guernica.* The sound that came out was raw and terrible beyond any description I could give of it. But, in fact, there was no sound. Nothing. The sound was total silence. *It was silence which screamed and screamed through the whole theatre so that the audience lowered its head as before a gust of wind. . .*" (1963: 353-354).

(2000: 239). Interestingly, both here and elsewhere, he refers to the "menacing quality" this technique was capable of producing, even in cases where the original material consisted of "a seemingly innocuous rhythm" (ibid., 318).[55]

In addition to the *Revolution Dub* LP, there are a number of other later releases that make use of this technique to great effect. For example, the dub of Earl Sixteen's "Freedom", entitled "Right You/Yow" (1978), shatters the refrain of "Now, Right Yow" into a single phoneme. Instead of the full refrain, the listener is left to linger in a transmuted echo of the middle section of the word "Now", which sounds like something between "Da" and "Dow". Despite the linguistic incomprehensibility of this vocal debris, the dub manages to impart much greater force and urgency to these concentrated blasts of remnant phonetic material. A similar process of obscured intensification occurs in the fragments of soaring vocals in "Noah Sugar Pan", the dub of the Congos' mighty "Ark of the Covenant" (1977). Again, rarely is anything more than an echoing phoneme of the Congos' harmonies allowed to be heard. One who has not heard the original vocal version would certainly have a hard time trying to latch-on to any definitive linguistic meaning here. Yet what begins to emerge from considering these more radical approaches to mixing is that they are perhaps calling upon "the ancient truth that the authority of a statement depends so little on its comprehensibility that it can actually be increased by obscurity" (Benjamin 1977: 207).

This process of intensification also bears an interesting relation to McLuhan's notion that a medium or technology, when pushed to the extreme, suffers a dynamic reversal. In the case of Jamaica, this is an extreme of not only advanced technology but also territorial control. Within this framework, the recorded spoken-word, as if pushed beyond its containment capabilities, ruptures into silence. The excessive pressure

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[55] Also displaying a sense of the affinities between such dub practices and baroque fragmentation are the covers of a number of dub LPs, particularly *Johnny In The Echo Chamber - The Aggrovators: Dubwise Selection 1975-1976* (Attack Records, 1989). The cover of this album depicts what appears to be a Jamaican version of a baroque cabinet. Although fashioned in a somewhat rudimentary manner (i.e., constructed using "found" materials), the various compartments contain disparate sets of objects, from different kinds leaves, twigs and feathers to loose change, photos and animal figurines.

brought to bear on the dub-version shatters the magnetic word, charging the remnant shards with that which could not be contained in the old form. It is at this threshold, the point at which the old form suddenly breaks-off into the new, that the feeling of crisis seems to stem. For like those highly charged breaks in the ancient agricultural cycles, such periods of transition are often as rife with possibility as they are with danger.

Such volatile moments of transition tend to occur at those points at which two media meet, according to Marshall McLuhan. It is at such meeting points, what could be thought of as the breaking-point in the translation between media, that McLuhan observes a "furious release of energy and change" (1964: 49). As I will now conclude, this "furious release" of "hybrid energy" seems very much at the core of the explosive, fragmenting power of the dub-version.

CHAPTER FIVE
CONCLUSION

By no means did the destruction of the Black Ark signal the end of further dub experimentation. These techniques have permeated virtually all contemporary dance-based music, and dub-versions remain standard on the B-side of Jamaican singles to this day. "With increasing frequency in recent years, 'version' sides of new Jamaican 45s have harked back to the form's golden age, particularly those mixed by young engineers Colin 'Bulby' York and Lynford 'Fatta' Marshall" (Barrow and Dalton 2001: 228). However, it is generally held that the "classical" era of dub albums came to an end in the early 1980s (Katz 2003: 323). Scientist's last series of dub LPs, mixed during the early part of the decade, constitute "what many believe are the last true 'classical' dub albums cut in Jamaica" (ibid.). By the middle of the 1980s, Scientist was feeling that the growing pressures of the "gangster runnings" which seemed to follow his sound were becoming too much for him:

> Round at Tubbys and Channel One you have to deal with all the bad ghetto elements. When I went to Tuff Gong [studio], I could finally breath and just be an engineer. . . I was at Tuff Gong about a year-and-a-half, didn't have to worry about too much of the gangster runnings, but some of the same elements started to come there because I carry that sound wherever I go.
>
> (Scientist qtd. in ibid. 343)

Fed up with the situation, Scientist thus departed for America to join his mother and sisters in 1985 (ibid. 343).

The period previous to Scientist's departure, beginning around the turn of the decade, is a fascinating time of transformation. The emergence of the heavy new sparse sound of early dancehall is certainly a fruitful area for further study, particularly as it is often derided as being monotonous and frivolous, although appreciation seems to be somewhat on the rise as of late.[1] It is as if mainstream Western press needs at least twenty years to come to terms with what the Jamaican dancehall public is

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[1] Hawke, sleeve notes, *When The Dances Were Changing: Hitbound Selection*, Pressure Sounds, 1998; Hendley, sleeve notes, *Haul & Pull Up Selecta: Heavy Weight 1979-82*, Trojan, 2003.

able to recognize and appreciate from the get-go.[2] Beth Lesser's *King Jammy's* ([1989], 2002) provides an outstanding overview of this shift to digital dancehall rhythms, exceptional not only for the ground-level insight it provides, but also because of its original publication date (originally published in 1989; serious books on reggae were hard enough to come by at this time, let alone anything on the dancehall style).

This thesis commenced with a long journey through the development of the sound system and its extension into the establishment of a fertile domestic record industry. This predominantly chronological account has explored these developments through the encounter with a series of new playback, amplification, recording, and sound treatment technologies. This approach, which has been designated under the term *encounter model*, has been informed by a number of theories of technology. The rapid spread of military technology following the Second World War has been identified as fundamental to the development of dub, as well as the entire *sound system-recording studio* circuit of production. The investigation of this diffusion of technology -- from imperial centres to the margins of empire -- has been largely informed by the work of Harold Innis.

Mechanistic fragmentation, technological versioning, and the intimately related translation of political struggle to the realm of technological practice, are three themes that have also stood out prominently. No other technology, or use of technology, has been as central to the investigation of dub as the multi-track mixing-board interface. However, there were numerous instances of similarly radical approaches to other new audio technologies throughout this work. For example, King Tubby's thunderclap effect stands out as one of the most shocking examples of the translation of political struggle to the level of technological practice.

Most recently, in Chapter Four, Walter Benjamin has noted how "mechanical reproducibility" brought about tremendous shattering of tradition, creating new forms of expression and ways of experiencing the world. With the baroque fragment, it was revealed that meaning was not blunted, but actually transformed and intensified through the process of

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[2] ibid.

fragmentation. Although this process is inherent in the dub form, Lee Perry's phoneme-dropping style of mixing was held up as a model of its power.

Much effort has been spent attempting to trace the links between this process of fragmentation and the penetration of *the machine*. In capitalist production, it was the machine which gave "a technically concrete form" to the decomposition and fragmentation of handicraft and manufacture processes. The Gutenberg printing press, in particular, "introduced the means of mechanizing any handicraft by the process of segmenting and fragmenting an integral action" (McLuhan 1964: 160).

However, something interesting happens when the machine encounters electric media, more specifically electric "feedback" (ibid. 354). *Feedback* is the basis of cybernetics, or "cybernation", as it is called in automated industry, and involves the introduction of an information loop or circuit (ibid., 350). Under the influence of this feedback circuit, the fragmenting principle of mechanization undergoes a reversal: The specialized machine becomes the automatic machine (ibid. 356). In contrast to the fragmenting nature of the specialized machine, the automated machine incorporates all available information into a unified field of action, coordinating itself with a galaxy of other such interconnected machines (ibid. 354). "It is the electric feedback, or dialogue pattern, of the automatic and computer-programmed 'machine' that marks it off from the older mechanical principle of one-way movement" (ibid. 356). McLuhan adds that here, "Total interdependence is the starting fact" (ibid. 359).

In order to illustrate these ideas on automation, McLuhan takes the highly significant example of the shift to electronic instrumentation in music (ibid. 357). He explains that:

> With the electronic music instrument, any tone can be made available in any intensity and for any length of time. Note that the older symphony orchestra was, by comparison, a machine of separate instruments that *gave the effect of organic unity.* With the electronic instrument, one starts with organic unity as an immediate fact of perfect synchronization. This makes the attempt to create the effect of organic unity quite pointless. Electronic music must seek other goals.
>
> (ibid.)

With the arrival of digital rhythms in 1985, these new goals were brought to the forefront of the dancehall style. However, in the transitional period leading up to this arrival, it was the dub-version that provided the testing grounds for these techniques of creating minimalist re-mixes from pre-recorded material; techniques on which the digital age would later model itself. For the treatment of individual tracks in the dub-version is very much prophetic of the approach to pre-recorded material in the construction of digital rhythms; only with digital rhythms, the basic building block, or "sample" unit, is generally narrowed down to a single "drum loop" or shorter. The idea of instrumentation being shifted to the mixing device itself was already present years before this was even possible in a digital format. In other words, in the dub-version, one can perceive early signs of the changes that would characterize the shift from analog to digital recording and processing technologies many years later.

It is perhaps no surprise that the dub-version seems to be caught between these two worlds. The pre-electric goal of "organic unity", while still present, is utterly contested. Synchronization, on which this semblance of unity is based, is similarly pulled towards its opposite, particularly through echo and reverb treatment, both of which stretch isolated elements out of their designated place in the whole. Between mechanical fragmentation (goal: the semblance of unity) and electrical incorporation (goal: away from this semblance), the dub-version is torn. Unable to reconcile itself with either opposing tendency, the dub-version is condemned to an eternal process of reveling in fragmentation, a process in which any possibility of preliminary reconciliation is fleeting and abortive. Reconciliation is a gesture that is presented only to be pulled apart, somewhat like logic in a joke[3].

The unresolved intensity of this transitional period appears to have strong affinities with McLuhan's notion of hybrid energy, that "furious release of energy and change" which takes place when two media meet (1964: 49). The meeting place of different media is a theme that has run throughout this thesis, and thus is perhaps a suitable note on which to close. The shift between mechanical fragmentation and electrical

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[3] Sigmund Freud, *Jokes and their Relation to the Unconscious*, trans. James Strachey, New York: W. W. Norton, (c. 1960) 1963.

incorporation is one that continues into the early dancehall era (specifically 1979 to 1985) and, for this reason, the period has been suggested as an exciting area for further study.

Along these lines, let us now conclude this work with a passage from McLuhan's *Understanding Media*. In the closing remarks to his chapter on "Hybrid Energy: Les Liaisons Dangereuses", McLuhan writes:

> The hybrid or the meeting of two media is a moment of truth and revelation from which new form is born. For the parallel between two media holds us on the frontiers between forms that snap us out of the Narcissus-narcosis. The moment of the meeting of media is a moment of freedom and release from the ordinary trance and numbness imposed by them on our senses. (ibid. 55)

APPENDIX I
EXORCISING THE BLACK ARK: X-ING, DUCK PONDS, AND "A RETURN BLESSING THROUGH FIRE"

By 1979, Perry's behavior "became resolutely drastic" (ibid. 319). He began obsessively painting cryptic proclamations over every surface in the studio (ibid., 328). The "X-ing" phase soon followed, in which he would place the letter X over certain letters of these proclamations (ibid. 319). Earl Sixteen recalls that Perry singled out the "A's and E's" in particular, and singer George Faith notes that "equipment or anything in the studio that had the letter R, he would throw it outside because it represent Rome" (ibid. 322, 326). Guitarist Wayne Jobson was struck by the contrast between his previous visit to the Black Ark in 1978, and the situation he witnessed when he returned in May of 1979:

> At this stage now, he [Perry] was saying that bananas were God . . . Every time I went to see him, I had to carry a big bunch of green bananas, he would kneel down and pray to the banana. Then he would say that he had to X a wall, so he would take a whole day just to X maybe three feet square.
>
> (Jobson qtd. in ibid. 331)

Part of the motivation for Perry's "declamatory graffiti" seems to have stemmed from his prolonged involvement with the Niyabinghi Theocracy (ibid. 320). He had been appointed Minister of Music by the group sometime around 1977[1] and as Katz admits, "in truth, they were planning a revolution together that would usher in a new era of theocratic government" (Katz 2000: 320). The Boboshanti are said to have "taken the linguistic code of the Rastafari I-words to even more radical heights, placing great importance on letters and sounds . . . " (ibid.). "Perry adopted their methods with incessant fervour, seeking another vehicle with which to express himself" (ibid.). His half-brother, Milton "P-Son" Blythe, tries to explain Perry's motivation as follows: "Even now in Jamaica, certain words to the Rastaman don't right . . . so it's a vibes like that. I think in his mind, he was back to school studies. I think it was just

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[1] Perry had funded a forty day Niyabinghi drum session "initiated before the death of Pope John Paul I - which more radical members of the order claimed was caused partly by the energies released at their Niyabinghi" (Katz 2000: 321).

inspiration and the good from the bad, like you have X stand for the Devil, D for Death" (Blythe qtd. in ibid.).

Henry Targowski, founder of the Black Star Liner distribution company and record label, formed a similar impression after witnessing Perry's chaotic behavior and hearing Perry's "explanation". On a visit to the Black Ark in 1979, Targowski relates:

> Scratch would suddenly grab a felt-tip pen, hold it in front of him, then go and scribble some cryptic words and phrases on any available surface . . . When I asked him what he was doing, he said he was "Declaring the Rights and Executing the Wrongs".
>
> ("Lee Perry: Genius, Madman, Magician", *Vinyl* 7, 1981: 14-15; Katz 2000: 330)

Perry was in fact performing a linguistic exorcism:

> The recurrent phrases which appeared on walls, tape boxes, instruments, mixing panel, pieces of paper and whatnot were mantras. Scratch felt that his studio had been used by negative people; he was performing an exorcism to remove the bad vibes.
>
> (Targowski qtd. in ibid.)

It is this troubling relation to "negative people" that appears to touch at the root of Perry's drastic shift in behavior. Put simply, it seems Perry felt that many of those closest to him had betrayed and abandoned him. This feeling is evident in a comment Perry made to Dave Hendley in a brief moment of (verbal) clarity.

In January of 1979, Dave Hendley had made a trip to Jamaica to visit to the Black Ark (Katz 2000: 327). Although the mixing desk and tape machines were still operational, Hendley found the studio completely devoid of visitors (ibid. 326-327):

> By this time, Scratch was totally transformed. We went up once and there was no one around, we peered through the railings and you could see he had covered the place, scrawled absolutely everywhere. That's the first thing that hit you, all the little crosses on the walls and all the elemental stuff . . . When we eventually linked, he was just talking virtually non-stop, talking all the time, even if he was talking to himself a lot. Everybody had gone, nobody was coming 'round there any more. I thought he looked in really bad shape, there was a certain tragedy about it to be honest. There were moments where he would make sense, and I remember him saying "*No one comes by any more, they've taken everything they can off of me*" . . . There wasn't one surface that he'd not written on, and the amount of time that he must have spent just writing that stuff is phenomenal. He must have been so alone when he was doing that, it's very solitary stuff and the tiniest of things like the staple gun had been written on.
>
> (Hendley qtd. in ibid. 327-328-emphasis added)

Henry Targowski describes the "wild montage" that covered the Black Ark as an externalized chronology of Perry's inner turmoil:

> The colourful paintings which had decorated the outer wall were all gone; Scratch had covered them in ugly green and shit-brown paint . . . When I entered the studio . . . The place was a disaster area. Bits of equipment lay scattered . . . shelves had been torn down. Boxes of recording tape lay strewn in a jumbled heap in the middle of the floor . . . The inside wall had become a wild montage: The previous art had been painted over with the same green and brown as outside; scratch had also glued records, metal stampers, tapes and other assorted objects to the walls - layers upon layers of paint and posters and book pages, a chronological history of Scratch's mental state.
>
> ("Lee Perry: Genius, Madman, Magician", *Vinyl* 7, 1981: 14-15; Katz 2000: 329)

Perry's feelings of betrayal would also result in a altercation with Bunny Lee and King Tubby sometime in the violent months leading up to the 1980 general election (ibid. 346). As Clancy Eccles relates:

> Bunny Lee, Tubbys and I went to Scratch when Marley was on tour, and Scratch went for a hammer to bust up Bunny Lee and Tubby's head; they jump in the car and left me. Bunny Lee is a friend, but anything you do, tomorrow morning Bunny Lee say it's him do it. Tubbys is another copy man again so Scratch didn't like none of them.
>
> (Eccles qtd. in ibid.)

Before the Black Ark's ultimate fiery destruction in 1983, the studio did go through a series of attempted resurrections, one of which involved a fascinating reconstruction based on alchemistic principles. For example, during Henry Targowski's visit to the Black Ark in 1979, Perry described a vast new alchemistic cosmology which guided his envisioned new sound (Katz 2000: 330). "In the beginning was the Word which is sound. Thunder crashes and lightning strikes the earth, causing an X-shaped crack in the surface, out of which life forms emerge -- Mother Earth giving birth".[2] Perry thus sought to bring the foundational elements of "Earth, Air, Fire and Water into his music"[3] in order to "Hijack Earth" (Katz 2000: 331). After stripping down the main studio to the point where the only thing left was half a drum kit, Perry became more and more obsessed with the idea of fusing his drum sound (or what was left

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[2] Henry Targowski, "Lee Perry: Genius, Madman, Magician", *Vinyl* 7, Sept. 1981: 14-15; Katz 2000: 330.

[3] ibid.

of it) with the element of Water. Dave Hendley states that Perry had "dug a hole under the drum about three foot square with water in it, but it was boarded over; that was back to this thing with the elements, to get the sound of water. Scratch would talk about the hole and how the water was there to get that sound" (qtd. in Katz 2000: 332).

In March 1980, Targowski's Black Star Liner began funding the reparation of the Black Ark (ibid. 339). The company sent the talented Dave Sampson to carry out the project. Sampson formerly repaired houseboats in Amsterdam, during which time the American expatriate became known as Sampson the Iron Man (ibid.). By May, Sampson was ready to begin work on the drum booth. Over a meal at Bill Bradford's house (Bradford was Black Star Liner's main financial backer), Perry was consulted on the issue: "Billy [Bradford] said, 'David's going to build you a drum booth, Scratch, what do you want? How do you want it built?' Dave [Sampson] was sitting there with a pen, and Scratch started to prognosticate" (GT Moore qtd. in Katz 2000: 342). Dave Sampson managed to catch "Egg", something like "Aqua", "the Earth", "Rastafari", and "Metal" (GT Moore in ibid.).

After a few clarifications, Sampson spent several days constructing a drum booth that attempted to capture Perry's envisioned elemental sound (GT Moore in ibid. 343). A wooden floor with sand underneath provided the anchor to Earth, and wood ran up to the halfway point of the booth, with glass extending to the top (GT Moore in ibid.). In the middle of the floor was a hole in the shape of a Star of David which contained water ("Aqua") (GT Moore in ibid.). The top of the booth was enclosed by chicken wire ("Metal"), which had an important relation to the "pond" in the centre of the booth (ibid.). As Perry later revealed, his motivation was in fact to have a duck pond in the drum booth (ibid.). Perry subsequently explained that:

> The heat itself and the energy that was coming, the heat was so strong that we were going to need water to cool it. It get too powerful and might be exploding, so then I need birds, because the birds is the power of the air, and the water . . . it work because when you're not playing drum, then duck would be swimming around and having fun, and when you're playing drums, then the duck could go outside and rip up plant.
>
> (Perry qtd. in interview with Pieter Franssen, VPRO Radio 3 broadcast, Holland, April 4, 1990; Katz 2000: 343).

However, Perry's cyclical dismantlings of whatever progress had been made meant that the envisioned studio would never be completed (ibid. 344, 346). As touched on earlier, the most definitive indication that the Black Ark's glory days were forever over came in the form of "a baptism by fire" on a summer morning in 1983 (ibid. 363).

> "I have to burn it down, to save my brain. It was too Black. It want to eat me up!"
>
> (Lee Perry qtd. in Mick Sleeper 2000)[4]

After the fire destroyed most of the studio, Perry took the remaining instruments and equipment and threw them down into the septic tank (ibid. 363, 366). Despite ongoing financial difficulties, Perry resolved that it was better to destroy the equipment than have it benefit those who sought to reap from his misfortunes (ibid. 366). As Perry recounts:

> Me take out the instrument them, like drum kit and guitars, and the eight track Chris Blackwell bought me; all of those, I throw them in the toilet pit . . . just like that; they are there still now. Bunny Lee want me to sell the Tascam to his friend [Prince/King] Jammys - that's when me decide me have to throw it in the pit. Him send somebody that wanted to buy and me don't have no money; the Tascam was there and Bunny Lee come with something about Jammy want my mic to buy. Bunny go into the studio and take my mic, so I throw them all in the pit - run it off before I have to send it to Bunny's friend Jammy. Those are bad vibrations.
>
> (Perry qtd. in ibid.)

Lee Perry has referred to the dark forces that led to the destruction of the Black Ark on numerous occasions. In an interview recorded in the 1980s, Perry is clearly taken aback by the question concerning the circumstances surrounding the destruction of the Black Ark. His playful manner suddenly subsides and a strain creeps into his voice: "Well, I was dealing with some unclean spirit, I mean unclean people that was in the Ark. . . Well fire is a purifier that purify anything that is dirty or unclean. Well we get blessing through fire, so we got a return blessing through fire, so the only way to get rid of those evil spirit was to

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[4] "Shocks of Mighty: An Upsetting Biography", Updated and revised from *Reggae Rasta Revolution*, Ed. Chris Potash, New York: Schirmer Books, 1997 <http://www.upsetter.net/scratch/bio05.htm>.

burn it down".[5] Thus ends one of the most dramatic declines in the history of Jamaican recording studios.

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[5] Lee Perry qtd. in interview with Steve Barker and Roger Eagle (recorded for BBC Radio Lancashire's "On The Wire" with Steve Barker in 1984, 1986 and 1991), *Lee Perry: "Divine Madness ... Definitely"*, Pressure Sounds, 2001.

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* Note: All online material accessed April 2005.