

A MUSICAL ANALYSIS OF DONALD BYRD'S *ELECTRIC BYRD*

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A RESEARCH PAPER

Submitted in partial fulfillment of the requirements for the degree of
Master of Music in Commercial Trumpet Performance
in the School of Music
of the College of Music and Performing Arts
Belmont University

NASHVILLE, TENNESSEE

November 2020

Submitted by Eric Snyder in partial fulfillment of the requirements for the degree of Master of Music in Commercial Music.

Accepted on behalf of the Graduate Faculty of the School of Music by the Mentoring Committee:

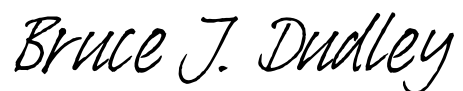
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Chapter One: Introduction

Donald Byrd is a prime example of a performing artist that occupies a unique niche by “crossing over” between genres, occupying an ambiguous space between popular and jazz styles for much of his career. Prior to 1969, Byrd was writing, performing, and recording hard-bop jazz music almost exclusively. He was regarded by critics and fans as “one of the finest hard bop trumpeters of the post-Clifford Brown era,” playing on numerous recordings throughout the 1950s and 1960s as both a leader and a sideman (Huey, n.d.). Byrd played with numerous notable jazz artists including Pepper Adams, John Coltrane, and Thelonious Monk (Huey, n.d.).

As jazz began to decline in popularity going into the 1970s, Byrd and other jazz artists endeavored to tap into popular music trends and bring jazz “nearer to the commercial tastes of the day” by combining “modern jazz techniques with the then current style of soul and rock”(Latham 2011). Music in this style from the late 1960s and early 1970s would later come to be collectively known as “jazz-rock fusion” or just “fusion” (Latham 2011). After recording a string of fusion albums from 1969-1972, Byrd would again transition styles.

Byrd’s collaborations with producers Larry and Alphonso Mizell established a new standard in blending jazz techniques with R&B. Their 1973 album *Blackbyrd* earned

a Grammy nomination and became Blue Note's highest selling album of all time. His projects from this period have been sampled by many notable hip-hop artists including, Nas, Ludacris, and A Tribe Called Quest (Mlynar 2013).

While the more commercially successful hard-bop and R&B phases of Donald Byrd's career are the subject of a number of books (Davis 1986), dissertations (Harrison 2012), and journal articles (Carner 2016), the transitional period (roughly 1969-1972) between them is largely forgotten and unexamined in academia. This research endeavors to fill in some gaps in our knowledge of how this music was created and performed. To this end, this paper presents a musical analysis of Byrd's 1970 fusion album, *Electric Byrd*.

Using original transcriptions and musicologist Jan La Rue's analysis framework outlined in his book *Guidelines for Style Analysis*, this research paper demonstrates how each of the four songs on the album is constructed in terms of sound, harmony, melody, rhythm, and growth. La Rue's framework is a practical tool for dissecting musical style and considering all the musical elements present on the recordings. The category of "sound" examines timbre; "harmony" details harmonic progression and rhythm; "melody" discusses motivic development and the improvised solos; "rhythm" examines meter, pulse, and polyrhythms; and "growth" describes form and how all the elements are coordinated. An analysis of *Electric Byrd* using this method will provide us with a deeper understanding of Byrd's composition and performance practice during this period.

Electric Byrd (1970) is an ideal subject for this analysis. The album was one of Byrd's most ambitious projects of this period in his career. At the time, it was on the cutting edge of fusion, recorded at Van Gelder studio for the Blue Note label just two

months after the March 1970 release of Miles Davis's seminal *Bitches Brew*. The album features a large ensemble, electronic instruments, and electronic effects. It includes some of Byrd's primary collaborators from this period including producer/pianist Duke Pearson, percussionist Airto Moreira, tenor saxophonist Frank Foster, and flutist Lew Tabackin. Byrd is the primary composer on the album, contributing the songs "Estavanico," "Essence," and "The Dude." The fourth song, "Xibaba," was composed by Airto Moreira. The album is a nuanced work of fusion which effectively combines modern jazz techniques with contemporary commercial tastes.

Electric Byrd also draws on contemporary "post-bop" techniques pioneered by Miles Davis with his 1960s quintet. "Post-bop" is a term which refers to jazz from the late 1960s and early 1970s that combines "principles of bop, hard-bop, modal jazz, and free jazz" (Waters 2015). In writer Keith Waters' book, *The Studio Recordings of the Miles Davis Quintet: 1965-68*, he discusses how Davis's quintet created an approach that fell between the rigid adherence to harmonic progression, harmonic rhythm, hypermeter, meter and pulse found in hard-bop; and the complete abandonment of those same elements in free jazz (Waters 2011, 81). By experimenting with abandoning some elements while preserving others, the group created a flexible approach to composition and improvisation that spanned a continuum between "traditional and avant-garde approaches." (Waters 2011, 81) This approach largely defined post-bop and was used on many of Davis's fusion projects including *Bitches Brew* (1970).

Though *Electric Byrd* draws on many of the same concepts used by Miles Davis on *Bitches Brew*, the post-bop aspects of these two works function on different parts of the "traditional" and "avant-garde" continuum. The music on *Bitches Brew* steers closer

to the “avant-garde” side of the continuum, often completely abandoning harmonic progression, harmonic rhythm, hypermeter, meter, and pulse. Davis only provided the musicians on *Bitches Brew* with loose sketches of the music and left many of these elements completely open ended (Svorinich 2009, 15). My analysis will show how *Electric Byrd* is closer to the “traditional” side of the continuum, more often obscuring structures than completely abandoning them.

In blending post-bop techniques with trends nearer to commercial tastes, *Electric Byrd* creates a distinct sound by drawing in elements from an eclectic mix of styles. It uses them in a manner reminiscent of “psychedelic rock,” a popular genre in the mid-1960s loosely defined by musical experimentation with “conventions of form and timbre” and “electronic sound manipulation” (Cohen 2014). Psychedelic rock combines elements of R&B, rock, country, folk music, and jazz, and mixes them with inventive uses of electronic effects to portray the experience of taking hallucinogenic drugs. Its emphasis on extended improvisation closely associates it with avant-garde and free jazz music of the 1960s.

Electric Byrd is one of Byrd’s most ambitious fusion projects from his transitional period. It effectively combines influences from a wide range of sources including post-bop jazz, psychedelic rock, traditional West African music, Brazilian music, and the fusion works of Miles Davis. The references to the recently released fusion works of Miles Davis reflect Byrd’s career-long effort to “be making the most cutting-edge stuff and be part of the cutting-edge” (Winistorfer 2018). While the particular combination of elements from 1970s popular music trends used on *Electric Byrd* make it an outlier between the hard-bop and R&B phases of Byrd’s career, its use of “cutting-edge” jazz

techniques is consistent with the rest of his musical output. By breaking down each song into its basic musical elements, it can be shown how Byrd and his ensemble approached *Electric Byrd* from a compositional and improvisational perspective.

Chapter Two: Sound

Electric Byrd evokes psychedelic rock by utilizing an unusual combination of timbres from a wide range of sources. The ensemble on the album, listed in table 2-1, has thirteen members with five contributing multiple instruments. The assortment of brass and woodwind instruments is idiomatic to both funk and jazz. Airto Moreira contributes a large collection of percussion instruments including congas, shakers, and a berimbau, a pitched percussion instrument common to traditional music from Brazil and West Africa. The rhythm section combines acoustic and electric timbres with the acoustic bass and electric piano, and electric guitar. Wally Richardson’s electric guitar timbre is idiomatic of blues music with his use of “wah” and “distortion” effects (Bacon 2001).

Donald Byrd- Trumpet
Jerry Dodgion- Alto Saxophone, Soprano Saxophone, and Flute
Frank Foster- Tenor Saxophone and Alto Clarinet
Lew Tabackin- Tenor Saxophone and Flute
Pepper Adams- Baritone Saxophone and Clarinet
Bill Campbell- Trombone
Hermeto Pascoal- Flute (only on “Xibaba”)
Duke Pearson- Electric Piano
Wally Richardson- Guitar
Ron Carter- Bass
Mickey Roker- Drums
Airto Moreira- Percussion

Table 2-1. *Electric Byrd* personnel

The techniques used to orchestrate this ensemble also hint at a number of these musical styles. “The Dude” evokes funk music with the combination of the trombone, trumpet, and saxophones playing the melody voiced in octaves. “Essence” evokes hard bop with the combination of three wind instruments (alto sax, tenor sax, and trombone) playing harmonized backgrounds in the introduction and solo sections. “Estavanico” hints as psychedelic rock with the unusual combination of electric guitar, clarinet, flute, and acoustic bass found in the melody.

The applications of “reverb” and “tape echo” found in *Electric Byrd* are also consistent with psychedelic rock. “Reverb” is an electronic effect that “simulates natural acoustic reverberation,” adding a greater sense of depth to a sound (“Reverb” 2001). This effect is applied to the entire ensemble for the duration of each track, creating the illusion that the ensemble is playing inside a large space. While this effect is typically used more subtly on jazz recordings, the effect is manipulated so that the reverberations last an unusually long time, creating a complex texture of overlapping sounds.

On the first three songs, the ensemble explores musical interactions made possible by inventive applications of “tape echo.” “Tape echo” is a type of delay effect, generating repeated and decaying echoes of whatever sound it is applied to. Unlike the application of reverb, *Electric Byrd* utilizes a more dynamic approach to tape echo, independently manipulating the volume level of the echoes and timing at which they affect each instrument.

While I was unable to find information on exactly how the ensemble implemented the tape echo effect, the sound of the effect suggests an engineer was cued by the musicians to manipulate the effect live during the albums recording sessions. The

shifts in volume and timing of the effect are coordinated in a complex way. The musicians consistently react to sounds of the echoes in real time, interacting with them in a way that is impossible to achieve with the addition of tape echo in post-production. This can be heard frequently through the improvised sections such as in “Xibaba” at 7:20 when Byrd precisely times all his entrances to coincide with the repeats of the echoes. It is unlikely they had multiple tape echo machines, as the uniform length and timbre of the echoes themselves suggests that all the instruments were routed through a single machine. Even if multiple machines were used, it would be impossible for instruments requiring two hands like guitar or piano to continue to play while gradually turning knobs on a machine. The engineer would be the only one able to smoothly coordinate the independent volume and timing of the effect on each instrument in real time using a single machine.

On the first three songs; “Estavanico,” “Essence,” and “Xibaba”; the ensemble experiments with tape echo’s capability to affect the perceived depth of an instrument in the mix. When tape echo is added to an instrument, its echoes begin to overlap with each other and obscure the instrument’s articulations and timbre. This creates the illusion the instrument is further from the listener or “deeper” in the mix. The effect becomes more pronounced as the volume of the echoes is increased. By decreasing the volume of the echoes, the instrument's timbre becomes clearer, making it feel closer to the listener or at the “front” of the mix. The ensemble explores using varying levels of volume to send instruments to varying depths in the mix, creating complex sonic textures with many layers of echo.

In “Estavanico,” the ensemble exploits this aspect of tape echo to place greater emphasis on the soloists by keeping the accompaniment instruments deeper in the mix. At time 1:30, Richardson on guitar assumes an accompaniment role to the wind players performing the melody. The wind instruments are left without tape echo while the guitar is placed deeper in the mix with a moderate level of tape echo. When the trumpet solo begins at 2:30, the level of the tape echo on the guitar increases significantly, sending it even deeper in the mix. This technique is effective at creating space at the “front” of the mix for the trumpet. Even when the trumpet sound is altered with a moderate amount of tape echo later on (time 3:50), its articulation is still clearly distinguished over the guitar’s. This approach continues through the rest of the solos in “Estavanico” as well as in the improvised section in “Essence.”

In “Xibaba” this technique is used to highlight the timbre of the electric piano in the introduction. At the beginning, Byrd plays the melody on trumpet accompanied by Pearson’s electric piano. Both instruments have a significant level of tape echo on them, but the electric piano is played sparsely to not obscure the trumpet timbre. When the trumpet solo ends and the electric piano solo begins, the tape echo is almost completely removed from the electric piano, quickly raising it to the front of the mix. This contrast in depth is effective at focusing the listener on the timbre of the keyboard.

The first three songs also explore tape echo’s capability to create dense layers of sound. With the way the tape echo machine is configured on the album, as the volume level of the echoes is increased, the length of time it takes the echoes to decay also increases. The ensemble exploits this attribute to create tension in the music near the ends of almost of every solo on “Estavanico,” “Xibaba,” and “Essence.” By ramping up the

volume of the echoes on the soloist and harmonic accompaniment, the echoes decay much slower and layer on top of each other creating many unusual dissonances and conflicts in the music. This is effective at creating tension and interest near the climaxes of the solos. The ensemble also utilizes this effect during the collective improvisation sections on “Xibaba” (time mark 8:00) and “Essence” (time mark 8:27).

Electric Byrd features some of the most defining aspects of psychedelic rock including its eclecticism and applications of electronic effects. The large ensemble assembled for the album incorporates timbres from a wide range of styles. Electronic effects such as reverb and tape-echo are central parts of the album’s sound and evoke psychedelic rock in the unusual method they are utilized.

Chapter Three: Harmony

In the category of harmony, *Electric Byrd* combines elements from modal jazz and free jazz in a manner reminiscent of post-bop. The term “modal harmony” is used to loosely refer to harmonic devices common to modal jazz including the use of “modal scales, slow harmonic rhythms, the absence or limited use of functional harmonic progressions, pedal point harmonies, and fourth-based harmonic structures” (Waters 2011, 40). While the level of harmonic complexity varies from song to song, all four songs share aspects of modal harmony.

Functional chord progressions are completely absent from all four songs. They instead utilize pedal point harmonies or shifting “harmonies over a primary bass pitch” (Waters 2011, 40). The bass ostinatos played by Ron Carter (Fig 3-1) are repeated for the duration of each song and firmly establish a single tonal center. The only song to not feature a bass ostinato for the entire length of the piece is “Essence.” In “Essence,” Carter switches from a pedal point to a “walking” bass line for the solos, still tonicizing a single tonal center.



Figure 3-1. Bass ostinatos from “Xibaba,” “Estavanico,” and “The Dude.”

The harmonies created over the bass ostinatos on all four songs are primarily based on modal scales. “Essence” utilizes the Dorian mode. “The Dude” draws exclusively on the Mixolydian mode in its accompaniment and improvised sections. “Estavanico” and “Xibaba” shift between collections of pitches from “parallel” modes which share the same tonic. These harmonies are created by “planing” tertian or fourth-based voicings through the pitch collections of the modal scales.

Fourth-based, or “quartal” harmonic structures, are another common element on this album. The technique of using the interval of a fourth to construct melodies and harmonies is a staple of modal jazz from the 1960s. It presents a colorful alternative to the more common tertian harmonies that dominated earlier jazz styles. The rhythm section on *Electric Byrd* utilizes quartal voicings in its harmonic accompaniment through the improvised sections of “Estavanico,” “Essence,” and “Xibaba.” Richardson (guitar) and Pearson (electric piano) frequently sequence these voicings chromatically in a technique known as “chromatic planing.”

The more harmonically complex songs, “Estavanico” and “Xibaba,” utilize “modal interchange” in their melodies, a technique in which harmonies are borrowed from parallel modes. The melody to “Estavanico” has a thirty-two measure ABA’B’ form

which is played once before the solos. The A'B' sections, shown in fig 3-2, combine chromatic planing with modal interchange in the voicing of the melody in the trumpet, trombone, and tenor saxophone (labeled “horns” in fig 3-2). Each voicing of the horns in measures 1-8 is a major seventh chord with an omitted fifth. The pitches of the horn voicings borrow from the F Ionian, F Dorian, and F Phrygian modes. The rhythm of the horns places emphasis on the voicings which pull from the F Ionian mode, establishing F Ionian as the underlying harmony. In measures 9-16 of fig 3-2, the horns continue to use modal interchange but with voicings based on fifths instead of thirds. The pitches of the voicings in measures 9-10 and 13-14 borrow from the F Phrygian and F Locrian modes before switching back to F Ionian in measures 11-12 and 15-16.

The musical score for Figure 3-2 is presented in two systems. The first system covers measures 1 through 8, and the second system covers measures 9 through 16. Each system includes three staves: Horns (top), Trumpet (middle), and Bass (bottom). The Horns part features chromatic planing with major seventh chords and omitted fifths. The Trumpet part has a melodic line with chromatic movement and rests. The Bass part has a steady eighth-note accompaniment.

Figure 3-2. First A'B' section from “Estavanico”

Across the album, the soloists pull from a similar collection of scales used by the melodies in their improvisations. In discussions of modal harmony, the Ionian,

Mixolydian, and Lydian modes are sometimes referred to as the “major sounding modes” for their similar sets of pitches and inclusion of the major third scale degree. The Dorian, Aeolian, Phrygian, and Locrian modes are sometimes referred to as the “minor sounding modes” for their inclusion of the minor third scale degree. The scales within these two groups are very similar to each other, most only separated by differences in one or two pitches. Byrd, Tabackin, and Foster use the “major sounding modes” and “minor sounding modes” interchangeably on their solos. In their solos in “Estavanico”, Byrd and Tabackin consistently allude to the shifts in scales that occur in measures 9-16 of the melody but use F Mixolydian where the melody uses F Ionian. Tabackin and Foster frequently substitute F Dorian in place of F Phrygian in their solos as well.

The improvised sections of the four songs frequently evoke free jazz by obscuring or abandoning the prescribed harmony for parts of the solos. Though the soloists draw from the modal pitch collections established in the melodies as a starting point, they frequently step outside of them by superimposing other modes and scales on top of the underlying harmony. This technique, sometimes referred to as “superimposition,” is commonly used in the post-bop and fusion genres as it gives the soloists and rhythm section a greater degree of freedom in their choices in harmonic vocabulary. This device is used to create tension and interest through the improvised sections on every song except “The Dude.”

Superimposition is frequently utilized for short periods by the musicians through the improvised sections. Figure 3-3 shows an example of Byrd briefly using superimposition on his solo in “Essence.” He abandons the underlying D Dorian harmony

for a total of two and a half measures, superimposing the Eb Ionian and then Eb Dorian scales.



Figure 3-3. Measures 25-32 of Donald Byrd's solo in "Essence"

Near the ends of solos, the musicians will often utilize superimposition for much longer, stepping outside the underlying harmony for four or more measures at a time. This is often coordinated with the application of the tape echo effect, using the overlapping echoes to layer even more harmonies on top of each other. The combination of tape echo and superimposition is used near the end of every solo on "Xibaba," "Estavanico," and "Essence" to create dense, ambiguous, and dissonant harmonies. In these instances, the ensemble abandons all underlying harmony except for the pedal point in the bass. Some examples of this include the end of Foster's solo in "Estavanico" (8:00), the collective improvisation section on "Xibaba" (8:10), and the end of Tabackin's solo on "Essence" (5:20).

Chapter Four: Melody

In discussing the role of melody in a jazz performance, it is important to understand the relationship between the composed melodies and improvised melodies. In many jazz performances, the improvised melodies can be interpreted as abstract variations of the composed melodies. In earlier styles of jazz such as bebop and hard-bop, the composed melodies or “heads” are played once or twice, establishing a set of harmonic and melodic themes which are then recycled in abstract ways by the musicians. Free jazz musicians found this convention restrictive and frequently either eliminated composed melodies entirely, or only predetermined select aspects of the melody such as pitch or rhythm.

Electric Byrd compromises between hard bop and free jazz melodic conventions by using predetermined but minimalistic melodies. The melodies to all four songs have only one or two short motifs which are developed by using “sequences.” This approach keeps the melodies on all four songs short, simple, and repetitive, placing few guidelines on the musicians for the improvised sections.

A “sequence” is a repetition of a “short figure or motif” which is “stated successively at different pitch levels, so that it moves up or down a scale by equidistant intervals.”(Drabkin 2001) “Xibaba,” “Estavanico,” and “The Dude” utilize a variation of

this technique in which the rhythm of a short motif is repeated verbatim in successive phrases, but the pitches and intervals are altered. In the two-measure long melody from “The Dude” (fig 4-1), this can be seen in the repetitive rhythms. The melody can be broken up into four short parts or “cells” based on the eighth notes which break up the strings of sixteenth notes. The last three melodic cells repeat the rhythm of the second cell exactly. They also imitate the contour of its line at successively higher pitch levels. The fourth cell is identical to the second but shifted up an octave in pitch.



Figure 4-1. First two measures from the melody from “The Dude”

This technique can also be seen in the melody to “Xibaba”. The example below (fig 4-2), taken from the first A section of the melody, shows that the rhythm of the first melodic cell is repeated verbatim in each successive cell. The melodic contour of the first cell is also imitated at successively lower pitch levels. The shifts in collections of pitches between each cell delineate the modal interchange ideas discussed in chapter three.



Figure 4-2. First A section from “Xibaba”

“Essence” is an outlier from the other three tunes. Its melody, performed by Byrd (fig 4-3), is short and does not have a repetitive rhythmic pattern or phrase structure like

the other three songs. It is unclear how much of the melody was predetermined by Byrd. He pulls exclusively from the minor pentatonic scale but the lack of repetition in the phrasing gives the melody an improvisatory character reminiscent of free jazz.



Figure 4-3 Byrd's solo from the introduction to "Essence"

This approach to the melody on "Essence" is more consistent with the approach Miles Davis used to composition on *Bitches Brew*, leaning more towards the "avant-garde" side of the post-bop continuum. The other three compositions on *Electric Byrd* have more structured melodies and lean towards the "traditional" side. "Estavanico" and "Xibaba" both hint at free jazz with the loose, rubato treatments of their melodies in their introductions, but both songs still present fully predetermined melodies before their improvised sections.

The soloists on *Electric Byrd* imitate the melodic approach of the compositions, focusing on short motifs and motivic development. The album primarily features Byrd, flutist Lew Tabackin, and tenor saxophonist Frank Foster as soloists. Byrd abandons much of the bebop vocabulary and running eighth note lines that characterized his

improvisational style earlier in his career, instead concentrating on motivic development techniques.

Many of the standard motivic development techniques utilized by the soloists across the whole album can be seen in the first few phrases of Byrd's solo on "Xibaba" (fig 4-4). In measure one, he establishes a simple three note motif, which he carries throughout the rest of his solo. Byrd uses rhythmic augmentation, rhythmic displacement, and transposition to develop this motif. Measures one and two demonstrate rhythmic augmentation, as Byrd repeats the cell from measure one in measure two but alters the length of the first two notes, playing them as quarters instead of eighths. Measures five and six copy the ideas from measures one and two verbatim, but use rhythmic displacement, shifting the start of each cell over one beat.

Figure 4-4. Excerpt from Byrd's solo from "Xibaba"

Byrd connects his ideas to the melody of "Xibaba" with a similar use of mode interchange, alluding to the minor sounding modes of the A section in measures three, seven, and eight with the F naturals. He primarily switches between A Mixolydian and A

Phrygian. Byrd references the harmonic rhythm of the A section but spends much more time in each mode than the two-to-three measures at a time of the melody. Figure 4-4 shows an example of this in measures 11-18, where Byrd transposes many of his ideas from measures 1-10 into A Phrygian, imitating the rhythm, stepwise motion, and contours of his previous ideas.

Tabackin and Foster take similar approaches to Byrd in their improvisations but use more sixteenth notes and different harmonic vocabulary. The lack of functional chord progressions combined with the use of superimposition enable the soloists to utilize different collections of scales on each song. In “Xibaba” for example, Byrd mainly plays the Mixolydian and Phrygian modes, contrasting Tabackin’s use of the Dorian and Lydian modes. As mentioned in the previous chapters, the soloists frequently build tension near the ends of their solos with the application of tape echo and superimposition.

The minimalistic melodies of *Electric Byrd* provide few guidelines to limit the direction of the improvised solos. The compositions compromise between hard-bop and free-jazz melodic conventions by minimizing the role of the composed melodies without eliminating them. This enables the soloists a greater degree of freedom in their improvisations.

Chapter Five: Rhythm

In the category of rhythm, *Electric Byrd* evokes the eclecticism of psychedelic rock by combining rhythms idiomatic to many different styles of music. The typical rhythmic patterns of funk and swing are integral parts of the “The Dude” and “Essence” respectively. Folk music is also central part of the album. Donald Byrd frequently utilized aspects of traditional West African and Brazilian music in his 1970s fusion projects. In a 1996 interview, he cites his studies abroad in West Africa with several notable musicologists and travels to Bahia, Brazil as major influences on him during this period (Byrd 1996). This led Byrd to collaborate with musicians who were knowledgeable of folk music from these cultures for the recording of *Electric Byrd*, including Brazilian musicians such as Airto Moreira and Hermeto Pascoal. Airto Moreira’s role as a percussionist in addition to Mickey Roker’s drumming is perhaps meant to emulate the intricate rhythmic textures created by multiple percussionists commonly found in traditional West African music.

One key aspect of traditional West African music utilized by *Electric Byrd* is the interweaving and layering of “short, repetitive motives (ostinatos)” (Stone 2008,11). An example of this technique can be found in the introduction to “Essence.” Moreira is featured in the introduction to “Essence” playing a type of berimbau, a pitched percussion instrument which is used prominently in Brazilian capoeira music, but which originates

from Western Africa. His solo employs a steady pulse of eighth notes and quarter notes which imply 6/4 as the underlying meter. After a short solo, the bass and winds enter, layering ostinatos on top of the improvisation of the berimbau. While the listener initially perceives beat two of this section (Fig 5-1) as the downbeat due to the sustained pitch in the bass, Byrd's solo beginning at 1:08 recontextualizes the rhythms of the winds, bass, and berimbau around the quarter note of the bass part. Byrd accomplishes this by creating a polyrhythmic texture which is centered around this part of the bass ostinato.

The image displays two systems of musical notation for a piece featuring four instruments: Trumpet, Horns, Bass, and Berimbau. The notation is in a key signature of one flat (B-flat) and a 6/4 time signature. The first system is marked with a time signature of 1:08. The Trumpet part is written in a treble clef and consists of a series of quarter notes and eighth notes. The Horns part is also in a treble clef and features a rhythmic pattern of eighth notes and quarter notes. The Bass part is in a bass clef and plays a steady pulse of quarter notes. The Berimbau part is in a treble clef and plays a complex, polyrhythmic pattern of eighth and sixteenth notes. The second system continues the same musical material, showing the interaction between the instruments over time.

Figure 5-1. Excerpt from the introduction to “Essence”

He superimposes rhythms, which accent the four dotted quarter notes that fit evenly within a measure of 6/4 on top of the quarter-note based ostinatos of the bass and berimbau. This creates a 2:3 polyrhythm that persists until the end of the trumpet solo, at which point the entire ensemble abandons the quarter notes of the 6/4 entirely, turning the four dotted quarter notes accented by Byrd into the new underlying pulse and meter. Other examples of interlocking ostinatos on the album can be found in the introduction to “The Dude” and in the melody to “Xibaba” (3:08).

Electric Byrd also alludes to Brazilian styles of music with references to the samba-batucada and bossa-nova styles on “Xibaba” and “Estavanico.” In “Estavanico,” the drums play a repeating pattern of eighth notes on the hi-hat and cross-stick hits on the snare drum (fig 5-2) which are typical sounds used by drum kit players to imitate the timbre of high-pitched drums commonly used in Samba performances (McDermott 2016, 8). In “Estavanico,” the tempo and rhythm of the bass hint at the style of bossa-nova. However, the pattern of the drums does not include any of the syncopated “clave” patterns which are a critical component of the bossa-nova style. Instead, the cross-stick hits on the snare drum mainly land on down beats in a pattern more consistent with rock music. The ostinato of the bass is also ambiguous, utilizing the typical bossa-nova bass pattern in beats one and two, but deviating from it by not repeating the same rhythm in beats three and four. The result is an ambiguous combination of rock and bossa-nova styles.

Figure 5-2. Drum and bass ostinatos in “Estavanico”

“Xibaba” references samba-batucada, a substyle of traditional Brazilian samba music. Samba-batucada or “street-samba” is characterized by a repeating rhythm played on a high-pitched drum called a “tamborim” (McDermott 2016, 8). This rhythm serves a similar function to the “clave” in bossa nova music, providing a foundation that the rest of the rhythms are organized around. Fig 5-3 shows an example of one of the most commonly played rhythms on the tamborim in samba-batucada.

Figure 5-3. Example of typical samba-batucada pattern in *Tradition and innovation in the drumming of Airto Moreira: a portfolio of recorded performances and exegesis*.

“Xibaba” utilizes an unusual variation on this pattern in the hi-hat and congas (Fig 5-4), adapting it into the 3/2 meter by repeating only the first six beats of the typical samba-batucada pattern. It serves as the rhythmic foundation of the piece, being introduced by a brief conga solo, and played continuously through every section of the piece except for the rubato introduction and ending.

The image displays a musical score for the song "Xibaba" from the album *Electric Byrd*. The score is written in 3/2 time and consists of four staves, each representing a different instrument's ostinato pattern. The instruments are labeled on the left: E. PNO. (Electric Piano), HI-HAT, CONGA, and BASS. The E. PNO. staff uses a grand staff with a treble clef and a 3/2 time signature, showing a sequence of chords and single notes. The HI-HAT staff uses a single line with a double bar line and a 3/2 time signature, featuring a series of 'x' marks representing hits, with some grouped by a slur. The CONGA staff uses a single line with a double bar line and a 3/2 time signature, showing a sequence of notes and rests. The BASS staff uses a single line with a bass clef and a 3/2 time signature, showing a sequence of notes and rests. The score is divided into two measures by a vertical bar line.

Figure 5-4. Hi-hat, conga, bass, and electric piano ostinatos in “Xibaba”

Overall, folk music is a central part of *Electric Byrd*. References to elements of traditional West African and Brazilian styles can be found throughout the album. Despite the presence of many different rhythmic styles on the album, the combination of interlocking ostinatos and multiple percussionists that appears in each song contributes to the overall cohesiveness of the album.

Chapter Six: Growth

In their form and overall structure, the songs on *Electric Byrd* borrow from the conventions of post-bop and fusion jazz. First, *Electric Byrd* utilizes the “head-solos-head format” common to post-bop and many other styles of jazz (Waters 2015). This format, combined with the minimization of the composed melodies (as discussed in chapter four), places the emphasis on the improvisations of the musicians with the solo sections making up the majority of each song’s length. While “The Dude” and “Estavanico” (table 6-1) utilize simple variations on this standard format, the other two songs exhibit more unusual variations that more closely resemble non-conventional formats common to free jazz.

Estavanico	Introduction (rubato melody) 0:00-1:00	Melody 1:00-2:20	Solos 2:20-9:05	Melody 9:05-10:15	Collective Improv. 10:15-11:35
Essence	Introduction 0:00-1:54	(No Melody)	Solos 1:54-8:06	(No Melody)	Collective Improv. 8:06-10:42
Xibaba	Introduction (rubato melody) 0:00-3:00	Melody 3:00-4:10	Solos 4:10-7:48	Collective Improv. 7:48-10:13	Ending (rubato melody) 10:13-13:42
The Dude	Introduction 0:00-0:35	Melody 0:35-1:09	Solos 1:09-6:55	Melody 6:55-7:30	Ending 7:30-7:48

Table 6-1. The formats of songs from *Electric Byrd*

The format of “Xibaba” (table 6-1) omits a recapitulation of the melody as it was played before the solos, instead moving directly from the improvised solos to a recapitulation of the introduction for the ending. Though the introduction and ending are both abstract variations on the primary melody of the song, the lack of a complete recapitulation of the melody after the solos presents an unusual deviation from the standard format.

The format of “Essence” omits a melody entirely, leading straight from Byrd’s improvisations over the introduction into the improvised solos. The improvisational character of Byrd’s playing, combined with the lack of a recapitulation of the introduction, make it unclear if Byrd’s playing on the introduction is an abstract melody or just the beginning of his solo. As discussed in chapter four, this minimization of the role of melody is consistent with the melodic conventions of post-bop.

From fusion jazz, *Electric Byrd* references the extensive use of collective improvisation found in *Bitches Brew* and other Miles Davis fusion projects with brief collective improvisation sections on three of the four songs on *Electric Byrd*. The collective improvisation sections found on every song but “The Dude” are effective at creating tension and interest at key points in the music. On “Xibaba,” “Estavanico,” and “Essence” the collective improvisation sections come at or near the climaxes of the improvised sections.

The parts of the improvised sections with a single soloist develop in a manner reminiscent of post-bop. As the solo sections do not strictly adhere to “chorus structure,” or the repeating of the phrase structures and harmonies of the melodies, the rhythm section players are free from their traditional roles of preserving these structures through

the solo sections. The ensemble's approach on *Electric Byrd* closely resembles a technique used by the 1960s Miles Davis quintet known as "time, no changes," in which the rhythm section maintains accompaniment textures through the solo sections while it abandons "the underlying chorus structure, harmonic progression, and form stated during the head" (Waters 2015). In this improvisational technique, the lack of a predetermined structure for the solos both enables and requires the rhythm section to be highly active in shaping the overall direction of each solo.

In *Electric Byrd*, the ensemble primarily shapes the solos through increases in harmonic activity and dynamics. The soloists and rhythm section gradually increase the amount of harmonic superimposition they utilize through each solo, building up tension over time with the unusual dissonances that are created. Early on in each solo, the rhythm section and soloists briefly use superimposition to create tension by layering harmonies on top of each other. As the solos increase in intensity, they will use superimposition for longer periods, utilizing the tape-echo effect to create greater amounts of dissonance and tension.

In their approach to dynamics, the ensemble primarily makes use of dynamic shifts on the macro level, making shifts over periods of one to three minutes as they transition between soloists and sections of the format. Examination of waveform charts, such as the chart of "Essence" shown in figure 6-1, delineate how the overall volume of a song fluctuates over time. The charts illustrate how Byrd's ensemble establishes a wide range of dynamics, and how there are few instances of them shifting suddenly between dynamic levels. The ensemble facilitates changes in dynamics through orchestration and by communicating them through improvisation.

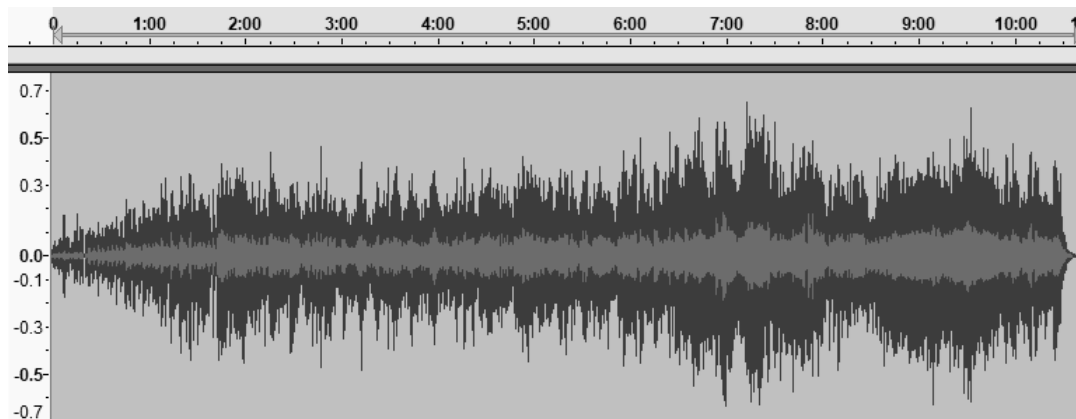


Figure 6-1. Waveform chart, “Essence”

Figure 6-1, a waveform chart of “Essence,” shows a long crescendo from the beginning to the 2:00 mark. The first part of this crescendo is accomplished through orchestration. From the beginning to 1:15, the entrances of the rhythm section, winds, and trumpet solo are staggered, creating a gradual increase in volume. The second part of the crescendo is led by Byrd’s solo, as he increases in volume and range leading into the next section of the form at the 2:00 mark. Foster leads a similar large-scale dynamic shift on his solo on “Essence”, which lasts from about 6:00 to 8:00. As shown on Fig 6-2, he leads the ensemble in a slow, one-minute build up to the peak of his solo at around the 7:00 mark.

The waveform chart from “Estavanico” (Fig 6-2) shows similar large-scale dynamic shifts. The introduction and melody sections that run from 0:00 to 2:00 have one long crescendo leading into the trumpet solo which is created by the staggered entrances of the guitar, bass, drums, and winds. There is also a long decrescendo section from the peak of Foster’s tenor solo (8:00) to the recap of the melody (roughly 9:00) which is facilitated by Foster. These ensemble-wide dynamic shifts are deliberate and happen

across the album. They are effective at articulating changes in format and shaping the long eight-to-thirteen-minute tracks.

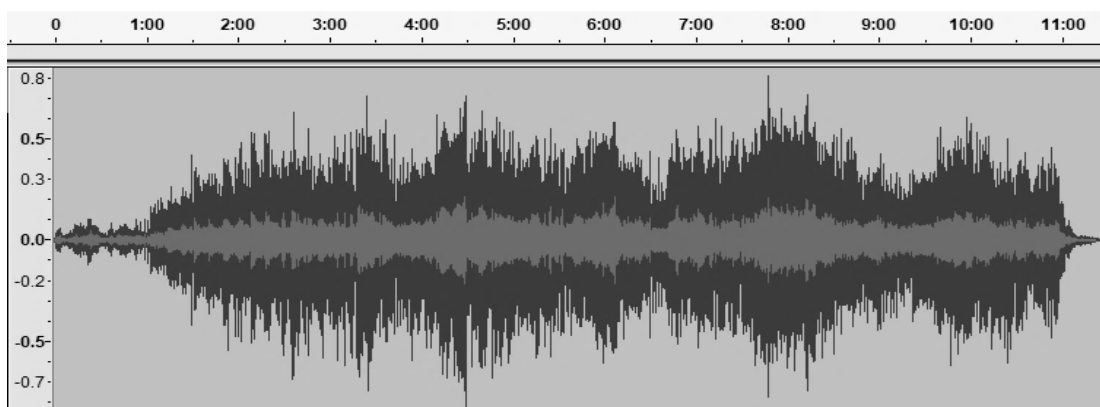


Figure 6-2. Waveform chart, “Estavanico”

The slow dynamic shifts on *Electric Byrd* are effective at fitting the unusual sonic environment created by the electronic effects. As the tape-echo and reverb cause sounds to decay much slower than normal, abrupt decreases in dynamics are much less effective than in natural acoustic settings. Given the ensemble almost certainly recorded live with the effects, the use of slow dynamic shifts is likely a deliberate reaction by the ensemble to the unusual sonic environment created by the electronic effects.

In general, the songs on *Electric Byrd* borrow from the conventions of post-bop and fusion jazz in coordinating all the musical elements. The album places the emphasis on the improvisations of the musicians with the variations on the “head-solos-head” format, collective improvisation sections, and lack of “chorus structure” in the solo sections.

Chapter Seven: Conclusion

Electric Byrd is a nuanced work of jazz fusion. It effectively combines modern jazz techniques with the music trends of the early 1970s. The album is best understood as a combination of psychedelic rock, post-bop jazz, funk with elements of traditional West African and Brazilian music.

Jan La Rue's analytical framework effectively demonstrates Byrd and his ensemble's compositional and improvisational approach to the music in *Electric Byrd*. In the category of sound, the album evokes psychedelic rock with its eclectic choices in instrumentation and with the application of electronic effects. In addition to blending acoustic and electric timbres, the large ensemble assembled for the album includes a collection of percussion and wind instruments, which come from a wide range of sources. The reverb and tape-echo effects create complex polyphonic textures which add layers of depth to the album's sound. The tape echo effect is used dynamically to highlight the soloists' timbres and to create tension at key points in their solos.

In the category of harmony, the album evokes post-bop with its combination of elements from modal jazz and free jazz. Features of modal harmony such as modal scales, the absence of functional chord progressions, bass ostinatos, and quartal harmonic structures can be found in all four of the album's songs. The musicians reference free-jazz by utilizing harmonic superimposition to obscure the underlying harmony of the

improvised sections. They often combine lengthier instances of harmonic superimposition with increases in the level of the tape echo effect to layer harmonies on top of each other and create tension.

In the category of melody, the album compromises between hard-bop and free-jazz melodic conventions by using minimalistic melodies. The melodies on all four songs are short, simple, and repetitive, placing few guidelines on the musicians for the improvised sections. The soloists focus on motivic development in their improvisations, using techniques such as rhythmic augmentation, rhythmic displacement, and transposition to develop and expand on short motifs.

In the category of rhythm, *Electric Byrd* evokes the eclecticism of psychedelic rock in its use of rhythms from many different styles of music. In addition to the use of rhythms from swing and funk, elements from traditional West African and Brazilian music are a central part of the album. The use of multiple percussionists and interlocking ostinatos common to traditional West African music can be found in every song on *Electric Byrd*. References to Brazilian styles such as bossa-nova, capoeira, and samba-batucada can be found in every song but “The Dude.”

In the category of growth, *Electric Byrd* borrows from the conventions of post-bop and fusion jazz. The album places the emphasis on the improvisations of the musicians with the variations on the “head-solos-head” format, collective improvisation sections, and lack of chorus structure. Electronic effects play a central role in shaping the ensemble's overall dynamics, and the individual approach of the soloists.

In conclusion, *Electric Byrd* was one of Byrd’s most ambitious fusion projects of his transitional period. It presents an intriguing outlier between the hard-bop and R&B

phases of Byrd's career. While it was not as commercially successful as his earlier or later projects, the album succeeds on an artistic level in combining cutting edge jazz techniques with 1970s trends in popular music.

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