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Structural elegance and harmonic disparity in selected solos by jazz trumpeters Freddie Hubbard and Woody Shaw

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**STRUCTURAL ELEGANCE AND HARMONIC DISPARITY
IN SELECTED SOLOS BY JAZZ TRUMPETERS
FREDDIE HUBBARD AND WOODY SHAW**

A Written Document

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree
Doctor of Musical Arts

in

The School of Music

by

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To my parents, Antonia and Bill Richardson

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ABSTRACT

Freddie Hubbard and Woody Shaw were two of the greatest figures in the jazz trumpet pantheon from their emergence in the 1960s until the 1980s. They were both unusual personalities; almost as well known for their volatility as for their instrumental virtuosity and creativity. Their association was characterized by competition and a certain degree of discomfort: Shaw, born nearly seven years after Hubbard, was often compared to his elder in a fashion that seemed to denigrate the younger trumpeter's originality; he in turn often denied that he'd ever been directly influenced by Hubbard, in what appears to have been an attempt to distance himself from his more famous colleague. In fact, the two shared many characteristics in their playing: aggressive tone qualities and articulation; a penchant for virtuosic, vertically-oriented playing that transcends idiomatic trumpet technique; and perhaps most significantly, an adventurous and exploratory sense of harmonic invention.

In 1985 and 1987 the two were brought together to record as co-leaders for the only times in their careers. These sessions present an unusual opportunity for students of jazz: to hear two of the most important trumpeters in mainstream jazz performing together in a setting which allows for convenient comparative analysis of their respective styles.

This study presents an analysis of eight solos and one trading duet transcribed from four performances recorded during these two sessions. The analysis focuses on passages in each soloist's work that defy explanation in terms of conventional jazz harmony. The passages are labeled "Non-Idiomatic Chromatic Patches" and placed into six categories: 1) disguised traditional or idiomatic chromaticism; 2) use of contour/sequence; 3) progressive modal agreement; 4) use of rhythmic devices; 5) alternative dominant chord chromaticism; and 6) modal reharmonization.

The study reveals a number of ways in which the two soloists diverge in their approaches, as well as what they have in common. It provides ample opportunities for students of jazz improvisation to place Shaw's and Hubbard's improvisational languages under the microscope. Ultimately, the objective is to allow such students to borrow from the techniques of these jazz giants, in order to enhance their own approaches to improvisation.

CHAPTER 1 -- INTRODUCTION

This study is a comparative exploration of harmonic, melodic, and rhythmic characteristics of the improvisational styles of jazz trumpeters Freddie Hubbard and Woody Shaw. The specific materials to be examined are six solos based on the chord changes to three compositions recorded in 1985 and 1987, and initially released on two albums: *Double Take* and *The Eternal Triangle*. The focus of this study concerns improvised passages that defy explanation in terms of conventional, idiomatic jazz harmony, as well as on the melodic, rhythmic and structural patterns that underlie these passages. The purpose is to gain insight into important dimensions of the improvisatory language of these two jazz artists through close examination of particular improvised passages in the transcriptions. These insights should be of great value to students of the music of Freddie Hubbard and Woody Shaw.

Since a major portion of this project concerns passages that do not easily mesh with conventional and idiomatic jazz theory, I have adopted the term Non-Idiomatic Chromatic Patch¹ (or NIC) to label them. In using harmonically incongruous or non-idiomatic language while improvising on tonal material, the soloist is walking a sort of tightrope of musical expression. The purpose of taking this step is to generate more harmonic color, more expressive interest than that afforded by conventional chromaticism. A balance, however, must be struck between color and clarity, or the effect can very easily become messy or noisy, or might not, for a lack of a better term, make sense. The effect is of stretching the harmonic fabric of the music without tearing it altogether and thereby rendering the music incoherent in terms of its own compositional and improvisatory language. According to the *Grove Music Online*, tonality refers to “arrangement of musical phenomena around a referential tonic in European music from about

1600 to about 1910... In its power to form musical goals and regulate the progress of the music towards these moments of arrival, tonality has become, in Western culture, the principal musical means with which to manage expectation and structure desire.”² In spite of its remarkable complexity, the music examined in this study is unambiguously tonal, and as such it requires of its successful performers that they honor the inescapable supremacy of tension-and-release that has characterized tonal music for some four hundred years. Accordingly, Shaw and Hubbard, especially in their most successful moments, display an elegant ability to resolve the unusually dissonant moments they create in ways that preserve the harmonic integrity of the phrase, or indeed the solo, as a whole. This resolution, or the return to "inside" (that is, traditional diatonicism and chromaticism) playing and the fashion in which it is done, is as important as having made the musical decision to play "outside" (that is, using chromaticism to “break rules”) in the first place.

In examining these passages, I have found that the improvisatory techniques they reveal can be classified into six general categories. They are:

- 1) Disguised traditional or idiomatic reharmonization
- 2) Use of contour/sequence
- 3) Use of progressive modal agreement
- 4) Rhythmic devices (including harmonic anticipation/suspension)
- 5) Alternative dominant chord chromaticism
- 6) Modal reharmonization

By the mid-1980s, trumpeters Freddie Hubbard and Woody Shaw had earned recognition as established masters in jazz. Both had risen to artistic prominence in the early 1960s as sidemen of famous bandleaders. Both had subsequently become established as important

recording artists, composers, and bandleaders in their own right by the time they first recorded together as co-leaders in 1985. It is easy to argue that, as Dizzy Gillespie became an elder statesman of jazz (with a concurrent decline in his spectacular trumpet facility) and Miles Davis continued to explore non-jazz idioms, Hubbard and Shaw had taken their places as the pre-eminent trumpeters of “mainstream” jazz.

It is significant that these two had even been brought together to record these sessions.³ As producer Michael Cuscuna admitted, “Getting the two most volatile and most creative living jazz trumpeters together in a non-competitive musical situation might have seemed sheer folly.”⁴ Both trumpeters had earned the awe of other players for their technical virtuosity, their conceptual adventurousness as improvisers and composers, and their considerable “pedigrees.” Both artists performed and recorded with virtually every major jazz figure since 1961. On the other hand, both men had earned reputations for difficult behavior and, particularly in Hubbard’s case, a penchant for megalomania. While Hubbard’s bandstand behavior was often shocking (there have been bootleg recordings in circulation of Hubbard abusing European audiences with racial epithets⁵), Shaw was inclined to have fits of depression, in particular due to frustration at his own playing. Between sets at a live recording session with Joe Henderson at the Lighthouse, a San Francisco jazz club, Shaw even attempted to destroy his own trumpet in a sudden fit of rage.⁶

Beyond these anecdotes illustrating “colorful” personality, there are other issues that make the idea of these two figures recording together as co-leaders a complex proposition. Shaw, six-and-one-half years Hubbard’s junior, had often been compared to Hubbard, a comparison he seems often to have rejected. On the contrary, Shaw had claimed never to have been directly influenced by Hubbard.⁷ It is difficult to determine the truth of this matter. Superficially, the two

sound similar in a number of ways: both approach the instrument with aggressive, extroverted, crackling tone qualities; both have similarly incisive approaches to articulation; both play with a virtuosic complexity that seemed to transcend conventional trumpet technique; and both seem to be interested in advanced harmonic concepts, in particular applying polytonal approaches to improvisation. Furthermore, the latter two considerations seem related to one unusual issue: both players, while deeply familiar with earlier trumpet models, seem to have taken their technical and harmonic ideas from saxophonists. Shaw cited multi-reed player Eric Dolphy and tenor giant John Coltrane as major influences⁸, and Hubbard is quoted as having preferred to “practice with saxophonists.”⁹ The technical transcendence mentioned above is typified by the unusually wide intervals often employed by both players, intervals that defy “natural” idiomatic trumpet playing and that seem derived more from the instrumental language of reed-players and keyboardists than from brass players.¹⁰

By 1985, there were certainly reasons for a degree of tension to exist between the two trumpet giants. These issues can be traced to one fundamental cause: however similar their beginnings, the careers of Hubbard and Shaw had unfolded very differently over the decades. Hubbard had seen a very high degree of artistic and commercial success both as a sideman and a bandleader. His swaggering style and relatively accessible approach, as well as his willingness to experiment with more commercially-oriented projects in the 1970s, had all led to a level of fame that rivaled any other trumpet player in jazz.

Woody Shaw was not so lucky. After his initial success as a sideman, his career did not progress as quickly as would have been predicted. He decided to take matters into his own hands early on, recruiting such Blue Note label luminaries as Herbie Hancock, Joe Henderson and Joe Chambers to record a number of his own compositions in 1965, but could convince no label to

release the tracks. They would not be released for the first time until over twenty years later on the Muse label, under the title *Cassandranite*.¹¹ While Shaw recorded a number of leader dates for several labels, including three projects for Columbia, and although he toured for several years as the leader of his own quintet, he never managed to approach Hubbard's fame. Although he has been revered by musicians to a degree approaching Hubbard, the difference in public exposure and recognition (and, correspondingly, financial reward) has been considerable. The *Double Take* sessions presented a situation wherein the younger Shaw was being asked to record with his elder, presumptive mentor (despite his occasional denials), and a figure of considerably greater fame. Hubbard, for his part, would have been aware of these dynamics too. Therefore, each man would quite naturally have felt the need to assert themselves: Shaw, to prove that his artistic voice is his own, not an inferior imitation of Hubbard's; and Hubbard, to assert that his trumpet hegemony is justified, or at the very least that he can hold his own with the younger underdog.

While these considerations may seem peripheral at best, they may have contributed to the value of these sessions with respect to this topic of study. Other than the 1985 and 1987 sessions, there are virtually no opportunities to hear Hubbard and Shaw on the same tunes, with the same rhythm section, on the same recording dates.¹² Therefore, any important variables that might have contributed to differences in their approach have been removed from the equation. Furthermore, the competitive element yields another benefit: while both artists have arguably done more convincing work on a purely aesthetic level on earlier recording projects, no other projects have brought the salient characteristics of their respective styles into such sharp relief. Both are "showing off," to all appearances. This display may not yield the most profound music-making, but it does allow each man's improvisational prowess to be put under the microscope all

the more easily. Shaw, to some degree dominated by Hubbard's formidable technical facility and range, outdoes himself in terms of harmonic exploration. Hubbard, for his part, is not to be outdone in this area either. While Shaw essentially plays catch-up in terms of Hubbard's facility, Hubbard does the same, and with somewhat greater success, in terms of Shaw's harmonic invention. Shaw's domination in terms of harmonic and chromatic audacity leads Hubbard to extend his own concept to his very limits; perhaps beyond his previous limits.¹³

Accordingly, *Double Take* and *The Eternal Triangle* provide us with a distillation of the salient features of Hubbard's and Shaw's respective styles. It is my hope that a detailed analysis of these features will yield objectively verifiable information about their shared characteristics in terms of harmonic and melodic content, as well as ways in which they diverge. It is also my opinion that the acts of transcribing and analyzing jazz compositions and improvised solos are absolutely vital to a jazz musician's mastery of the idiom and of his or her own creative voice.

CHAPTER 2 -- THE NON-IDIOMATIC CHROMATIC PASSAGES

As stated earlier, this music contains passages that defy traditional analysis. It is these unusual and intriguing sections that warrant our attention. I have discovered that the improvisations contained in these NIC Patches can be divided into six broad categories. A large number of the patches display more than one of the six approaches in a single passage, and some use several.

DISGUISED TRADITIONAL OR IDIOMATIC REHARMONIZATION

This refers to passages that sound unusual and surprising, but that reveal themselves through careful analysis to be comprised of more traditional or idiomatic practice. Often this involves a conventional set of note choices in a reharmonized passage that are used to create a gesture of unusual shape.

USE OF CONTOUR/SEQUENCE

This involves the use of intervallic structure to create cohesion in the midst of harmonic incongruence. It can involve the repetition of similar gestures at different transpositions; the creation of symmetry in a sequence of intervals; and the creation of familiar structures (such as triads) that serve to imply reharmonization without employing chromaticism (e.g., an F major triad when the key is in D minor).

USE OF PROGRESSIVE MODAL AGREEMENT

This approach refers to the practice of gradually employing less tonally-disruptive chromaticism in the course of a passage, until the passage resolves to a diatonic model. It may be manifested as movement from apparently random chromaticism to diatonicism, or as a

“dovetailing” (wherein one mode leads fluidly into another through common tones and leading tones) of two modes in the direction of less chromaticism.

RHYTHMIC DEVICES (INCLUDING HARMONIC ANTICIPATION/SUSPENSION)

This approach involves harmonic anticipation and suspension (i.e., implying a chord/key area before or after it is prescribed in the chord changes of the composition) and such effects as hemiola, which can create harmonic tension by gradually displacing a rhythmic gesture from the prescribed chord changes.

ALTERNATIVE DOMINANT CHORD CHROMATICISM

This refers to the reharmonization of dominant chords as they resolve to the tonic in non-idiomatic fashion; for example, reharmonizing an F^7 chord as A major rather than F^7 altered or F^{7b9} would create chromatic tension in the movement from dominant to tonic, but would do so in an non-idiomatic fashion.¹⁴

MODAL REHARMONIZATION

This is the practice of reharmonizing a prescribed chord/scale or a chord progression of any length with one or more clearly defined modes foreign to the progression. For example, one could play a gesture in F^\sharp major over a ii-V-I progression in A major (B-7, E7, A maj.)

CHAPTER 3 -- ANALYSIS

In this chapter I examine the music that inspired this research project. I shall present transcriptions of the three compositions, along with the solos performed by each soloist on each composition. In addition, a small number of the NIC Patches will be explicated in order to illustrate examples of all six categories.

Introduction MOONTRANE by Woody Shaw

The musical score for 'Moontrane' by Woody Shaw is presented in a single staff with a key signature of two flats (B-flat and E-flat) and a 4/4 time signature. The score includes measure numbers 7, 13, 18, 22, 28, and 32. Chordal annotations are placed above the staff at various points: D-11 at the beginning, BbΔ#11 at measures 7 and 28, A- at measure 13, C- at measure 18, Aø7 and D7alt at measure 22, and C- at measure 32. Other annotations include Bb- at measure 28, A- at measure 28, and (C-7) and F7 at measure 32. The score features several triplet markings (indicated by a '3' over a group of notes) and various articulations such as accents and slurs.

Example 1. *Moontrane* by Woody Shaw

MOONTRANE

Moontrane is highly unusual in terms of its harmonic structure. The opening twelve bars serve as an introduction, and the “head” proper begins in m. 13. In measures 17-18, the ascending line of minor chords is both colorful and very challenging for an improviser accustomed to navigating conventional chord progressions. The same principle applies in mm. 26-28 where descending minor chords are presented in such a fashion that the roots outline two alternating diminished triads, G dim. and F dim. Again, these structural and harmonic elements serve to add color at the same time that they force an improviser out of his or her harmonic “comfort zone.” The soloists both demonstrate a mixed approach to this composition, improvising in a harmonic style that falls between the conservatism of “Down Under” and the relative adventurousness of “Lotus Blossom” and “Hubtones.”¹⁵ This may be due to passages that are relatively easy to reharmonize, and others in that the inherent colors of the progression are easily lost in the process of reharmonization. Shaw takes the first solo, followed by Hubbard.

Woody Shaw's Solo

The musical score for Woody Shaw's solo on *Moontrane* is presented in four staves, measures 1 through 18. The key signature is B-flat major (two flats), and the time signature is 4/4. The notation includes various chord symbols above the staff and melodic lines with accidentals and articulation marks.

Measure 1: Chord symbols B^bΔ^{#11} and A-. Melody starts with a quarter rest, followed by eighth notes G, A, B, and A.

Measure 2: Chord symbols A- and C-. Melody continues with eighth notes G, A, B, and A.

Measure 3: Chord symbols C- and D-. Melody continues with eighth notes G, A, B, and A.

Measure 4: Chord symbols C- and D-. Melody continues with eighth notes G, A, B, and A.

Measure 5: Chord symbols C- and D-. Melody continues with eighth notes G, A, B, and A.

Measure 6: Chord symbols E^b-, F-, D^Δ, C-7, F7, and B^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 7: Chord symbols E^b-, F-, D^Δ, C-7, F7, and B^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 8: Chord symbols E^b-, F-, D^Δ, C-7, F7, and B^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 9: Chord symbols E^b-, F-, D^Δ, C-7, F7, and B^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 10: Chord symbols E^b-, F-, D^Δ, C-7, F7, and B^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 11: Chord symbols E^b-, F-, D^Δ, C-7, F7, and B^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 12: Chord symbols C-, D-, E^b-, F-, D^Δ, F-7, B^b7, and E^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 13: Chord symbols C-, D-, E^b-, F-, D^Δ, F-7, B^b7, and E^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 14: Chord symbols C-, D-, E^b-, F-, D^Δ, F-7, B^b7, and E^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 15: Chord symbols C-, D-, E^b-, F-, D^Δ, F-7, B^b7, and E^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 16: Chord symbols C-, D-, E^b-, F-, D^Δ, F-7, B^b7, and E^bΔ. Melody continues with eighth notes G, A, B, and A.

Measure 17: Chord symbols A^ø7, D7alt, G-, F-, B^b-, and A^b-. Melody continues with eighth notes G, A, B, and A.

Measure 18: Chord symbols A^ø7, D7alt, G-, F-, B^b-, and A^b-. Melody continues with eighth notes G, A, B, and A.

Example 2. Woody Shaw's solo on *Moontrane* (con'd.)

NIC PATCH MTS 2

23 D^b- $B-$ $B^b\Delta^{11}$ $A-$

NIC PATCH MTS 3

28 $C-$ $D-$ E^b- $F-$ D^Δ C^{-7} F^7

33 $B^b\Delta^{11}$ $A-$ $C-$ $D-$

NIC PATCH MTS 4

38 E^b- $F-$ D^Δ C^{-7} F^7

41 $B^b\Delta$ $A-$ $C-$ $D-$

46 E^b- $F-$ D^Δ $F-$ B^b7 $E^b\Delta$

NIC PATCH MTS 5

51 A^{67} $D^7\text{alt}$ $G-$ $F-$ B^b- A^b- D^b- $B-$

56 $B^b\Delta$ $A-$

60 $C-$ $D-$ E^b- $F-$ D^Δ $B^b\Delta$

66 $A-$ $C-$ $D-$ E^b- $F-$

NIC PATCH MTS 6

71 D^{Δ} C^{-7} F^7 $B^b\Delta$

75 A^{-} C^{-} D^{-} E^b- F^{-} D^{Δ}

80 F^{-7} B^b7 $E^b\Delta$ $A^{\emptyset7}$ $D^7\text{alt}$

NIC PATCH MTS 7

85 G^{-} F^{-} B^b- A^b- D^b- B^{-} $B^b\Delta$

90 A^{-} C^{-} D^{-}

94 E^b- F^{-} D^{Δ} $B^b\Delta$

84 A \emptyset 7 D7alt G- F- B \flat - A \flat -

<210> <210> <210> <210> <210>

sequences of gestures with similar contours

fourths-based gestures, diatonic to chords

87 D \flat - B- 3 5 B \flat Δ

anticipation of B \flat major

augmentation of gesture facilitates smooth resolution to B \flat major

Example 3. NIC Patch MTS 7

This passage offers an example of category 1), **disguised traditional or idiomatic chromaticism**. The <210> gestures¹⁶ in mm. 85-86 are similar to those used by Shaw in other passages when reharmonizing (see, for example, NIC Patches LBS 3, 5 and 6 on pp. 24-25). In this instance, however, Shaw is simply following the keys areas. That is, the contour of the gestures fall outside the realm of a traditional bebop, but in truth there is virtually no chromaticism. The other approaches used in this NIC Patch fall under the following categories:

1) Contour/sequence

This passage demonstrates the use of fourth-based (<210>) gestures; as stated above, they are often used to reharmonize, but in this case are diatonic to chords in m. 86.

2) Rhythmic devices

The chromaticism is not idiomatic in mm. 87-88; B \flat major (lydian) is anticipated by one-and-a-half measures, facilitated by similar gestures (in terms of contour) to m. 86.

Freddie Hubbard's Solo

NIC PATCH MTH 1

B $\flat\Delta\sharp 11$ A- C- D- E \flat - F-

7 D Δ C-7 F7 B $\flat\Delta$ A-

NIC PATCH MTH 2

13 C- D- E \flat - F- D Δ 3 F-7 B $\flat 7$

17 E $\flat\Delta$ A $\emptyset 7$ D7alt G- F-

NIC PATCH MTH 3

22 B \flat - A \flat - D \flat - B- B $\flat\Delta\sharp 11$

NIC PATCH MTH 4

27 A- C- D- E \flat - F-

31 D Δ 3 C-7 F7 B $\flat\Delta\sharp 11$

35 A- C- D- E \flat - F- D Δ 3

40 C-7 F7 B $\flat\Delta$ A- C- D-

46 E \flat - F- D Δ F-7 B $\flat 7$ E $\flat\Delta$ 8va A $\emptyset 7$ D7alt

Example 4. Freddie Hubbard's Solo on *Moontrane* (con'd.)

8va-----

53 G- F- B^b- A^b- D^b- B- B^bΔ

NIC PATCH MTH 5 loco NIC PATCH MTH 6

58 A- C- D-

62 E^b- F- D^Δ B^bΔ

67 A- C- D-

70 E^b- F- D^Δ C-7 F7 B^bΔ

NIC PATCH MTH 7

74 A- C- D-

78 E^b- F- D^Δ F-7 B^b7 E^bΔ

NIC PATCH MTH 8

82 A[∅]7 D⁷alt G- F-

86 B^b- A^b- D^b- B- B^bΔ

91 A- C- D- E^b- F-

The image displays two staves of musical notation. The top staff, labeled with measure 59, features a treble clef and a key signature of one flat (B-flat). It contains a melodic line with several notes, some of which are tied across measures. Above the staff, the chord D^Δ is indicated. The bottom staff, labeled with measure 62, also features a treble clef and a key signature of one flat. It contains a melodic line with notes and rests. Above the staff, the chord $B^\flat\Delta$ is indicated. Below the staves, there are several annotations and brackets. For measure 59, the annotation 'A minor' is placed above the staff, and 'A minor' is placed below the staff. For measure 62, the annotation 'A minor' is placed above the staff, and 'A minor' is placed below the staff. Additionally, there are annotations for 'C major' and 'Eb major' below the staff for measure 62. A bracket labeled 'chord roots outline diminished 7th chord' spans across measures 59 and 62. Another bracket labeled 'chord roots outline diminished 7th chord' spans across measures 62 and 63.

Example 5. NIC Patch MTH 6

This NIC Patch demonstrates category 2), **use of contour/sequence**. Hubbard employs sequenced scalar gestures in mm. 61 and 62 which create continuity in the midst of harmonic incongruity. The scale gestures outline C major over C minor; $E\flat$ major over D minor; and $A\flat$ minor on $E\flat$ minor. Nonetheless, the ear accepts the “wrong” notes in the passage because of the coherence of the gestures.

The other approaches used in this NIC Patch fall under the following categories:

1) Modal reharmonization

Clearly stated gestures and consistent pitch collections demonstrate several small scale modal reharmonizations across the passage.

2) Progressive modal correspondence

Hubbard appears to reharmonize the entire passage with the tonics of his reharmonized chords outlining an A diminished 7th chord; the structure of this gestures creates gradually progressive modal agreement. On a level of more detail, the relative dissonance of the gestures diminishes as the passage progresses: C major over C minor is extremely dissonant; E \flat major (or A \flat melodic minor) over D minor is less dissonant and may be heard as a phrygian cell; A \flat minor is diatonic to E \flat minor; the gesture over F minor is diatonic to the chord except for the C flat (B \natural), which anticipates the D major arrival and is heard as relatively consonant.

LOTUS BLOSSOM by Kenny Dorham

The musical score for "Lotus Blossom" by Kenny Dorham is presented in 4/4 time. It consists of four staves of music. The first staff begins with a D- chord and continues with C-7, F7, and B \flat Δ . The second staff starts at measure 5 with B \emptyset 7, B \flat 7, A7 \flat 9, D-, E \emptyset 7, and A7 \flat 9. The third staff begins at measure 9 with D- simile, C-7, F7, B \flat Δ , B \emptyset 7, and B \flat 7. The fourth staff starts at measure 14 with A7 \flat 9, D-, A \emptyset 7, and D7alt. The notation includes various rhythmic values, accidentals, and dynamic markings.

Example 6. *Lotus Blossom* by Kenny Dorham (con'd.)

19 G- G \emptyset 7 C \emptyset 7alt F Δ

24 E \emptyset 7 A \emptyset 7b9 D- C-7 F7

28 B Δ B \emptyset 7 B \flat 7 A \emptyset 7b9 D- solo break E \emptyset 7 A \emptyset 7b9

LOTUS BLOSSOM

This is a standard formula in jazz: the 32-bar song form. Its modulation to B \flat major from D minor, while not the closest relationship possible, nonetheless is not unusual in jazz. The chord progression on the bridge is a familiar one, also used on such jazz standards as “Alone Together” and “A Night in Tunisia.” Both soloists are particularly harmonically adventurous on this performance. It may be that the comfortable, conventional chord progressions encourage such exploration. Hubbard takes the first solo, followed by Shaw.

Freddie Hubbard’s Solo

D- solo break E \emptyset 7 A \emptyset 7alt D-

5 B Δ B \emptyset 7 B \flat 7 A \emptyset 7b9 D- E \emptyset 7 A \emptyset 7b9

Example 7. Freddie Hubbard’s Solo on *Lotus Blossom* (con’d.)

11 D- C-7 F7 B^bΔ [B^ø7 B^b7

NIC PATCH HLB 1

16 A⁷b9 D- A^ø7 D⁷alt

NIC PATCH HLB 2

21 G- G^ø7 C⁷alt F^Δ

26 E^ø7 A⁷b9 D- C-7 F7 B^bΔ

31 B^ø7 B^b7 A⁷b9 D- E^ø7 A⁷b9 D- 3 3 3

36 C-7 F7 B^bΔ 3 B^ø7 B^b7 3 3 3

40 A⁷b9 D- E^ø7 A⁷b9 D- pitches approximate

45 C-7 F7 B^bΔ B^ø7 B^b7 A⁷b9 D- 3

50 A^ø7 valve tremolo D⁷alt G- 3 3 3 3 3 3 3 3 3

55 G^ø7 valve tremolo C⁷alt F^Δ E^ø7 A⁷b9 3 3 3 3 3 3 3

NIC PATCH HLB 3

59 D- C-7 F7 B Δ B \emptyset 7 B \flat 7

64 A $7\flat 9$ D- E \emptyset 7 A $7\flat 9$ valve tremolo

68 C-7 F7 B Δ B \emptyset 7 B \flat 7

NIC PATCH HLB 4

72 A $7\flat 9$ A $7\flat 9$ E \emptyset 7 A $7\flat 9$ D- 3

77 C-7 F7 B Δ B \emptyset 7 B \flat 7 A $7\flat 9$ D- 3

82 A \emptyset 7 D 7 alt G- 8va

87 G \emptyset 7 C 7 alt F Δ E \emptyset 7 A 7 alt 3 D- 8va

93 (8) C-7 F7 B Δ B \emptyset 7 B \flat 7 simile A $7\flat 9$

97 D- E \emptyset 7 A $7\flat 9$ D-

100 C-7 F7 B Δ

103 $B^{\circ 7}$ $B^b 7$ A^{7b9} D^- $E^{\circ 7}$ A^{7b9} D^- valve tremolo

108 valve tremolo C^{-7} F^7 $B^b \Delta$ $B^{\circ 7}$ $B^b 7$ A^{7b9}

113 D^- $A^{\circ 7}$ D^{7b9}

117 G^- $G^{\circ 7}$ $C^7 \text{alt}$ (rhythm approximate between mm. 120-128)

121 F^{Δ} $E^{\circ 7}$ A^{7b9} D^- 3 3 3 3

124 3 3 C^{-7} F^7 $B^b \Delta$ 3 3 3

127 $B^{\circ 7}$ $B^b 7$ $A^{7 \text{alt}}$ 3 3 3 3 D^- $E^{\circ 7}$ A^{7b9} D^-

132 C^{-7} F^7 $B^b \Delta$ $B^{\circ 7}$ $B^b 7$

136 $A^{7 \text{alt}}$ D^- $E^{\circ 7}$ $A^{7 \text{alt}}$ D^- C^{-7} F^7

142 $B^b \Delta$ $B^{\circ 7}$ $B^b 7$ $A^{7 \text{alt}}$ D^-

NIC PATCH HLB 5

148 A \emptyset 7 D 7 alt G- 3

152 G \emptyset 7 C 7 alt F Δ E \emptyset 7 A 7 alt D-

157 C- 7 F 7 B $^b\Delta$ B \emptyset 7 B b 7

161 A 7 alt D- E \emptyset 7 A 7 alt D-

tonally non-functional pitches; high degree of symmetry to intervals

11 B $^b\Delta$ B \emptyset 7 B b 7 A $^7b^9$

progressive movement in direction of greater modal correspondence

14 D- 2, 2, 4, 3, 1 sequence of intervals (similar to Ex. 6a4) A \emptyset 7

Example 8. NIC Patch LBH 1

This passage demonstrates Hubbard's approach to using **progressive modal agreement**. In mm. 11-12, some of the pitches correspond to the prescribed chords, but they are effectively non-functional in terms of tonality. The A \flat and B \flat played over B diminished 7, as well as the A \sharp and B \sharp played over the B \flat 7 chord, serve to create dissonance and to obscure any sense of key area. As the gesture progresses, however, Hubbard's choices of pitches reflect the modes

prescribed by the underlying chords with growing agreement. This culminates in m. 14, bb. 3-4, wherein the descending D minor arpeggio reflects an explicit diatonic acknowledgement of the prescribed chord. The passage ends in m. 16 with Hubbard having maintained this total agreement between chord and mode.

The other approaches used in this NIC Patch fall under the following categories:

1) Contour/sequence

In the midst of the non-functional note choices in m. 12, there is a coherent structure which lends continuity and helps to convince the listener to accept the chromatic incongruity. Let us look more closely at the context in that the “atonal structures” occur. In mm. 11-13, the pattern of intervals is +2, +4, -1, +1, 1, +1, +1, +2, +4, -1, -1, -1 (ending on b. 3 of m. 13). There is a high degree of symmetry pivoting around the seventh interval, a +1 (B_♭-B_♮). If direction is ignored, the sequence of intervals surrounding that pivot point is **identical** in each group of 6 intervals. Furthermore, there is reason to believe that this intervallic symmetry is not random or incidental: a nearly identical sequence of intervals appears in NIC patch LBH 4 (see mm. 75-76 of Hubbard’s solo on “Lotus Blossom”).

Woody Shaw’s Solo

Example 9. Woody Shaw’s solo on *Lotus Blossom* (con’d.)

11 C-7 F7 B^bΔ B^ø7 B^b7 A⁷b9

15 D- A^ø7 D⁷alt

19 G- G^ø7 C⁷alt

23 F^Δ E^ø7 A⁷b9 D- C-7 F7

28 B^bΔ B^ø7 B^b7 A⁷b9 D- NIC PATCH LBS1

32 E^ø7 A⁷b9 D- C-7 F7 B^bΔ NIC PATCH LBS 2

37 B^ø7 B^b7 A⁷b9 D- E^ø7 A⁷b9 D- NIC PATCH LBS 3

43 C-7 F7 B^bΔ B^ø7 B^b7 A⁷b9 D- NIC PATCH LBS 3

49 A^ø7 D⁷alt G-

53 G^ø7 C⁷alt F^Δ E^ø7 A⁷b9 D-

58 C-7 F7 B^bΔ B^ø7 B^b7 A⁷b9 D- E^ø7 A⁷b9

65 D- C-7 F7 B^ø7 B^b7

NIC PATCH LBS 4 3

70 A⁷b9 D- E^ø7 A⁷b9 D-

NIC PATCH LBS 5

75 C-7 F7 B^bΔ B^ø7 B^b7 A⁷b9 D-

80 A^ø7 D⁷alt G-

85 G^ø7 C⁷alt F^Δ E^ø7 A⁷alt D-

91 C-7 F7 B^bΔ E^ø7 A⁷b9 D- E^ø7 A⁷b9

NIC PATCH LBS 6 3 3 3

97 D- C-7 F7 B^bΔ

101 B^ø7 B^b7 A⁷b9 D- E^ø7 A⁷b9

NIC PATCH LBS 7

105 D- C-7 F7 B^bΔ

The image displays a musical score in treble clef with a key signature of one flat (B-flat). The score is divided into two systems. The first system contains measures 109, 114, 118, and 123. The second system contains measures 98 and 101. Chord annotations are placed above the notes, often with brackets indicating specific intervals or groups of notes. Measure 109 features chords Bø7, Bb7, A7b9, D-, Aø7, and D7b9. Measure 114 features G-, Gø7, and C7alt. Measure 118 features FΔ, Eø7, A7b9, D-, C-7, and F7. Measure 123 features BbΔ, Bø7, Bb7, A7alt, D-, E7, and A7b9. Measure 98 features D-, F# hexatonic, C-7, F7, A minor, BbΔ, and II in D minor. Measure 101 features Bø7, Bb7, A7b9, D-, V in D minor (implied), Ab dim. WH, Eb dim. WH, G dim. WH, and B dim. WH.

Example 10. NIC Patch LBS 6

This NIC patch demonstrates Shaw's use of **modal reharmonization**. Throughout the passage, Shaw employs pitches which clearly fit identifiable modes. One particular mode which appears throughout his work is comprised of the pitches F#, G#, A#, C#, D#, E#. I refer to it as the F# major hexatonic. This can also be viewed as a major scale with no fourth scale degree. [see appendix B, p. 58] Shaw uses this scale to reharmonize D- and C-7 in mm. 98 and 99. He uses various other modes in this passage which can be thought of in different ways: as substitute

modes or as substitute harmonic progressions, as Example 9 illustrates. In m. 102 he uses various permutations of the diminished scale to reharmonize the A^{7b9} to D minor progression. The ingenious dimension of this passage is the gradual diminution of dissonance Shaw creates as he arrives in the second measure of the D minor key area.¹⁷ This approach warrants another label for the same passage: the use of progressive modal agreement.

HUBTONES by Freddie Hubbard

no changes on head; only Bb7/F vamp

Example 11. *Hubtones* by Freddie Hubbard

HUBTONES

“Hubtones” is unusual in that the melody bears little structural resemblance to the harmonic context in that the soloists improvise: the “bebop” B \flat blues. Essentially, Hubbard has presented a fanfare gesture that repeats over a shifting, hemiola-infused rhythmic background. This larger gesture fits into a 12-bar form, but aside from this, bears no resemblance to a blues form. After the melody is sounded twice, the rhythm section launches directly into a B \flat blues form on which the soloists improvise.

This tune is performed at a “medium up” tempo, and its relatively high energy, along with its relatively static harmonic framework, seem to encourage the soloists to explore. There are many examples of the soloists playing against the changes, or reharmonizing in the non-idiomatic fashion that is the focus of this study.

Woody Shaw's Solo

The musical score for Woody Shaw's Solo on *Hubtones* is presented in six systems, each corresponding to a specific harmonic structure (NIC PATCH HTS 1 through 6). The key signature is B-flat major (two flats), and the time signature is 4/4. The score includes various chord changes and melodic lines, with some sections featuring triplets and rests.

NIC PATCH HTS 1 (Measures 6-10): Chords include B^b7, G⁷, C⁻⁷, and F⁷. The melody starts with a half rest, followed by a quarter note G, a quarter note A, a half note B, and a quarter note A.

NIC PATCH HTS 2 (Measures 11-14): Chords include B^b7, G⁷b⁹, C⁻⁷, F⁷, and B^b7. The melody starts with a quarter note G, a quarter note A, a half note B, and a quarter note A.

NIC PATCH HTS 3 (Measures 15-19): Chords include B^b7, E^b7, and B^b7. The melody starts with a quarter note G, a quarter note A, a half note B, and a quarter note A.

NIC PATCH HTS 4 (Measures 20-24): Chords include G⁷, C⁻⁷, F⁷, B^b7, G⁷b⁹, C⁻⁷, and F⁷. The melody starts with a quarter note G, a quarter note A, a half note B, and a quarter note A.

NIC PATCH HTS 5 (Measures 25-29): Chords include B^b7 and E^b7. The melody starts with a quarter note G, a quarter note A, a half note B, and a quarter note A.

NIC PATCH HTS 6 (Measures 30-34): Chords include B^b7, G⁷, C⁻⁷, F⁷, B^b7, G⁷b⁹, C⁻⁷, and F⁷. The melody starts with a quarter note G, a quarter note A, a half note B, and a quarter note A.

Example 12. Woody Shaw's Solo on *Hubtones* (con'd.)

35 B^b7 $G7^b9$ $C-7$ $F7$ B^b7

39 NIC PATCH HTS 7 E^b7

43 NIC PATCH HTS 8 B^b7 $G7$ $C-7$ $F7$

47 B^b7 $G7$ $C-7$ $F7$ B^b7 E^b7

54 B^b7 $G7$ $C-7$ $F7$ B^b7 $G7^b9$

60 $C-7$ $F7$ B^b7

65 NIC PATCH HTS 9 E^b7 B^b7 $G7$

69 $C-7$ $F7$ B^b7 $G7^b9$ $C-7$ $F7$ B^b7

74 E^b7 B^b7

80 $G7^b9$ $C-7$ $F7$ B^b7 $G7^b9$ $C-7$ $F7$

5

Example 13. NIC Patch HTS 5

This passage shows an example of Shaw's approach to **alternative dominant chromaticism**. It is not uncommon for a musician to reharmonize the tonic of a blues form so that it serves as a dominant chord to the IV chord. In this case, Shaw reharmonizes B \flat ⁷ as E major. The A \natural in the passage is significant because it clashes with a seventh scale degree of the prescribed mode (B \flat mixolydian), considered a vital, identifying tone by jazz musicians. In m. 27 the chromaticism is not as structurally unequivocal as in mm. 25-26, as Shaw creates a chromatic dovetailing effect before settling on the tonic note. This reharmonization of B \flat ⁷ as E major (or E mixolydian, if one considers the beginning of m. 27) is not idiomatic to bebop jazz and creates an unusual degree of harmonic tension. This alternative dominant chord dissonance underscores the diatonic arrival on E \flat ⁷.

The other approaches used in this NIC Patch fall under the following categories:

1) Progressive modal correspondence

We see a condensed version of this approach in this NIC Patch. It is achieved through the “chromatic dovetailing” technique mentioned above. In m. 27, Shaw creates a fluid transition from E major/mixolydian to B \flat ⁷ through a chromatic passage which effectively encloses B \flat as a pitch with the flat second scale degree followed by the fifth scale degree.

Freddie Hubbard’s Solo

The musical score is written in 4/4 time and consists of five staves. The key signature has two flats (B \flat and E \flat).

- Staff 1 (Measures 1-6):** Chords B \flat ⁷ and E \flat ⁷ are indicated above the staff.
- Staff 2 (Measures 7-12):** Chords B \flat ⁷, G⁷, C⁻⁷, F⁷, B \flat ⁷ G⁷ \flat ⁹, C⁻⁷, and F⁷ are indicated above the staff.
- Staff 3 (Measures 13-16):** Chord B \flat ⁷ is indicated above the staff. A bracket labeled "NIC PATCH HTH 1" spans measures 15 and 16, which contain a triplet.
- Staff 4 (Measures 17-20):** Chords E \flat ⁷, B \flat ⁷, and G⁷ are indicated above the staff. A bracket labeled "NIC PATCH HTH 2" spans measures 19 and 20, which contain a triplet.
- Staff 5 (Measures 21-27):** Chords C⁻⁷, F⁷, B \flat ⁷ G⁷ \flat ⁹, C⁻⁷, F⁷, and B \flat ⁷ are indicated above the staff.

Example 14. Freddie Hubbard’s Solo on *Hubtones* (con’d.)

NIC PATCH HTH 3

26 E^b7

30 B^b7 G⁷ C-⁷

34 F⁷ B^b7 G⁷b⁹ C-⁷ F⁷ B^b7

39 pitches smeared E^b7 NIC PATCH HTH 4

44 G⁷ C-⁷ F⁷ B^b7 G⁷b⁹ C-⁷ F⁷

49 B^b7 E^b7

54 B^b7 G⁷ C-⁷ F⁷

59 B^b7 G⁷b⁹ C-⁷ F⁷ B^b7 valve tremolo

64 tongued E^b7 B^b7 G⁷

69 C-⁷ F⁷ B^b7 G⁷b⁹ C-⁷ F⁷ B^b7

74

77

80

83

88

93

24

28

32

nearly identical gesture to m. 32-33 (8vb)

enclosure

reharmonized as Db major

idiomatic reharmonization as Bb altered

diatonic reharmonization as Ab major

reharmonization as G major

D major

nearly identical gesture to m. 25-26 (8va)

reharmonization as Db major

Example 15. NIC Patch HTH 3

This passage, the only NIC Patch to cover virtually an entire chorus, demonstrates a number of approaches. Among them is the use of **rhythmic devices**. Hubbard uses rhythmic emphasis in conjunction with clear, arpeggio-oriented contour to establish reharmonization. In some cases (mm. 25-26, m. 32-33) this applies to highly chromatic examples of modal reharmonization. In one case it applies to diatonic reharmonization: in m. 30, Hubbard plays an A \flat major nine arpeggio. There are no pitches in the measure which do not fit E \flat mixolydian (the prescribed mode over E \flat ⁷), but this is unusual nonetheless; the fourth scale degree is considered an “avoid note” (that is, a pitch that can be played but which should not receive melodic or rhythmic emphasis) by jazz musicians on a dominant seventh chord. In this case, Hubbard unequivocally builds a chord on this “avoid note” through his strong beat rhythmic placement and his use of an arpeggiated structure.

The other approaches used in this NIC Patch fall under the following categories:

1) Modal reharmonization

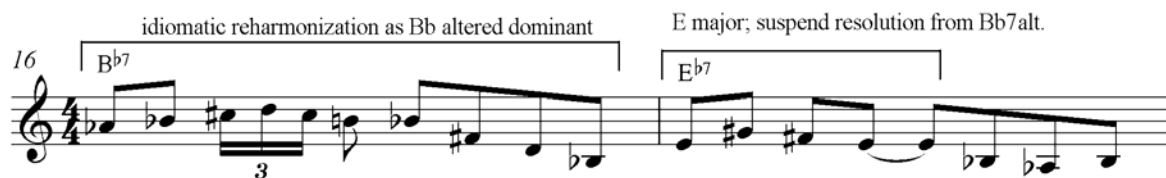
Hubbard employs modal reharmonization throughout the passages by relying on gestures which can be clearly identified as belonging to a particular mode.

2) Contour/sequence

His use of contour and sequence has already been described above; it should also be pointed out that he begins and ends the passage with virtually the same gesture in different octaves.

3) Disguised traditional or idiomatic reharmonization

Hubbard employs traditional reharmonization in mm. 27-28, wherein he reharmonizes B \flat ⁷ as B \flat altered dominant.



Example 16. NIC Patch HTH 1

This NIC Patch demonstrates another way in which Hubbard uses **rhythmic devices**. In this case, he uses suspension to manipulate the harmonic rhythm. In m. 17, he suspends the resolution of B \flat ⁷ altered (which sounds like E major on m. 17; B \flat altered dominant and E lydian dominant are identical modes) before resolving to the prescribed mode at the end of the measure.

The other approaches used in this NIC Patch fall under the following categories:

1) Disguised traditional or idiomatic reharmonization

As demonstrated in the previous example, Hubbard reharmonizes the tonic chord on this blues form as V⁷ of IV. He creates this effect by using the B \flat altered dominant mode rather than B \flat mixolydian. The choices of pitches are idiomatic, but the nature of the gesture, especially its harmonic suspension in m. 17, is unusual and highly colorful.

CHAPTER 4 – SUMMARY AND CONCLUSION

WOODY SHAW'S SOLOS

We have seen that Shaw uses techniques that fit into all six of our categories of NIC Patches. The number of occurrences of each category of NIC Patch tally up to the following figures.

Total number of NIC Patches in Shaw's 5 performances:	25
Number NIC Patches which use only one approach:	6
Number NIC Patches which use two approaches:	14
Number NIC Patches which use three approaches:	6
Number NIC Patches which use four approaches:	0

Number of occurrences of each approach:

1) Disguised traditional or idiomatic reharmonization:	2
2) Use of contour/sequence:	11
3) Use of progressive modal agreement	5
4) Rhythmic displacement (including harmonic anticipation/suspension)	11
5) Alternative dominant chord chromaticism	9
6) Modal reharmonization	13

Of the four categories, the most prominent for Shaw appears to be modal reharmonization. Significantly, this approach seems to appear primarily in two basic forms: Reharmonization with the F \sharp major hexatonic scale, and to a lesser degree, with some form of octatonic (diminished)¹⁸

scale. For more in-depth discussion Shaw's use of F \sharp major hexatonic to reharmonize various passages, please see Appendix C starting on p. 62.

The least frequently occurring approach is traditional or idiomatic reharmonization. Also, note that Shaw tends to use more than one approach in the majority of his NIC Patches. The large majority of Patches are comprised of two approaches, with an equal number of Patches using either one or three approaches.

FREDDIE HUBBARD'S SOLOS

We have seen that Hubbard, like Shaw, uses techniques that fit into all six categories of NIC Patches. The number of occurrences of each category of NIC Patch tally up to the following figures.

Total number of NIC Patches in Hubbard's 5 performances:	20
Number NIC Patches which use only one approach:	3
Number NIC Patches which use two approaches:	10
Number NIC Patches which use three approaches:	4
Number NIC Patches which use four approaches:	2

Number of Occurrences of Particular Approaches:

1) Disguised traditional or idiomatic reharmonization:	5
2) Use of contour/sequence:	12
3) Use of progressive modal agreement:	5
4) Rhythmic displacement (including harmonic anticipation/suspension):	8
5) Alternative dominant chord chromaticism:	4
6) Modal reharmonization:	10

Hubbard shows a distinct preference for two approaches: the use of contour/sequence and the use of modal reharmonization. It is noteworthy that he uses idiomatic reharmonization more frequently than one of the non-idiomatic approaches, alternative dominant chromaticism.

He often uses a mode derived from F# major (which is similar to Shaw's approach) to reharmonize passages. At other times, he combines rhythmic devices with contour to create diatonic reharmonization. That is, his emphatic rhythmic employment of chords which are similar in mode to the underlying chord in the progression constitutes a reharmonization which is at times virtually devoid of chromaticism.

Although it is not his most frequently used tool, his use of progressive modal agreement is especially dramatic and impressive. These approaches are often combined with contour devices to create a seemingly-random chromaticism that gradually and elegantly resolves to consonance at the end of the phrase and the arrival of the tonic.

If we compare Shaw's and Hubbard's respective approaches to non-idiomatic improvisation, we find some insights into what they share and what distinguishes them.

First, it is clear that Shaw produced 20% more "NIC Patches" in the solos (25 to Hubbard's 20). In addition, it is clear that Shaw uses more non-scale tones in his improvisations than Hubbard. This may also be reflected in the fact that Hubbard has more of a propensity (albeit, slightly more) to use "diatonic reharmonization" than does Shaw. Shaw employs modal reharmonization thirteen times to Hubbard's ten. Very interestingly, in their modal reharmonization passages, both use some form of the F# major scale the same large number of times (that is, six times each) to reharmonize various harmonic contexts (although Shaw uses an

F# major-A minor reharmonization several additional times). In Shaw's case, this usually takes the form of the F# hexatonic scale, while Hubbard's preference is for the G# dorian mode.

Both Shaw and Hubbard use some approaches to nearly the same degree. Both employ progressive modal agreement five times. Both use contour/sequence nearly the same number of times: Hubbard's twelve to Shaw's eleven. Hubbard had a relatively large proportion of "NIC Patches" that proved to be "disguised" traditional or idiomatic bebop reharmonization (that is, five occurrences in twenty passages, as opposed to Shaw's two occurrences in twenty five passages).

Certain specific approaches have the almost exclusive preference of one soloist or the other. For example, while both soloists use rhythmic devices a fairly equal number of times (Shaw's eleven to Hubbard's eight), Shaw uses anticipation six times while Hubbard only uses it once. Hubbard uses large scale reharmonization (that is, using only one scale to reharmonize several chords across several measures) four times, while this large-scale approach never appears in Shaw's work. Also, while both soloists have a propensity to use F# major to reharmonize passages, Shaw has an additional propensity to use this same F# major tonality leading into A minor in a fashion never employed by Hubbard.

Other insights are more anecdotal than statistical in nature. For example, we see in gestures using triadic and large scale reharmonizations, an approach to NIC patches that is more characteristic of Hubbard than it is of Shaw: using blunt, straightforward triadic gestures in keys near or remote to establish polychordalism. In contrast, Shaw's structures must often be deciphered in order to find the harmonic and structural underpinnings that lend strength and continuity to his polychordal and polytonal gestures.

When we examine chromaticism across entire passages rather than individual bars, we find another general tendency, one that is quite surprising. Both Shaw and Hubbard share the tendency to present the highest chromatic tension **early** in a ii-V⁷-I progression, resolving that tension well before the arrival on the tonic, rather than on the downbeat of the tonic or later. This is surprising because it is more typical of harmonically adventurous improvisers to create more harmonic tension later in the progression.

Whatever their differences, both soloists prove extremely adept at addressing the problem raised in the introduction: they walk the musical tightrope and keep their balance, creating excitement and color without destroying the fabric of the music's compositional language. They leave tonality altogether or force two distant tonalities together, yet elegantly preserve the fundamental mechanism of tonal music's tension and release. Admittedly, some moments are more brilliant than others, and some are difficult to describe other than having been created unintentionally (that is, by mistake). However, the proof of the music is in the sound, and it is clear that the body of work analyzed here must be heard to be fully appreciated. It is my hope that analysis I have done in this study will allow students of jazz improvisation to hear this music in a new light. I hope that such students (and I count myself as one of them) will benefit from this close look at the inner workings of the salient harmonic characteristics of these jazz giants, by enriching their own personal language as improvisers.

END NOTES

¹ Admittedly, the term is not entirely appropriate to every one of the passages. For example, literal chromaticism does not play an integral role in some passages that use diatonic reharmonization; e.g., playing an A \flat major 7 arpeggio over an E \flat ⁷ chord. Furthermore, some passages are revealed through closer examination to contain “disguised” idiomatic chromaticism rather than an approach that needs explanation as a new or problematic harmonic technique. Nevertheless the term NIC Patch is useful to label curious passages that are worthy of closer scrutiny.

² Brian Hyer, “Tonality: Usage” from *Grove Music Online*, <http://www.grovemusic.com/shared/views/article.html?section=music.28102.1>.

³ Although these sessions were the first to feature both Shaw and Hubbard as co-leaders, it was not the first time they had appeared in the studio together. A little-known recording under the leadership of saxophonist Benny Golson was made in 1982 featuring both trumpeters as sidemen. Entitled *Time Speaks*, it is a tribute to late trumpeter Clifford Brown. According to the editor of the on-line Critical Discography of Woody Shaw (<http://homepages.go.com~fitzgera/wsdisc.htm>), “The chemistry in the combination of Hubbard and (Shaw) that led them to record “Double Take” is also in evidence here. These two are at their best when they’re not lapsing into the usual high note battles endemic to trumpet pairings...”

⁴ Michael Cuscuna, liner notes to Freddie Hubbard and Woody Shaw, *The Eternal Triangle*, Blue Note Records 724383274727, 1995, CD.

⁵ Benjamin, James, “Celebrity musical meltdowns,” *The Left End of the Dial*. Can be accessed at http://ajbenjaminjr.blogspot.com/2005_06_05_ajbenjaminjr_archive.html.

⁶ Orrin Keepnews, “The Milestone Sessions,” liner notes to Joe Henderson, *The Milestone Years* Box Set, Milestone Records, 1994, CD, p.28.

⁷ Ron Wynn, *All Music Guide to Jazz* (San Francisco: Miller Freeman Books, 1994), 582. As printed later in the main text of this document, Wynn writes, “...There were also stylistic similarities in the playing of Shaw and Freddie Hubbard, which were especially noticeable when the duo recorded together, though Shaw always denied he’d been influenced by Hubbard.” However, this is contradicted by Nat Hentoff’s liner notes to the Larry Young album *Unity* (Larry Young, *Unity*, Blue Note Records, CD), in which he writes, “...by the time Woody was thirteen, he was also listening hard to Lee Morgan and Donald Byrd. Thereafter ‘a whole lot of cats’ influenced him – among them Kenny Dorham, Clark Terry and Nat Adderly. As for the current shaping forces, he lists the late Booker Little, *Freddie Hubbard* and Miles Davis.” [italics mine] Also, see foot notes 8 and 10 below.

⁸ Chuck Berg, “Woody Shaw: Trumpet in Bloom,” *Downbeat Magazine*, August 1978, Shaw is quoted as saying, “I come from the tradition of great trumpet masters of the past like Dizzy, Brownie, Lee and *Freddie*. But I want to sound like Woody Shaw. I’ve been heavily influenced

by Trane and Eric Dolphy and saxophonists in general, so I see a unique course developing in my own style. I think I sound like Woody Shaw.” [italics mine] Interestingly, regarding the question of Hubbard’s influence, Shaw lists some seventeen trumpeters whom regards as important influences on him, almost pointedly avoiding mentioning Hubbard except for this closing line.

⁹ Woody Shaw, *Master of the Art*, Elektra Muse, 1982, lp Included in a collection of quotes by famous jazz musicians on record jacket. Hubbard’s entire quote reads “I always practice with saxophone players. I find when you get around trumpet players you get into competitive playing – who can play the loudest and the highest. After you develop your own style, you don’t want to get into that, because you find out that you can’t. I couldn’t play ‘The Flight of the Bumblebee’ like Doc Severinsen. I couldn’t play as tricky as Dizzy. I couldn’t play as pretty as Miles. So I tried to find something for myself out of all of them, and then I take it from there.”

¹⁰ It is these shared characteristics which make it especially curious that the younger Shaw insisted that he was not influenced by Hubbard. This claim is made all the more dubious by the fact that Shaw would have been a sixteen-year old, in his formative years, when Hubbard’s first recordings as a leader were released on the Blue Note label. Shaw claims that his first trumpet influences were Clifford Brown, Fats Navarro and Lee Morgan (Morgan was Hubbard’s immediate peer: both were born in 1938, and both were clearly deeply influenced by Brown). Shaw evokes an obvious comparison to Morgan in his first recording, as an eighteen-year old on Eric Dolphy’s *Iron Men*. (Eric Dolphy, *Iron Men*, Jazz World 102.314, 1998, CD) Nevertheless, it is difficult to imagine that Hubbard’s playing would not have captivated the younger Shaw. It may have been that Shaw, already having emerged as original voice by 1965, felt the need to distance himself from the elder Hubbard, to treat him as an equal and a peer, rather than to admit that he had seen him as a mentor. See end notes 7 and 8 above.

¹¹ Liner notes to Woody Shaw, *Cassandranite*, Muse B000008C7W, 1994, CD.

¹² The obscure recording under the leadership of Benny Golson mentioned earlier is the only other example of such an opportunity.

¹³ Whether these sessions had any impact on the subsequent careers or styles of either soloist is difficult to determine. In listening to decades-spanning samples of their work, one gets the sense that Hubbard’s genius was more intuitive and pliable; Shaw’s more methodical and thoughtful. Hubbard showed a considerable evolution in his harmonic language between the 1960s and 1980s; Shaw, on the other hand, seems to have fully developed his concept by 1965 (vis a vis his work with Larry Young and Horace Silver) and to have spent the next (and last) twenty-five years of his life attempting to refine and perfect it. For Hubbard to have instantly adapted, chameleon-like, to Shaw’s language in these sessions is quite impressive, but it is not surprising given his track-record.

¹⁴ For an explanation of chord notation, see Appendix B, Analytical Tools and Terminology, on p. 59.

¹⁵ These are the other three tunes analyzed in this study. “Down Under,” by Freddie Hubbard, is not included in the body of this paper, but the tune and solos are included in Appendix A, additional transcriptions. “Lotus Blossom” by Kenny Dorham and “Hubtones” by Freddie Hubbard will be discussed in the following pages.

¹⁶ For an explanation of contour analysis, see Appendix B, Analytical Terms and Terminology, p. 57.

¹⁷ It should be noted that jazz musicians do not consider the major seventh to be an unstable dissonance on a minor chord. See Appendix B, Analytical Tools and Terminology.

¹⁸ For a discussion of the octatonic scale, known as the “diminished scale” by jazz musicians, see Appendix B, Analytical Tools and Terminology, p. 61.

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APPENDIX A – ADDITIONAL TRANSCRIPTIONS

Hubbard

Shaw

7

12

16

21

26

lip trill

lip trill

NIC PATCH LBTS1

NIC PATCH LBTS 2

D- C-7 F7 B^bΔ B^ø7 B^b7 A⁷alt

D- E^ø7 A⁷alt D- C-7 F7

B^bΔ B^ø7 B^b7 A⁷alt D-

A^ø7 D⁷alt G-

G^ø7 C⁷alt F^Δ E^ø7 A⁷alt D-

C-7 F7 B^bΔ B^ø7 B^b7 A⁷alt

Example 17. Woody Shaw's and Freddie Hubbard's Trading Duet on *Lotus Blossom* (con'd.)

NIC PATCH LBTH 1

31

35

C-7 F7 B^bΔ B^ø7 B^b7 A⁷alt

39

44

B \flat Δ B \flat 7 B \flat 7 A7alt D- A7

valve tremolo 8va

(8) 3 3 1

50 (8)-

D⁷alt G- G^ø7 C⁷alt F^Δ

56 

63

8^{va}

D- E^ø7 A⁷alt D- C-⁷ F⁷ B^bΔ

69

NIC PATCH LBTH 2

B^ø7 B^b7 A⁷alt D- E^ø7 A⁷alt

73

D- C-⁷ F⁷ B^bΔ

NIC PATCH LBTS 3

77

B^ø7 B^b7 A⁷alt D- 5

81

NIC PATCH LBTH 3

A^ø7 D⁷alt G-

85

G^ø7 C⁷alt F^Δ E^ø7 A⁷alt

89

94

98

103

108

113 (rhythm approximate, mm. 111-119)

116

3 3 3

Gø7 C7alt

119

FΔ Eø7 A7alt D-

3

122

C-7 F7 BbΔ Bø7 Bb7

3 3

126

A7alt D- Eø7 A7alt D-

DOWN UNDER by Freddie Hubbard

The musical score for "Down Under" by Freddie Hubbard is presented in five staves, all in G major (one sharp). The notation includes various chords, melodic lines, and performance instructions.

- Staff 1:** Measures 1-4. Chords: $G^{\#}\emptyset 7$, $C^{\#}7\text{alt}$, $F^{\#}-$. Includes a repeat sign and an accent mark.
- Staff 2:** Measures 5-10. Chords: $G^{\#}11$, $F^{\#}-$, $E-7$, A^7 , $D-7$, G^7 . Includes a triplet of eighth notes in measure 6 and an accent mark in measure 9.
- Staff 3:** Measures 11-15. Chords: $G^{\#}\emptyset 7$, $C^{\#}7\text{alt}$, $F^{\#}-$. Includes a first/second ending bracket over measures 13-14 and a triplet of eighth notes in measure 15.
- Staff 4:** Measures 16-20. Chords: $G^{\#}11$. Includes a triplet of eighth notes in measure 16 and an accent mark in measure 19.
- Staff 5:** Measures 21-24. Chords: $F^{\#}-$, $E-7$, A^7 , $D-7$, G^7 , $G^{\#}\emptyset 7$, $C^{\#}7\text{alt}$, $F^{\#}-$, $G^{\#}\emptyset 7$, $C^{\#}7\text{alt}$. Includes the instruction "improvise 1st time; 2nd time into solos" above measures 23-24.

Example 18. *Down Under* by Freddie Hubbard

Freddie Hubbard's Solo

G#°7 C#7alt F#- G#°7 C#7alt F#-
 7 G7 F#- E-7 A7
 12 D-7 G7 G#°7 C#7alt F#- G#°7 C#7alt F#-
 17
 NIC PATCH DUH 1
 21 F#- E-7 A7 D-7 G7
 25 G#°7 C#7alt F#- G#°7 C#7alt F#-
 31 G7 F#- E-7 A7
 36 D-7 G7 G#°7 C#7alt F#- G#°7 C#7alt F#-
 41 G7
 46 F#- E-7 A7 D-7 G7
 49 G#°7 C#7alt F#- G#°7 C#7alt F#-

The musical score is written in treble clef with a key signature of three sharps (F#, C#, G#) and a 4/4 time signature. The solo consists of 49 measures. The notation includes various chords (G#°7, C#7alt, F#-, G7, E-7, A7, D-7) and melodic lines with slurs, ties, and triplets. A section labeled 'NIC PATCH DUH 1' spans measures 17 to 21. The score ends with a double bar line at measure 49.

Example 19. Freddie Hubbard's Solo on *Down Under*

Woody Shaw's Solo

The musical score is written for a solo in 4/4 time, key of D major (indicated by two sharps). It consists of ten staves of music, each with a measure number at the beginning. Chord symbols are placed above the staff lines. Trills and triplets are indicated with 'tr' and '3' respectively. The score includes two sections labeled 'NIC PATCH DUS 1' and 'NIC PATCH DUS 2'.

Staff 1 (Measures 1-5): Chords: G#ø7, C#7alt, F#-, G#ø7, C#7alt, F#-. Measure 5 contains a triplet.

Staff 2 (Measures 6-10): Chords: G7, F#-, E-7, A7, D-7, G7. Measure 7 contains a triplet.

Staff 3 (Measures 11-15): Chords: G#ø7, C#7alt, F#-, G#ø7, C#7alt, F#-, G#ø7, C#7alt. Measure 12 contains a triplet.

Staff 4 (Measures 16-20): Chords: F#-, G7, F#-. Measures 17, 18, and 19 contain triplets.

Staff 5 (Measures 21-25): Chords: E-7, A7, D-7, G7, G#ø7, C#7alt, F#-, G#ø7, C#7alt. Measure 24 contains a triplet.

Staff 6 (Measures 26-30): Chords: F#-, G#ø7, C#7alt, F#-, G7. Measure 29 contains a triplet.

Staff 7 (Measures 31-34): Chords: F#-, E-7, A7, D-7, G7. Measures 32, 33, and 34 contain triplets.

Staff 8 (Measures 35-38): Chords: G#ø7, C#7alt, F#-, G#ø7, C#7alt, F#-. Measures 36 and 37 contain triplets.

Staff 9 (Measures 39-41): Labeled 'NIC PATCH DUS 1'. Chords: G#ø7, C#7alt, F#-. Measure 40 contains a triplet.

Staff 10 (Measures 42-44): Labeled 'NIC PATCH DUS 2'. Chords: G7, F#-. Measure 43 contains a triplet.

Example 20. Woody Shaw's solo on *Down Under*

45 E⁻⁷ A⁷ D⁻⁷ G⁷ G^{#ø7} C^{#7alt}

48 F^{#-} G^{#ø7} C^{#7alt} F^{#-}

The image shows a musical score for two staves in E major. The first staff, starting at measure 45, contains the following chords: E⁻⁷, A⁷, D⁻⁷, G⁷, G^{#ø7}, and C^{#7alt}. The second staff, starting at measure 48, contains the following chords: F^{#-}, G^{#ø7}, C^{#7alt}, and F^{#-}. Measure 49 in the second staff features a triplet of eighth notes. The score concludes with a double bar line at the end of measure 50.

APPENDIX B – ANALYTICAL TOOLS AND TERMINOLOGY

A number of the terms to be used in my analysis, as well as some of the analytical tools themselves, require definition.

1) Reharmonization

This refers to jazz musicians' practice of substituting a harmonic framework for one that is prescribed by the composition. This can be done in an arrangement or while improvising, and may range from a musician changing a single chord (or the scale associated with it) to changing the chord progression for an entire composition. Of particular interest here is the practice of substituting foreign scales over prescribed chords, for which Shaw and Hubbard both have a penchant.

2) Contour Analysis

According to Joseph Straus in his book *Introduction to Post Tonal Theory*,

...we may sometimes...attend to the general shapes of music, its motions up and down, higher and lower. These are aspects of musical contour. To make sense of musical contour, we do not need to know the exact notes and intervals; we only need to know which notes are higher and which are lower...contour is represented as a string of numbers enclosed within angle brackets: <2013>. The notes in each fragment are assigned a number based on their relative position in the fragment. 0 is assigned to the lowest note, 1 to the next lowest, and so on. The highest note will always have a numerical value that is 1 less than the number of different notes in the fragment. The numbers are then arranged, in order, to describe the musical contour.¹⁹

Contour analysis will prove useful in a number of NIC Patches, particularly when identifying sequences (that is, the repetition and transposition of gestures which share a similar contour).

3) Interval Sequence Analysis

According to Joseph Straus,

A Pitch interval is simply the distance between two pitches, measured by the number of semitones between them...Sometimes we will be concerned about the direction of the interval, whether ascending or descending. In that case, the number will be preceded by either a plus sign (to indicate an ascending interval) or a minus sign (to indicate a descending interval)...(such intervals) are called directed or ordered intervals. At other times, we will be concerned only with the absolute space between two pitches. For such unordered intervals, I will just provide the number of semitones between the pitches.²⁰

In a small number of cases, the sequence of pitch intervals in a particular NIC Patch will yield some important structural insight. For example, a pitch interval sequence of +1, +2, -2, -1 displays an interesting palindromic structure which might lend structural cohesion in the midst of harmonic disparity.

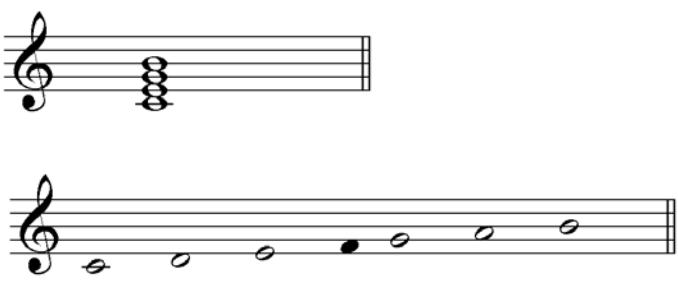
Section 3b Scale and Chord relationships

This section will provide a key for conventional jazz theory concepts regarding chord and scale relationships, and sample chord spellings.²¹ In some cases, a particular chord may suggest more than one choice for an improvising soloist. In other cases, a particular chord may be reharmonized so frequently that such an occurrence is routine in performances. I will indicate both of these cases. For simplicity's sake, all chords are indicated with "C" as the tonic note. Notes indicated in black are "avoid tones," which means that they are not considered stable or consonant. There may be surprises for readers more accustomed to traditional theory's notions of dissonance and consonance;²² note, for example, that the fourth scale degree is considered stable on a minor chord, and that the seventh scale degrees are considered consonant in virtually every type of scale.

Syllabus of Frequently Used Scales and Associated Chords

(Note that scale tones are frequently spelled to reflect their derivations from chordal alterations – for instance, a scale built on C may contain both a D \flat and a D \sharp to reflect the “flat nine” and “sharp nine” alterations)²³

1. C Δ (C Major):




a) C major:

The image shows the C Major chord and scale. The chord is represented by a treble clef with a C4 chord (C-E-G). The scale is represented by a treble clef with a C4 scale (C-D-E-F-G-A-B-C).

This is often reharmonized as C Major $\sharp 4$ and C Lydian:


2. C Major $\sharp 4$:



a) C Lydian:

The image shows the C Major $\sharp 4$ chord and scale. The chord is represented by a treble clef with a C4 chord (C-E-G \sharp 4). The scale is represented by a treble clef with a C4 scale (C-D-E-F \sharp 4-G-A-B-C).

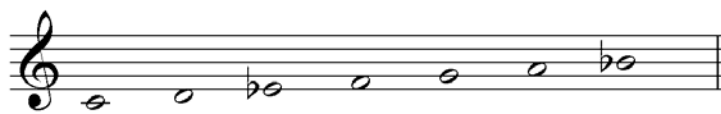
3. C- (C minor):



The image shows the C minor chord and scale. The chord is represented by a treble clef with a C4 chord (C-E \flat -G). The scale is represented by a treble clef with a C4 scale (C-D-E \flat -F-G-A-B-C).

Unless specified – e.g., C-7, C-6, etc., a chordal instrument may voice a minor chord with the minor 7th, the major 7th, or the major 6th. In the case of C-7, as part of a II-V-I progression, the default mode is C dorian.

a) C dorian:



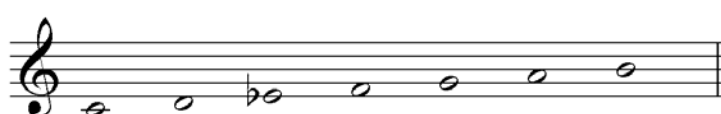
b) C aeolian :



c) C harmonic minor:



d) C ascending melodic minor:



4. C⁷ (C dominant 7th):



a) C mixolydian:

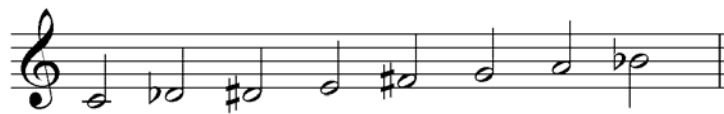


This may be reharmonized as one of the four following scales and chords:

5. C^{7b9} (C seven flat nine):



a) C diminished scale HW:



6. C^{7alt} (C seven altered):



a) C diminished-whole tone scale (7th mode of C# ascending melodic minor):



7. C dim7 (C diminished seventh):



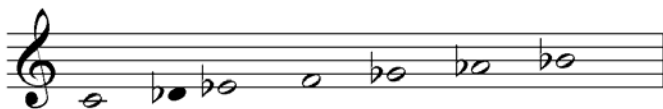
a) C diminished scale WH :



8. C half dim (C half-diminished):



a) C locrian:

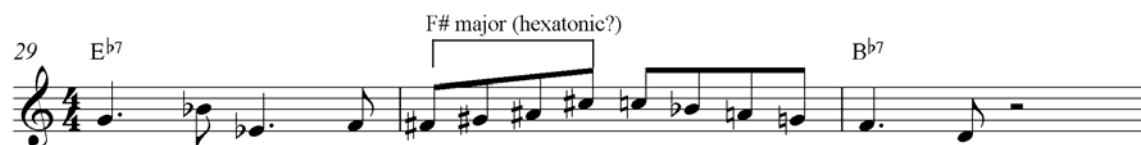


b) C locrian #2:



APPENDIX C – WOODY SHAW’S USE OF MODAL REHARMONIZATION USING F# HEXATONIC

We may gain further insight into Shaw’s use of F# hexatonic to reharmonize passages by taking a closer look at an example from his solo on “Hubtones.”



Example 21. NIC PATCH HTS 4

In mm. 29-30, we see a simplified version of the same type of gesture seen in a number of other examples. In m. 29, the key of Eb is implied in terms of both pitch and rhythm. The same two pitches (Eb and F) lead out of m. 29 and into the Gb, Ab, Bb and Db (enharmonically, F#, G#, A#, and C#) gesture that begins m. 30. This is **virtually identical** to mm. 37-38 in Shaw’s solo on “Lotus Blossom.”

While the gestures are nearly identical in both passages, the respective harmonic contexts are not. The F#-based gesture is played over Eb⁷ in the case of the “Hubtones” solo, and over A⁷ alt. in the case of the “Lotus Blossom” solo. A tritone substitution relationship exists between the two chords: Eb^{7#4} and A⁷ alt. share interchangeable thirds and sevenths, and the modes they imply (Eb lydian dominant and A altered dominant) are both derived from the Bb melodic minor scale. Another harmonic relationship to point out is that F#, Eb, and A are all closely related in the context of octatonic or diminished scale harmony. The use of altered dominant scales and flat 9 reharmonizations place the dominant seventh chords in question into close proximity with

diminished scale harmony. This is a subtle harmonic relationship that Shaw may have drawn upon to make his choice of reharmonizations.

The question that arises is whether the impetus for using this gesture in both contexts is based on the aforementioned subtle harmonic relationships between the two chords, or if it is based more on “force of habit.” That is, one must ask whether this gesture is used simply because it is technically comfortable for Shaw and because he is actually using chromatic “licks” without regard to the underlying chord structure. Another question that arises is whether there might be a specific harmonic impetus that drives Shaw to move to F \sharp pentatonic from any E \flat major/dominant passage. It will take further analysis to attempt to answer this in any meaningful way. Whatever the case, Shaw uses the same gesture in both cases to create and resolve harmonic tension fluidly, despite the differences in context.

Let us look at Shaw’s solo on “Hubtones” in mm. 43-44.

Example 22. NIC PATCH HTS 8

Note the similarities in m. 43 b1.5 through m. 44, b.1 and m. 69-70 of Shaw’s solo on “Lotus Blossom.”

Example 23. NIC Patch LBS 4

Both gestures are in F \sharp , and both follow almost exactly the same contour, except that in the “Lotus Blossom” example Shaw plays the third scale degree on the second half of beat 2, while he plays the 2nd scale degree on the second half of beat 2 (m. 43) in the “Hubtones” example. In both cases the gesture descends using the same characteristic F \sharp hexatonic pitches – 7, 6, 5, 3, 2, 1. The harmonic contexts in that this occurs, however, are entirely different: in the “Hubtones” example, it occurred in the seventh bar of a B \flat blues form, moving to G 7b9 , the V of ii, on the downbeat of the 8th bar. To place this in context, let us let us look at another example to be presented later in this chapter, from Shaw’ solo on “Moontrane.”

In Example 21, the passage in mm. 29-30 shows yet another variation of the same gesture making use of the F \sharp hexatonic scale. Furthermore, this occurs in a harmonic context differing from the previous two. In this case, the presence of E \flat minor at the beginning of m. 30 can be used to justify Shaw’s choice of pitches across the whole gesture.

Example 24. NIC PATCH MTS 3

Nonetheless the fact remains that he has once again used the F \sharp hexatonic scale in an almost identical gesture across very different harmonic contexts.

Another examples show a remarkable similarity to the preceding gestures:

65 Eb7 F# hexatonic A minor Bb7 A mixolydian

68 p.t. p.t. Bb major F7

chromatic "dovetailing" between modes

* chromatic enclosure tone

Example 25. NIC PATCH HTS 9

It should be noted that the passages in mm. 65-67 and mm. 43-44, both from Shaw's solo on "Hubtones," demonstrate a very similar harmonic map and contour to each other. They are also similar to the passage in mm. 98-100 in Shaw's solo on "Lotus Blossom." All three of the harmonic contexts (that is, the chord progressions) in these passages are dissimilar enough for us to assume that Shaw finds this F# hexatonic to A minor gesture usable as a reharmonization tool in various contexts.

¹⁹ Joseph Straus, *Introduction to Post Tonal Theory* (Upper Saddle River, NJ, Prentice Hall, 2000), 87.

²⁰ Joseph Straus, *Introduction to Post Tonal Theory* (Upper Saddle River, NJ, Prentice Hall, 2000), 6.

²¹ Levine, *Jazz Theory*, 34, 56, 80.

²² A remarkable example of the potential pitfalls of applying a traditional analytical framework to jazz improvisation is to be found in Steve Larson's article "Schenkerian Analysis of Modern Jazz: Questions About Method," *Music Theory Spectrum* 20/2: 209-241. Larson describes the use of extended chord tones in a fashion which I, as a practicing jazz musician, found bizarre and somewhat amusing: rather than accepting that jazz musicians consider extended chord tones as consonant sonorities, Larson attempts to force the triadic, Schenkerian-based model of harmony into a jazz format by making a procrustean argument that such "dissonances" are usually resolved in performance. This ignores the common practice of jazz musicians ending their improvised phrases on the ninth (or second) scale degree and of rhythm sections ending

compositions with unresolved seventh, ninth, or sharp eleven chords as the rule rather than the exception.

23 Jamey Aebersold, *Jazz Handbook* p. 14. and Mark Levine, *The Jazz Theory Book*. It seems that “enharmonic equivalence” applies to the labeling used by these authors. Aebersold lists the C^{7+9} scale (diminished whole tone) and spells it “C, D \flat , D \sharp , E, F \sharp , G \sharp , B \flat , C.” Levine, on the other hand, while adhering to the same terminology for alterations (i.e., flat nine, sharp nine, sharp four, sharp five), seems to spell his scales and chords with enharmonic equivalence. That is, B diminished whole tone is spelled “B, C, D, E \flat , F, G, A” on page 70, and a C^7 alt. (same as C^{7+9}) is spelled “C, E, B \flat , E \flat , A \flat ” on p. 72.

VITA

Edward Rex Richardson was born in Martinez, California, in 1969 and grew up in various parts of the United States as the son of a Coast Guard father. He graduated with a Bachelor of Arts (1992) from Northwestern University with a major in anthropology. He earned a Master of Music degree from Louisiana State University (2000) in trumpet performance. He has been active as an international performer, composer and recording artist since 1995, serving as a member of Rhythm & Brass and the Joe Henderson Quintet and Sextet. He has appeared as a guest soloist with orchestras, wind ensembles, brass bands and jazz ensembles on four continents. He has recorded CDs for KOCH, Summit, D'Note, IGMOD. In spring of 2002 he served as a visiting professor of music at Ithaca College in New York. In the fall of 2002 he was appointed assistant professor of trumpet and jazz trumpet at Virginia Commonwealth University in Richmond.