

**Jeff Rupert**  
**Saxophone Master Class**

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## I Saxophone Assembly and maintenance

### Neck and mouthpiece assembly:

Putting the saxophone together is something we've all been doing since day one. It may seem trite to even address assembly of the instrument, but its been a common flaw not to develop good habits.

I've seen broken mouthpieces, bent rods and necks several times from seasoned professionals who should have known better! This is precisely why its important to develop good habits when putting your instrument together. Prior to putting the mouthpiece on the neck, make certain that the cork is lubricated. Realistically once a neck cork has been seasoned by you or a repairman, rarely does application of additional cork grease become an issue. Several repairmen I know use a silicone lubricant that seals the cork in an apropos fashion. *Don't use silicone on your own; defer to your local professional repair person.*

There is cork grease for us lowly saxophonists who aren't repairmen- use it!

The other concern when putting on your mouthpiece initially is that the cork is the right diameter for your mouthpiece. If you have a neck re-corked (which is needed from time to time) make sure the repairman checks the cork diameter with your mouthpiece. Be weary if you use a hard rubber mouthpiece. You may want to use a metal mouthpiece to compress the cork a bit before using a valuable hard rubber mouthpiece which could crack.

### Checking key mechanisms:

There are two keys that commonly get stuck in a closed position on the saxophone, the G# and low C# key. If they are stuck they need to be opened gently. Grabbing them and pulling them in a rough manner can misalign the key. The bottom line with the saxophone is that it is deceptively delicate. Its made of brass, one of the softest metals used in instrument manufacturing. The saxophone is relatively large, and rods are long, and posts and keys can be easily affected by rough handling.

### Checking for leaks, and clogged vents:

From time to time octave keys (there are two on saxophones) can get clogged. Its rare, but if they do the octave key will not work properly. They can be cleaned out with a pipe cleaner.

*See demonstration.*

Without a leak light (that a repairman would have) it can be hard to tell if your horn is leaking.

*See demonstration for various alternate techniques.*

### Maintaining the lacquer:

The lacquer on a saxophone is an important part of the sound production of the instrument, and a protective aid for the brass. While it looks good too, the aesthetics are really secondary to its purpose. To maintain the lacquer on a saxophone keep a rag in the case, and wipe down the main parts of the horn after each use. It's a common practice to use a dusting solution ie Pledge on the aforementioned rag. This acts as a protective wax on the horn. It's a great protective measure for the lacquer, acting as a wax just like on car paint. Be advised there is a drawback; the instrument will be a little bit slippery. Practice care when holding your instrument! Regarding these cleaners, stay away from thick ones, like *Liquid Gold* which will gum up the horn. *Pledge* seems to be the best for the job at hand.

### Holding the instrument:

Holding the saxophone in an inappropriate manner is one of the most common ways of damaging the alignment of keys. Ironically the periodic misuse of the instrument by the player is one of the biggest problems in maintaining and instrument. When at all possible, hold the instrument by a non-moving part, like the bell. Grasping the instrument by the rods or keys is a slow path to a leaking horn. Once the horn is safely on your neckstrap, work to keep your fingers on the keys.

### Setting the instrument down:

When you are putting your instrument down, it is best to put it down on the side opposite the low B and Bb keys. *See demonstration.*

In this position the horn sits on the high D key, and the bottom of the horn are only two points touching the instrument. Laying the horn down in the opposite way puts stress on rods and keys.

## II Posture

The Back and neck:

Its extremely important to stand up straight when playing the saxophone. The instrument should be positioned so that the mouthpiece comes to your mouth as you are standing straight up, looking up slightly. See demonstration.

Proper posture enables us to breathe appropriately, which we will talk about shortly. It also relieves undue stress that the instrument can incur to our body.

Legs and knees:

Knees should be slightly bent, and unlocked. This is imperative to breathing properly, and also helps with reducing stress to our body. *See demonstration.*

## III Breathing and Breath flow

Inhaling and exhaling:

Breathing properly is the primary element with regard to good tone production, and flexibility on the instrument.

It is often the most misunderstood part of wind instrument playing.

When we inhale, its imperative to do so from the bottom of your midsection, then filling up the midsection, and finally the chest and upper chest cavity. This order is required for appropriate inhaling. When we segue to exhaling, it is required that we do not hesitate with the air. In an analogous fashion, think of breathing as a wave comes up a beach, and then falls back; its all one smooth motion. Its also just like a pitcher winding up and releasing a ball; its seamless.

Breath solfège

We usually think of solfège as it relates to sight singing ( do re me, etc) however the same holds true for the breath. We look for a specific sound when inhaling and exhaling.

Aim to create the sound (HO) when breathing in and the sound "Who" when exhaling. This sets throat in the appropriate position for tone production.

## IV Oral Cavity and the Larynx

The oral cavity is the last part of our body that handles the air prior to it going into the instrument. The shape of the oral cavity can be changed, affecting the sound as a result of the positioning of the back part of the tongue in this cavity.

There are two basic tongue positions possible:

EE as in "meet" + middle position where sides of the tongue are lightly touching the top right and left top teeth.

AW (as in "Law") + tongue rests more toward the floor of the oral cavity.

Experiment with both positions, starting in the middle. The lower position creates a more open and hollow effect that can be useful for certain sounds. *Cited from Saxophone Basics, David Liebman, 2006.*

The Larynx:

We must consider what happens in the throat/neck area, located behind the adams apple. It is in the larynx where the voice box and vocal cords are located. Movement of the vocal cords (vibration) is how we produce sound and sing. By achieving greater control of the vocal cords during the blowing process we are getting closer to the source of our individual sound, which after all is theoretically supposed to be an extension of one's own voice. In fact it can be stated that the saxophone is an extension of the vocal chords. Each note corresponds with a certain movement and feeling in the laryngeal area that is dictated by our imagination. This is accomplished by "pre- hearing" a note in one's inner ear followed by that impulse being relayed to the vocal cords, which "magically" assume the proper position to produce the pitch.

All of this occurs below the threshold of conscious feeling much like what doctors refer to as the "knee jerk" response; when one's knee cap is lightly struck and the leg automatically extends itself without any conscious thought. What takes place in the voice box is an automatic response that with certain exercises can be developed to a high level of accuracy and flexibility. *(Liebman, 2006)*

## V Embouchures for playing the saxophone

Variance in embouchure technique:

It's important to always keep in mind that the embouchure is secondary to breath flow. It's the flow of air across the reed that excites it and makes it vibrate, creating the sound. *The embouchure is secondary in tone production.*

That being said, it's important to let the air do the work, so to speak. The embouchure should facilitate the air; it should not hinder it.

The physics of our mouth allows us to apply pressure to the mouthpiece and reed vertically. *See demonstration.* Since this is so easy, a lot of the pressure we need to think about is from the sides of our mouth, with the idea of producing more equal pressure all around the mouthpiece. Success in this area amounts to more flexibility and a richer tone.

There are several ways to form an embouchure;

In all cases the bottom lip should slightly cover the teeth, acting as a cushion to the reed and teeth. The top teeth can rest on the mouthpiece. It's important not to bite down so hard as to eventually indent the mouthpiece, or even possibly bending the sax neck!

Another less talked about technique (employed by Ben Webster, Coltrane and Stan Getz) is a "double lip" embouchure where the top teeth do not touch the top of the mouthpiece. The top lip lightly curls under the top teeth to form a slight cushion on the mouthpiece top. The objective however with this technique is to ultimately keep the mouth more open, producing a warmer sound. It is merely another technique in tone production. The down side with this technique is that the altissimo register is not easily achieved.

### The embouchure and breathing:

Often overlooked is how to breathe with the mouthpiece in place. In common practice for many (not all) saxophonists is to keep the top teeth/lip in place, and drop the lower jaw to breathe. This enables the proper breath *solgfège* mentioned before. *See demonstration and videos.*

## VI Practicing and Daily Routines:

It's important to have a daily routine when playing any musical instrument. Aside from trying to learn new concepts there is a lot of muscle memory that is involved that needs to be addressed. I recommend starting with some easy things, and within 10% of your routine move to the most difficult exercises, working towards easier ones. (Liebman, 2006), To be a great musician, or great at anything one needs to put in at least 10,000 hours of time, of good practice. To be great you can count on at least 4 hours of practice a day for 10 years. Studies show that no one, **no one** gets around this figure. Talent has nothing to do with achieving greatness. It's a misnomer. (Gladwell, 2008.)

Daily routines and rituals

Playing the mouthpiece:

This can be hard at first, but the objective is to be able to develop flexibility and good tone on the mouthpiece alone. You should be able to play about an octave on your mouthpiece. Play a major scale on your mouthpiece!

Playing the mouthpiece with the neck:

When placing the mouthpiece at the proper position on the cork it is possible to play an interval of about a 5th, as well as two overtones (up a 9th and up two octaves and a sixth). Although this is hard, results will come with time and patience.

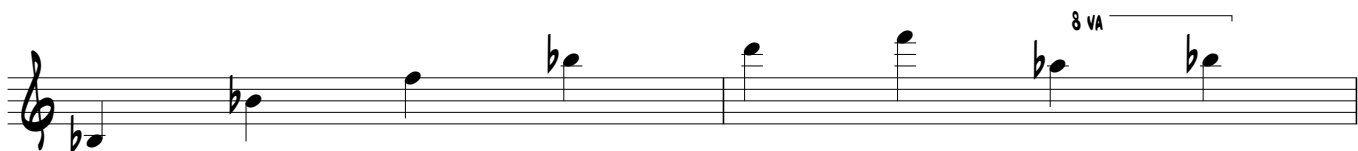
The main focus when playing the mouthpiece with the neck alone is achieving a good tone. The more focused our tone is on the neck alone, the better it will be when playing the entire horn. (Liebman, 2006)

*The section on overtones is taken from David Liebman's book on Saxophone Basics. See citation at the end of the document.*

Overtone exercises

Extending the mouthpiece and neck exercises to the full horn, we now must find ways to experience laryngeal movement besides the obvious aspects of talking and singing. While fingering a note, we can manipulate our air stream using the larynx to produce a different note with the same fingering called overtones.

Although it is possible to perform overtones on nearly any note, the easiest notes are low Bb, B, C and C#. The overtone series for low Bb looks like this. The intervallic relationship is the same for the other overtone series.



Before getting too much into the overtone series, try and play legato octaves using the normal fingerings:



Play without using the octave key.

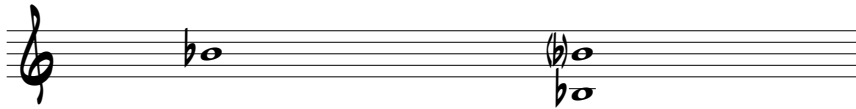


Taking this a step further, start by fingering a low Bb but producing the first overtone. This is accomplished by hearing the octave in your head and attempting to feel like you are "singing" that pitch into the mouthpiece. After you have a strong overtone, try to slur down to the original low Bb that you are fingering. Remember, its important not to drop your jaw to accomplish this and not to over blow! (Liebman, 2006)

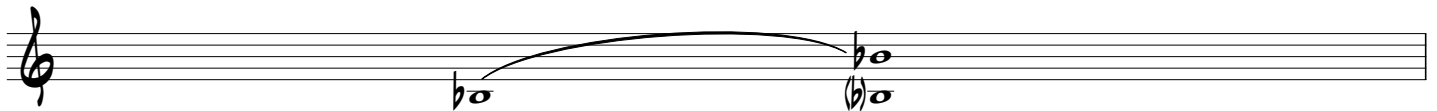
Now we can start using the overtone fingerings. To get a good sense of how it feels to play an overtone, the first exercise involves playing a middle Bb and quickly switching to a low Bb fingering while maintaining the middle Bb. You have just played the first overtone!!

finger low Bb throughout

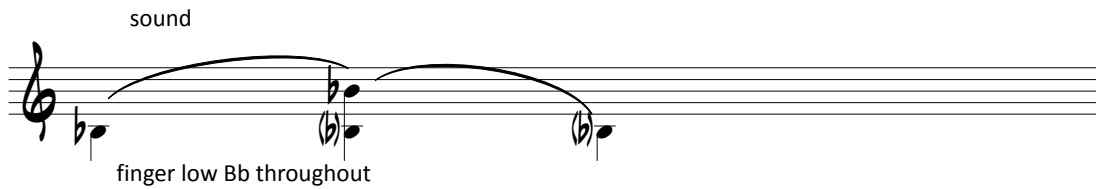
normal fingering    Switch to low Bb fingering    maintain this Bb    Sound top note, finger low Bb throughout



Also try producing the fundamental Bb and slur up to the first overtone Bb. Slur back down to the fundamental Bb to finish the exercise.



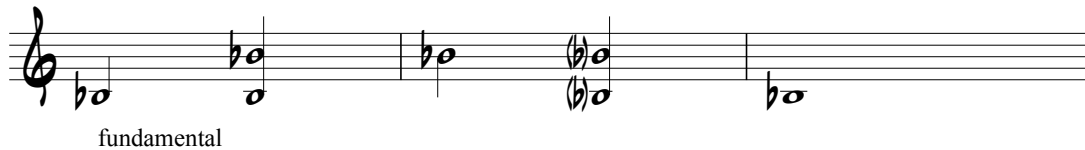
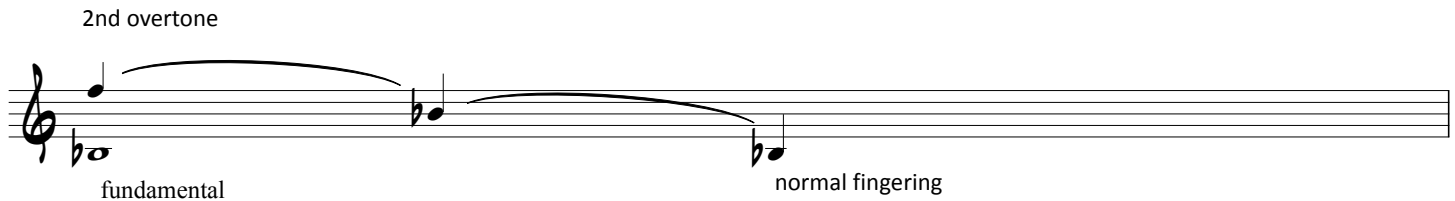
Do the same with the higher overtones and slur down back to the fundamental.



The main goal of the overtone exercises are to match pitch and tone color between the overtone note and the normal fingering for that pitch. The best exercise for this is the matching exercise.

First play the fundamental low Bb then slur to the first overtone (fingering low Bb). After you have a good grasp of the first overtone, switch to your regular middle Bb fingering.

Listen to the difference in tone color and pitch; then switch back to the first overtone by fingering low Bb again. Repeat this part many times. Finally, slur back down to the original low Bb. (Liebman, 2006)



## VII Articulation

### Single tonguing:

The most basic articulation using the tongue; it involves the tip of the tongue on the reed. Several things determine how an articulation can be created:

- 1 where the reed is articulated
- 2 the stiffness of the tongue as the reed is articulated
- 3 the amount of tongue used to articulate

The reed should be articulated approximately 1/16 to 1/4 inch from the tip of the reed. We generally think of creating different vowels for different articulations. The tongue should be set in the "EE" position, with the sides of the tongue loosely wedged between or underneath the upper molars. Syllables "TEE" will create a more detached, or staccato sound, while "DEE" will create an articulation more in the marcato and connected style. "NEE" can be used for strong accents.

### Alternate articulations specific to jazz:

Perhaps the most common articulation used in jazz for articulation of successive eighth notes is rarely talked about in jazz education, and that is a "chewing" effect. The concept is that we are trying to articulate off beat eights in jazz.

When we use the tongue to do this it can be really effective, Michael Brecker was really great at it, as well as other sax players. However, many jazz players are looking to accent the aforementioned off-beats in an extremely legato fashion, and this can be achieved through a form of articulation that really doesn't even utilize the tongue!

It involves applying pressure with the lower lip and jaw to the reed, giving the effect of a bit of an accent, but without any separation between notes.

This as mentioned is extremely useful, but difficult to master at first. It takes a lot of coordination.

See class demonstration.

Doodle tonguing:

This is a technique used more for an effect than anything. It involves using the tongue to rearticulate in an unusual way; the reed is first articulated, and then the top of the mouthpiece. In essence the tongue is acting like a flag blowing in the wind, perhaps hitting an object from both sides. To envision this merely say "doodle doodle doodle". See Demonstration.

Double tonguing:

Classical brasswind and woodwind players utilize double tonguing articulation. It involves articulation in the back of the throat that emulates the sound of articulating the reed. Imagine saying the syllables "too ku too ku" and you'll have an idea of how this works. The "too" portion of course is the articulation of the reed, and the "ku" is the articulation in the back of the throat.

See demonstration.



### VIII Scales and Arpeggios

Practice patterns for scales: Major, minor (dorian, natural minor, ascending jazz melodic minor, harmonic minor and diminished).

Here are the six basic patterns I use for running scales. The examples are in thirds applied to a C major scale.

Pattern 1. Ascending thirds



Pattern 2. Descending thirds



Pattern 3. Ascending/Descending thirds



Pattern 4. Descending/Ascending thirds





Pattern 5. Ascending triplet thirds



Pattern 6. Descending triplet thirds



Another way to practice scales is all of the modes arpeggiated; four different patterns:

Pattern 1. Ascending.



Pattern 2. Descending.



Pattern 3. Ascending/Descending.





Pattern 4. Descending/Ascending.



Apply the six thirds patterns and the arpeggio patterns to the following scales. Included are some of the scale and chord relationships.

Dorian minor



D Harmonic minor



D "jazz" melodic minor



D Half/Whole Diminished



Resources for jazz scales:

Jamey Aebersold publishes a play along book/CD that is a scale syllabus, and is effective.

Jerry Bergonzi's books on jazz improvisation deal with a great unveiling of scale concepts and application; specifically his books Pentatonics, Melodic structures, and the Jazz Line.

These are all published by Advance music.

## IX Equipment

Different horns:

There are quite a few horns on the market, some new and some 60 and even 70 years old that are good horns.

Here are just a few with some basic information:

**Selmer Balanced Action** (approx 1930-1945)

This is the horn that Ben Webster used, and several other players from the swing era.

**Super Balanced Action** (approx 1945-1954)

This is the horn used by Coltrane for most of his career, as well as many other saxophonists from the 50's and sixties.

**Selmer Mark VI** (1954-1973)

Along with the Super Balanced, one of the most used and appreciated saxophones. Tends to have a stronger and more focused tone than the Super Balanced action.

**Selmer Mark VII** (1973- 1980)

All of the horns following the Mark VI had a major neck design change which produced a darker sound. The horn has been used by many alto players, but less popular on tenor.

**Selmer Super Action**

**Selmer Super Action series II**

All of these horns are very good, a little less dark than the Mark VII. Some of the good qualities of the earlier Selmer sax.

**Selmer Reference 38, and 54.**

Selmer's attempt at recreating the Super Balanced Action and the Mark VI.

They seem to have had more success with the altos then the tenors, although some of the tenors are good.

**Conn 10m, 6M**

Great saxophones made in the 40's to the 60's. Used by Lester Young and many other great saxophonists.

**King**

Used by Charlie Parker and Cannonball Adderley

**Yamaha**

Excellent student model horns, probably the best in the world for students.

The intermediate horns are outstanding, too.

**Yamaha Custom Series**

Arguably one of the best saxophones made since the Super Balanced Action of the late forties.

Used by many of the great saxophonist today, including Phil Woods. The horns have similarities to the Selmer Mark VI, with a more versatile neck.

# 7th Scale Exercise

B FLAT INST.

JEFF RUPERT

## 1/2 STEP OPTIONS BASED ON BARRY HARRIS' SYSTEM

1/2 STEPS TYPIFY THE BEBOP JAZZ LANGUAGE. BELOW IS A SYSTEM FOR ADDING 1/2 STEPS TO THE DOMINANT SCALE. THESE 1/2 STEPS SERVE TWO PURPOSES: THEY KEEP CHORD TONES ON DOWNBEATS (OF THE DOMINANT CHORD) AND ADDS CHROMATICISM (AND COLOR TONES, OR UPPER EXTENSIONS).

**C<sup>7</sup>** TRADITIONAL "BEBOP" OR 7TH SCALE. 1/2 ADDED BETWEEN 8-7.



**C<sup>7</sup>** DOMINANT SCALE, STARTING ON THE 9TH. NO 1/2 STEP ADDED.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 9TH. 1/2 STEPS ADDED BETWEEN 9-1 AND 8-7.



**C<sup>7</sup>** DOMINANT SCALE STARTING ON THE 3RD. 1/2 STEP BETWEEN 8-7.



**C<sup>7</sup>** DOMINANT SCALE STARTING ON THE 3RD. 1/2 STEPS ADDED BETWEEN 3-2, 9-8 AND 8-7.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 4TH, NO 1/2 STEP ADDED.



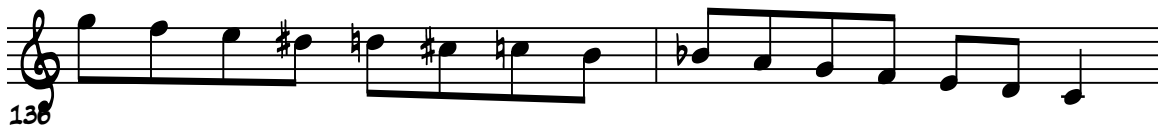
**C<sup>7</sup>** DOMINANT SCALE FROM THE 4TH. 1/2 FROM 9-8, 8-7.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 5TH. 1/2 STEP ADDED BETWEEN 8-7.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 5TH. 1/2 3-2, 9-8, 8-7.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 6TH (13). NO ADDED 1/2 STEPS.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 13 (6TH) 1/2 9-8, 8-7.



**C<sup>7</sup>** DOMINANT SCALE FROM THE 7TH. NO ADDED 1/2 STEPS EXCEPT 8-7



**C<sup>7</sup>** DOMINANT SCALE FROM THE 7TH, 1/2 STEPS FROM 3-2, 9-8, 8-7.



# 7th Scale Exercise

E FLAT INST.

JEFF RUPERT

## 1/2 STEP OPTIONS BASED ON BARRY HARRIS' SYSTEM

1/2 STEPS TYPIFY THE BEBOP JAZZ LANGUAGE. BELOW IS A SYSTEM FOR ADDING 1/2 STEPS TO THE DOMINANT SCALE. THESE 1/2 STEPS SERVE TWO PURPOSES: THEY KEEP CHORD TONES ON DOWNBEATS (OF THE DOMINANT CHORD) AND ADDS CHROMATICISM (AND COLOR TONES, OR UPPER EXTENSIONS).

G<sup>7</sup> TRADITIONAL "BEBOP" OR 7TH SCALE. 1/2 ADDED BETWEEN 8-7.



G<sup>7</sup> DOMINANT SCALE, STARTING ON THE 9TH. NO 1/2 STEP ADDED.



G<sup>7</sup> DOMINANT SCALE FROM THE 9TH. 1/2 STEPS ADDED BETWEEN 9-1 AND 8-7.



G<sup>7</sup> DOMINANT SCALE STARTING ON THE 3RD. 1/2 STEP BETWEEN 8-7.



G<sup>7</sup> DOMINANT SCALE STARTING ON THE 3RD. 1/2 STEPS ADDED BETWEEN 3-2, 9-8 AND 8-7.



**G<sup>7</sup>** DOMINANT SCALE FROM THE 4TH, NO 1/2 STEP ADDED.

130

**G<sup>7</sup>** DOMINANT SCALE FROM THE 4TH. 1/2 FROM 9-8, 8-7.

132

**G<sup>7</sup>** DOMINANT SCALE FROM THE 5TH. 1/2 STEP ADDED BETWEEN 8-7.

134

**G<sup>7</sup>** DOMINANT SCALE FROM THE 5TH. 1/2 3-2, 9-8, 8-7.

136

**G<sup>7</sup>** DOMINANT SCALE FROM THE 6TH (13). NO ADDED 1/2 STEPS.

138

**G<sup>7</sup>** DOMINANT SCALE FROM THE 13 (6TH) 1/2 9-8, 8-7.

140

**G<sup>7</sup>** DOMINANT SCALE FROM THE 7TH. NO ADDED 1/2 STEPS EXCEPT 8-7

142

**G<sup>7</sup>** DOMINANT SCALE FROM THE 7TH, 1/2 STEPS FROM 3-2, 9-8, 8-7.

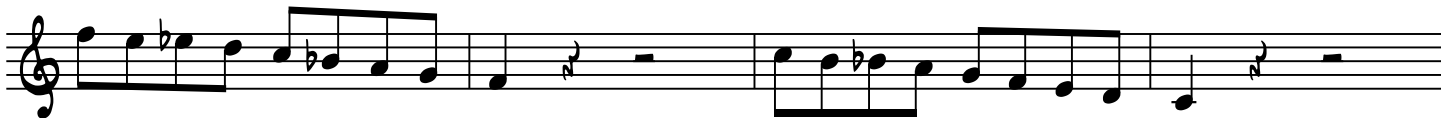
144

# B FLAT BLUES PROGRESSION

C<sup>7</sup> F<sup>7</sup> C<sup>7</sup>

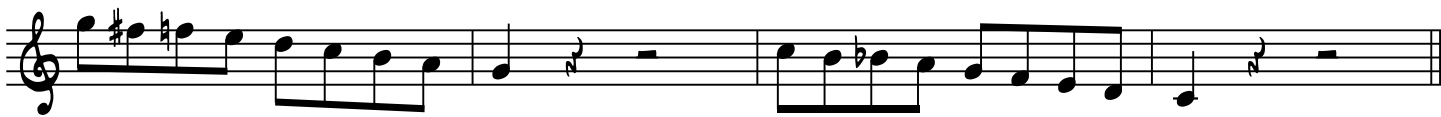


F<sup>7</sup> C<sup>7</sup>



5

D<sup>Mi</sup>9 G<sup>7</sup> C<sup>7</sup>



9

# B FLAT BLUES PROGRESSION

JEFF RUPERT

B FLAT INST

5

9

THIS IS WHAT WE CALL THE "THREE" RULE- RUNNING FROM THE ROOT UP TO THE THIRD, AND THEN DOWN THE 7TH SCALE.



# B FLAT BLUES PROGRESSION

JEFF RUPERT

E FLAT INST

The musical score is written in treble clef with a key signature of one sharp (F#) and a 4/4 time signature. It consists of three staves of music. The first staff begins with a 4-measure phrase under the chord G7, followed by a 4-measure phrase under C7, and another 4-measure phrase under G7. The second staff starts with a 4-measure phrase under C7, followed by a 4-measure phrase under G7. The third staff begins with a 4-measure phrase under Ami9, followed by a 4-measure phrase under D7, and ends with a 4-measure phrase under G7. Measure numbers 5 and 9 are indicated at the start of the second and third staves, respectively. The piece concludes with a double bar line at the end of the third staff.

# B FLAT BLUES PROGRESSION

JEFF RUPERT

E FLAT INST

The musical notation is written in treble clef with a key signature of one sharp (F#) and a 4/4 time signature. The progression consists of three lines of music, each with four measures. The first line starts with a G7 chord, followed by a C7 chord, and ends with a G7 chord. The second line starts with a C7 chord, followed by a G7 chord. The third line starts with an Am9 chord, followed by a D7 chord, and ends with a G7 chord. The notes in each measure are: Line 1: M1 (G4, A4, B4, C5), M2 (B4, A4, G4, F#4), M3 (G4, A4, B4, C5), M4 (B4, A4, G4, F#4); Line 2: M1 (G4, A4, B4, C5), M2 (B4, A4, G4, F#4), M3 (G4, A4, B4, C5), M4 (B4, A4, G4, F#4); Line 3: M1 (G4, A4, B4, C5), M2 (B4, A4, G4, F#4), M3 (G4, A4, B4, C5), M4 (B4, A4, G4, F#4). Fingerings are indicated by numbers 1-5 below the notes. A '5' is written below the first measure of the second line, and a '9' is written below the first measure of the third line.

THIS IS WHAT WE CALL THE "THREE" RULE- RUNNING FROM THE ROOT UP TO THE THIRD, AND THEN DOWN THE 7TH SCALE.