



**Study the Scales and Arpeggios
practices for Saxophone Students
in the Jazz Department
of Sichuan conservatory of Music,
Chengdu, Sichuan Province,
The people's Republic of China.**

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Abstract

The purposes of this thesis are 1) to study the teaching of jazz music for saxophone in Sichuan province. and 2) to create scales and arpeggios exercises book for saxophone. 3) To verify the correctness of Saxophone exercises book by three experts.

The methodology was qualitative method for this thesis. The researcher interviewed three experts in Sichuan Province, using the IOC method and then created the exercise book. There are 6 lessons being included in the exercise book. The first lesson is Major scales and arpeggios, the second lesson is Major pentatonic scale and minor pentatonic scale, the third lesson is Major blues scale and minor blues scales, the fourth lesson is Minor scales, the fifth lesson is Bebop scales and the sixth lesson is Symmetrical scales.

The research findings were 1) Correct content, orders, disciplines and advanced content of the exercise book of the scales and arpeggios 2) Utilizing knowledge form the experts and a variety of sources, then, created the exercise book. 3) The IOC method for evaluating exercise book by three experts, the score was 0.89.

Keywords:

The Scales and Arpeggios, Saxophone Students, The Jazz Department of Sichuan Conservatory of Music Sichuan Province

● Background and Research problems

Jazz originated in New Orleans at the end of the 19th century as a fusion of music, when black Africans brought their rich rhythms as slaves, causing an impact on European classical music at the time. With the passage of time, the two cultures began to merge under the African rhythms and the harmony of classical music (Ted, 2011), gradually forming a new type of jazz music.

After nearly 100 years of development, jazz has developed into a full-fledged musical genre, from blues to ragtime. It entered the “Golden age” of swing music in the 1920. In the 1950, jazz introduced new styles such as Bebop and Latin jazz, then developed contemporary jazz and avant-garde jazz. Nowadays, jazz has become a mature modern music with various styles. It is a very vital discipline in western conservatories and even universities with mature teaching system (David, 2002).

In the 1990, jazz, as an emerging music, began to be known by Chinese people. After nearly 20 years of development, major music colleges in China, such as China Conservatory of Music, Shanghai Conservatory of Music, Xinghai Conservatory of Music, Shenyang Conservatory of Music and Sichuan Conservatory of Music, have slowly opened jazz majors. However, compared with jazz majors in well-known music colleges and universities abroad, the teaching system, teaching methods and systematization of Jazz in China are still lagging behind (Geng, 2019).

In Chengdu, Sichuan province, at the beginning of this century, several teachers from the Pop Music School of Sichuan Conservatory

of Music came into contact with jazz and began to carry out relevant practice. Gradually, Chengdu had its first jazz band, namely, Boss Ma Jazz Band. After 20 years of development and motivation, the jazz atmosphere in Chengdu has become mature with the rich popularization among teachers and students. In 2016, the Jazz Department in Sichuan Conservatory of music was founded by one of the members of “Boss Ma”, as one of the teachers since establishment, I have witnessed the transformation of students from immature fellows to mature musicians. In the past five years, I have gained a lot, also encountered some problems that need to be solved. Most importantly, I need to solve the basic problem for the students under scales and arpeggios practicing.

Before choosing the my thesis topic, the reseavcher have consulted some facts. Firstly, there is barely a gradual and systematic approach for students under scales and arpeggio practicing in the style of jazz for saxophone in China. However, scales are the technical foundation of any instrumental performing arts. Secondly, the students do not have enough scales and arpeggios to use while doing improvisation, they are lacking of adequate accumulations of different variations of jazz scales. Thus, that is the reason why I choose this topic. I intend to write a practice of scales and arpeggios for myself and the students who wish to study jazz saxophone professionally.

In western music including jazz music, the most fundamental scale is the major scale. Then, it evolved into different variations. In those variations, the most important ones are 1) Harmonic minor scales. 2) Melodic minor Scale. and 3) Modes Kate, (1935) Thus, in this thesis,

there will be four sections of the practice around those four different scales. In each section, important and fundamental scale patterns, arpeggios and etudes will be included.

● **Research objectives**

The objectives of research were: 1) To study the teaching of jazz music for saxophone in Sichuan province. 2) to create scales and arpeggios exercises book for saxophone. and 3) to verify the correctness of Saxophone exercises book by 3 experts.

● **Research questions**

1. How to play the saxophone in the style of jazz music?
2. How many types of scale and arpeggio and there?
3. How should I make the students practice the scales and arpeggios effectively?

● **Research Methodology**

Qualitative Research

● **Research Findings**

Scales And Arpeggios For The Students In Sichuan Conservatory of Music
Analysis of Scales And Arpeggios For The Students In Sichuan Conservatory of Music

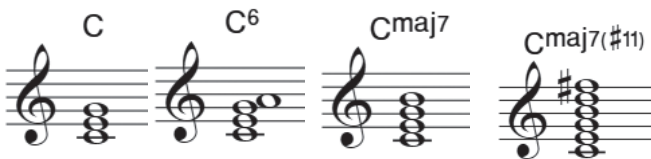
Lesson 1 Major Scales and Arpeggios

Major Scale is invented in 550 B.C. Furstner & Williams (1993). It contains 7 notes. In 2nd century, the Greeks arranged the seven notes of the major scale into modes. It is an extension of the major pentatonic scale by adding a 4th and 7th degree. The intervals of each note from the root note to the next root note an octave above are major second, major second, minor second, major second, major second, major second and minor second. it is constructed by only intervals of the seconds.

There are seven notes in the major scale, by starting at each different note of the scale, it produces seven different modes. For example, in C major scale, Selecting C as the root note, it is the C Ionian mode (C major scale), Selecting D as the root note, it is the D Dorian mode , Selecting E as the root note, it is the E Phrygian mode, Selecting F as the root note, it is the F Lydian mode Selecting G as the root note, it is the G Mixolydian mode, Selecting A as the root note, it is the A Aeolian (Natural minor scale), Selecting B as the root note, it is the C Locrian mode

In terms of how those scales can be used in different chords, if the tonic of the chord and scale are all C, the choices are listed below.

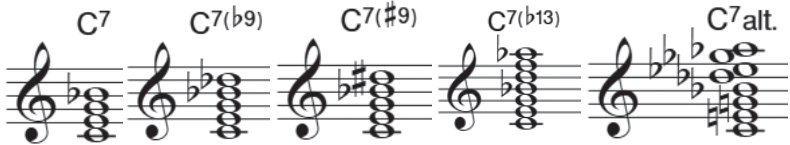
C Ionian:



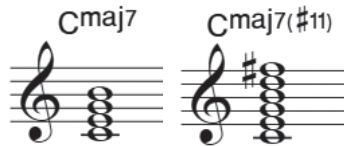
C Dorian:



C Phrygian:



C Lydian:



C Mixolydian:



C Aeolian:



C Locrian:



Lesson 2 Major Pentatonic Scale and Minor Pentatonic Scale

Pentatonic scale is an ancient scale with a rich history. In 500 B.C. In both Greek and China, people discovered pentatonic scale first. Nowadays, it can be heard in many different genres of music such African music, western classical music, Asian music, etc. In jazz, it is one of the most fundamental sounds. It can be heard in many early jazz tunes like “I Got Rhythm” by George Gershwin, “Sonny Moon for Two” by Sonny Rollins, etc.

There are mainly two types of pentatonic scales. One is the major pentatonic scale; another one is the minor pentatonic scale. Each of them contains five notes. In the major pentatonic scale, the intervals between each note are major second, major second, minor third, major second and minor second. The example C major pentatonic scale are been shown below.

If it starts with the sixth degree of the major pentatonic scale, it is the minor pentatonic scale. From the root note, the intervals between each note of the scale are minor third, major second, major second, minor third and major second. The example A minor pentatonic scale are been shown below, it has the same notes as the major pentatonic scale yet starts with different root note-the sixth of a major pentatonic scale.

In terms of how pentatonic scales can be used in different chords, if the tonic of the chord and scale are all C, the choices are listed below:

C major pentatonic scale:



C minor pentatonic scale:



Lesson (put on space) 3 Major Blues Scale and Minor Blues Scales

The origin of the Blues scale is believed from the music of black slaves in New Orleans, Louisiana state, USA at the end of the 19th century.

The blues scale is closely related to pentatonic scale. For example, in C major pentatonic scale, the notes are C, D, E, G, A, C as the figure below. The notes in C major blues scale are C, D, Eb, E, G, A, C. Thus, adding one more flat third into the major pentatonic scale, it becomes the major blues scale.

In terms of the internal structure of the major blues scale, from the root note to the next root note an octave above, they are- major second, minor second, minor second, minor third, major second and minor third.

As that there is no seventh degree in the major blues scale and it is a tonic scale, for example, the C major blues scale, can be used in the following tonic chords:



For the minor blues scale, the internal structure from the root note to the next root note an octave above is: minor third, major second, minor second, minor second, minor third and major second.

The minor blues scale, for example C minor blues scale can be used in the following chords:



Lesson 4 Minor Scales

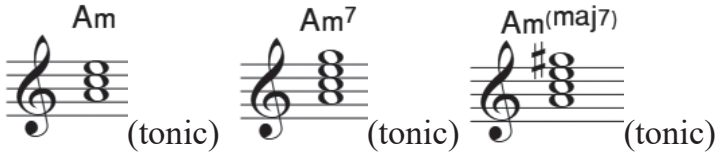
Natural minor is the 6th mode of major scale, it is also called Aeolian Scale. The internal structure of A natural minor scale are: major second, minor second, major second, major second, minor second, major second and major second.

It can be used in the following chords:



The harmonic minor scale is closely related to the natural minor scale. If change the flat seventh in natural minor scale to a natural seventh, it becomes the harmonic minor scale. For example, in a natural minor scale, the notes are A, B, C, D, E, F, G, A. If change the G to a G#, it becomes the harmonic minor scale. The internal structure of harmonic minor scale are: major second, minor second, major second, major second, minor second, minor third and minor second.

Also, A harmonic minor can be used in the following chords:



In Jazz, harmonic minor scale is very popular in the minor II-V progression. There are two modes of the harmonic minor are frequently used- the mode which starts with the second degree and the mode start with the fifth degree. In this mode the I, III, V and VII degree generates a Bm7b5 which is the standard II chord of A minor II-V. The I, III, V, VII and VIII degree generates a E7b9 which is the standard V chord of a minor II-V.

Thus, in a minor II-V progression, the second and fifth mode of a harmonic minor can be well utilized.

For the natural minor scale, if rising the sixth and the seventh degree, it is the melodic minor scale. For example, in the key of A, A natural minor and A melodic minor will be illustrated below:

The internal structure of A melodic minor scale are: major second, minor second, major second, major second, major second, major second and minor second. There are seven different modes of the melodic minor. Among them, in jazz, the most famous mode is the Superlocrian scale which is the seventh mode of the Melodic minor. For example, for G# Superlocrian, if it is utilized in G#7, it has all the colour notes which is frequently used in the dominant chord in jazz: the flat ninth, the sharp ninth, the sharp eleventh and the flat thirteenth. Thus, in any dominant seventh chords, especially the dominant seventh altered chords, it is the most proper scale to choose from.

Lesson 5 Bebop Scales

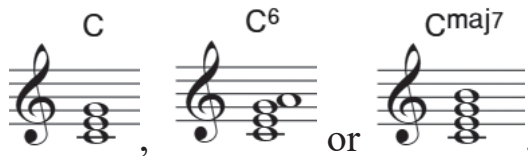
Michael&Graham, (1993) said that Bebop scale is the most important scale for the bop era. As jazz musician's rhythmic interest switched from playing crochets to quavers, then it is necessary to have a scale matches the chord tones on every down beat. Thus, different bebop scales have evolved from the major scales and its modes.

The major bebop scale is a scale evolved from major scale by adding a flat sixth. The internal structure of major bebop scale are: major second, major second, minor second, major second, minor second, minor second, major second and minor second.

Bergonzi (2015) said, for instance, for C major bebop scale, playing quavers, starting from the chord tone of C6, descending then ascending, every downbeat will always be the chord tones of C6: C, E, G and A.

As a result, especially for playing fast tunes, it is a good facility to use due to that you do not need to be worried about anything as it will always landing on the chord tones.

In terms of the chords where you are able to utilize the scale, they are:



For the bebop minor scale, there are two types of them. The first one is the tonic minor bebop scale with a natural seventh or a flat seventh. The internal structure for the scale from the root note to the next root note an octave above are: tonic minor scale with a natural seventh: major second, minor second, major second, major second, minor second, minor second, major second, minor second. tonic minor scale with a flat seventh: major second, minor second, major second, major second, minor second, minor second, minor second and major second.

Playing quavers of those two scales, the down beat will always be I, III, V, VI. Thus, for example, if C is the root note of a tonic minor chord, the tonic minor bebop scale can be used in:



The minor bebop scales are scales evolve from the Dorian mode by adding a flat seventh before the natural seventh. The internal structure of these scales are major second, minor second, major second, major second, major second, minor second, minor second and minor second.

Playing quavers of those two scales, the down beat will always be the root, the flat third, the fifth and the flat seventh. Thus, for example, if C is the root note of a tonic minor chord, the minor bebop scale can be used in:



If add a natural seventh(a passing tone between the flat seventh and the root) into the Mixolydian scale, it becomes the bebop dominant scale. As the notes on the I, III, V and bVII degrees form a dominant chord, thus, it is named as “bebop dominant scale”. The internal structure of the example-C bebop dominant scale are: major second, major second, minor second, major second, major second, minor second, minor second and minor second.

In terms of the places for using this scale, for example, C dominant bebop scale, it can be used in any C dominant seventh chords.

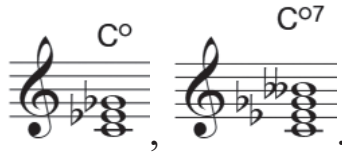
Lesson Space 6 Symmetrical Scales

Hearle (1980) said, inside a symmetrical scale, the structure of intervals in the scale is regular and recurring. Between each note in the scale, the interval can be all whole steps of half steps. Some symmetrical scale may have an equal number of certain intervals. In this thesis, two frequently used symmetrical scales in jazz will be mentioned, they are whole tone scale and diminish scale.

In whole tone scale, all the notes next to each other are a whole step away. Thus, there are six notes in whole tone scale. An example of C whole tone scale will be illustrated below: Example 33: C whole tone scale

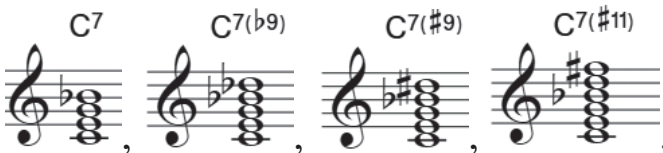
Hearle (1980) said that due to its unique structure, there are only two different sounding whole tone scales half steps next to each other. The C, D, E, F#, G# and A# whole tone scales start with different roots however share the same notes with each other. The C#, D#, F, G, A and B whole tone scale start with different roots however share the same notes with each other. Thus, there are in total twelve diminished scales.

For the utilization of diminished scale, for example, C diminished scale, it can be used in:



If it starts at the second degree of a diminished scale, that is the 8-note-dominant scale. It is a eight-note symmetrical scale with regular half step and whole step structure of intervals.

Due to that within the scale, it has the root, the third, the fifth, the flat seventh degree which are the chord tones of a dominant seventh chord. It also consists of rich color tones which are the the flat ninth, the sharp ninth, the sharp eleventh. Thus, it can be utilized in dominant chords such as:



Verified by 3 experts.

The evaluation of the questionnaire consists of five essential questions which are based on the correct content of the exercise book, the correct order on the content of the exercise book, the methodology of practice and the extension of the exercise book. The score have there levels which are -1, 0 and 1. Three experts was invited to do the scoring.and SPSS 23.0 software was used for statistics, processing, conclusion, and analysis of expert opinions.

The researcher used the IOC method, evaluated the exercise book with the three experts, got passed in the method with a score of 0.89 which is concerned as a high score.

From the perspectives of the “Scales And Arpeggios For The Students In Sichuan Conservatory of Music” from three experts, expert Long Yu said that “The exercise book combined the classical method and the jazz method properly.” As a classical musician, he believed that this exercise book could be used not only in the domain of jazz music, but also be good referencing material of classical musicians especially in terms of practicing scales and arpeggios. “For the classical saxophonist”, he mentioned, “While they practice the scale arpeggios, they only practice the scale and basic triads and adding different articulations on them.” However, he mentioned, in the “scales and arpeggios for the students in Sichuan Conservatory of music”, a lot of variations of sequences of exercises of the scales and arpeggios were included. For example, the triads and seventh chord from each degree of the scale, the four-note-grouping sequence and the variation of the practice in pentatonic scale like the third of pentatonic scale

rarely appeared in the practice of the classical saxophone, they had good technical benefits if a student of classical saxophone doing referencing from this book for the musician's practice of scales and arpeggios.

From the perspective of Dr. James Murray Morrison, firstly, he said "The content of the exercise book is sufficient for the undergraduate student in a jazz undergraduate degree." He mentioned that, important scales in the style of jazz were included. For example, the blues scales, pentatonic scales, bebop scales and the symmetrical scales. Also, he affirmed the correctness of the orders of the lessons. Is this a direct continuation? "The order of the exercise book was designed according to the tradition of the western music, it started with the major scale and its arpeggios. Then, the minor scales its arpeggios. After the minor scale, the blues scales and pentatonic scales are appropriate according to the east tradition. Then, the bebop scales and the symmetrical scales and its arpeggios were appropriate according to the development of the history of jazz music. He stated that "it is appropriate for the researcher to emphasis of using the metronome in the exercise book. It will help the students to keep a steady and even rhythm and speed, which is crucial to a success of a high-quality performance. Also he highly approved that in the exercise book, the practices covered the full range of the notes of the saxophone, which is able to produce a comprehensive improvement of the instrument for the students.

From the perspective of Li Runkun. He mentioned that fundamental scales like the major scale and different minor scales

was included in the exercise book, which was able to help the student to set a good foundation. “A comprehensive variety of the frequently used jazz scales on the V7 chord such as the altered scale, Spanish Gypsy scale, the Super Locrian scale, the diminished scale and the whole tone scales are well allocated in the exercise book.” Said Dr. Li. “It will help the students to develop a solid vocabulary of jazz scales and arpeggios.”. He also mentioned that for the advanced scales, for example, the altered scale, 8-note-dominant scale and the chromatic scale, which were appropriately classified in the exercise book. “The advanced material in this exercise book is appropriate according to the level of the jazz undergraduate student.”, Said Dr. Li.

All in all, the three experts confirmed the correctness of the content, order and overall logic from the “Scales And Arpeggios For The Students In Sichuan Conservatory of Music”. They affirmed that it is an effective and valuable skill exercise book for the jazz undergraduate student in Sichuan Conservatory of music.

● Discussion

According to the interviews from the experts, the content of the exercise book was optimized. The added that, pentatonic scales had been added and varied in the exercise book. In the same time, variations of bebop scales had been added into the exercise book according to Bergonzi, J. (2015). He introduced the tonic minor bebop scale with a natural seventh or a flat seventh. According to Li and Morrison, different variations of technical exercise of arpeggios are included into the exercise book. They meahunei that, a correct order

of the lessons of scales and arpeggios are formed The, disciplines of practicing scales and arpeggios has been developed in the exercise book. Also, According to Doctor Morrison, a set of advanced practice of scales and arpeggios are introduced in the exercise book Morrison added.

The researcher checked the main content of the course objectives from the jazz department of Sichuan Conservatory of Music, classified the required knowledge for students to grasp from the course objectives and utilized his own knowledge and the views points from the experts, and then come out with a draft of exercise book which fit the requirement of Seel & Glasgow, (1990). Seel & Glasgow, (1990) stated that the content selected to create a practice exercise must be based on the course objectives.

The researcher used the index of Item-Objective Congruence (IOC) to access the validity of the content of the exercise book. The researcher got accepted with a average score of 0.89.

● Recommendation

Firstly, the order of the exercise book can be more organized. The order of the exercise book is based on the system of the western music from the major scale. Personally, the researcher thinks that it could possibly starts with the pentatonic scale which will be easier for the beginner to get started.

Secondly, for the bebop scales, the practicing method could be more specific. The Bebop scale is a type of scale which is different from other scales. The main point of practicing this scale is to master the chord tones in every down beat. The researcher believes that it

will possibly be more effective if a backing track with II-V-I progression could be involved in order to enhance the students' ability to hear and feel the scale instead of just practicing it up and down with a fixed approach.

Thirdly, for the highest notes of scales and arpeggios in each exercise in the place when the notes goes up then goes down, it is better to have a clearer style of whether it is better to use the jazz method or classical method. In the classical style, when the notes goes up, if the highest note is on an up beat, in the next down beat, this high note will be repeated. However, in the style of jazz, if the highest note is on an up beat, in the next down beat, the note will be a note one step down instead of repeating.

Fourth, more reading materials can be added in order to enhance the content of both chapter two and the exercise book. For Chapter two, the researcher believes that the introduction and background of every scale could be more specific. Also, the history, the function, description of the color and style could be more specific. For the exercise book, the researcher could read more material of the variety of the methods of practicing the scales and arpeggios in order to create a exercise book with more efficiency, reliability and validity.

Fifth, this research can be used for other instruments by other researchers. Although the range of the notes in the exercise are for the saxophone, however, other researchers can alternate the range for different instruments. Also, different forms of practice in this exercise book for example: four-note-grouping, scalic triad chord, scalic 7th chord can also be applied for other instruments.

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