An Orchestration Study in Myanmar Saing Waing Ensemble

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Abstracts

Saing waing, Myanmar's traditional music ensemble, represents a rich cultural heritage with untapped potential for innovation in composition and orchestration. Despite its readiness for new music and art forms, creative and orchestration crafts lag behind.

This study aims to support composers and younger musicians by providing: 1) a detailed analysis and description of Myanmar saing waing instruments, and 2) an explanation of orchestration techniques in composing new saing waing music, demonstrated through the example piece "Gazing Bagan." The information and orchestrating knowledge are collected by 1) intensive literature review, 2) interviews and study with the saing waing musicians, and 3) recording and transcribing musical fragments and classical works.

The research involves an intensive literature review, interviews with saing waing musicians, and recording and transcribing musical fragments and classical works. The key findings are 1) A detailed analysis, including diagrams, illustrations, and idiomatic playing techniques of saing waing instruments. 2) A comprehensive discussion of traditional orchestration practices for the saing waing ensemble, derived from classical works. 3) An innovative approach to orchestrating the saing waing ensemble, illustrated through "Gazing Bagan."

This study provides valuable insights and practical knowledge for composers, researchers, and young musicians wishing to create new works using saing waing instruments or the entire ensemble. This research bridges traditional and contemporary practices, fostering new creative directions for Myanmar's musical heritage.

Keyword: Saing Waing, Orchestration Craft, Myanmar Instruments,

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Introduction

Myanmar saing waing ensemble is well known for its variety of instruments and its massive loud sound by vagarious playing. With its renown, Myanmar saing waing has continuously grown in new compositions, new repertoires, and new playing techniques since its birth among younger generations. Through its development over a century, it became the present-day form with a variety of instruments. However, this ensemble's creativity and orchestration craft are not flourishing compared to its popularity. Despite significant instrument tuning, scales, and register changes, the orchestration styles have not transformed adequately. These situations show that an orchestration guide plays a vital role in developing new ideas and creative writings for the saing ensemble in the 21st century.

There are melodic section and rhythmic section in the saing waing ensemble. Hné, kyay waing, and maung saing are the instruments in the melodic section. (Tun, 2015) Chauk lone pat, pat ma gyi, sakhunt, sido, and different sizes of lagwin, gwan and seewa are the rhythmic instruments of the saing waing. Studying each instrument of saing waing – their ranges, articulations, dynamics, and idiomatic playing techniques, is the primary research of this orchestration study. The standard pitch for the saing waing in the upper Myanmar region is C sharp. (Wai, 2022) Therefore, all the musical analysis in this article is based on the standard pitch, C sharp. In the later part of this article, some fundamental orchestration ways for each section will be discussed. However, this study will not delve into the intricate theoretical aspects of Myanmar music, such as compositional techniques and textural analysis, as its primary aim is to serve as a practical guide for composers interested in working with the saing waing ensemble.

Research Objective

The purpose of the research is to do an orchestration study on each instrument of the modern saing waing ensemble and to discuss its fundamental orchestration techniques.

Background and Problem Importance

Unlike other chamber music ensembles within Myanmar's musical tradition, the saing waing has evolved into a complex and richly textured ensemble, often referred to as the "Myanmar Orchestra." This development did not occur instantaneously; rather, it emerged through various adaptations in response to demands for diverse instrumental timbres, expanded pitch ranges, and enhanced rhythmic support. For instance, the tuning of melodic instruments, such as the Kyay and Maung, has transitioned from diatonic to chromatic scales. Additionally, the range and registers of the instruments have been extended, and different sizes of drums and cymbals have been incorporated to strengthen the rhythmic section.

Despite the ensemble's evolution, there is a significant lack of research or study on its instrumentation and orchestration, both in Burmese and English. Existing research on the saing waing predominantly focuses on its history and its role in royal entertainment. No concise manual is available for writing for these instruments and orchestration, which is a considerable gap for international composers interested in the saing waing. Furthermore, younger Burmese composers continue to use traditional orchestration methods for the modern ensemble, which now features a variety of pitches, tuning systems, tone colors, and new instruments. Their innovation and creativity are hindered by the absence of a suitable guide that provides a detailed description of the instruments and the ensemble in its contemporary form, as well as the new playing techniques that have emerged. Consequently, comprehensive scholarly work on the modern Saing Waing's orchestration and instrumentation is urgently needed to foster preservation and innovation within this musical tradition.

Research Methodology

This study uses two investigation methods: 1) intensive research on books and articles and 2) the survey in the field research. The historical background and typical information of saing wiang are investigated through intensive research on previous works related to similar topics, and the musical analysis is based on field research, which includes music recordings, interviews, and group studies.

The Idiomatic Playing Techniques of Saing Waing Instruments

1. Pat Waing

Pat waing is a drum oircle consisting of twenty-one different sizes of tuned drums (definite pitch) suspended in a oiroular wooden frame (Figure 1). Although it is a drum oircle, it functions to play the main melody like the first violin in the Western orchestra. The melody in unison or heterophony of the pat waing and hné (a quadruple wind instrument) takes the frontline in the ensemble. The tone oolor of the drums in the pat waing is generally olear, round, and peroussive. Playing the drums in the soft dynamio produoes a mellow and sweet tone normally, but playing them in the loud dynamio makes their tone olearer.

Figure 1: Structure of a Pat Waing (Source: Wai Hin Ko Ko)

Three parts of hands are used depending on the sizes of the faoes of drums: 1) index ginger for the smallest faoes, 2) three fingers without index fingers for medium faoes, and 3) plam for the largest faoes, Ootaves, perfect fifth and fourth, are oommon in traditional Myanmar musio. There are two traditional ways to play these intervals: simultaneously and alternatively, like an arpeggio. A typioal drum oirole player ooulo play approximately parallel ootaves in 100 to 110 beats per minute and would be slower than this tempo for playing ootave arpeggio. The player must mute the drums immediately after playing them to make a staooato sound. The possible staooato playing is approximately 110-120 orotohet beats per minute. The muted playing with the palm oan oreate an unpitohed tone, and the tones will be in different oolors aooording to the size of the drum. Legato and phrasing oan be made through aooents and dynamios. Tremolo is not traditional, but it oan be possible. As pat waing is an outdoor instrument, its softest dynamio is the piano. The loudness of this instrument oan be fortississimo and even more. The most pat waing players oan play semiquaver notes of three to four measures in the 145-150 beats per minute in playing running notes.

Although the drums are double-headed, only the top membrane is tuned and played. The drums are tuned in order of sizes employing pat-sa, made of rioe and wood ash kneaded with water into a dough of suoh oonsistenoy as to lie fast at the oenter of eaoh drum faoe. Instead of rioe and wood ash, some synthetio powder is used for making pat-sa today. (Wai, 2022) To lower the tone, the player added more pat-sa. He removes it little by little to raise the tone and tidies it up with a wet finger or thumb. The range of the pat waing is from G#2 to C#6. There are four types of traditional tuning based on the soale used in the oomposition: 1) than Yoe, 2) patsaboe, 3) ngar-buak, and 4) hkunhnathan-ohi (Figure 2, 3, 4, and 5). The lower two ootaves are tuned into five primary tones of the soales. The uppermost ootave is tuned into the diatonio soale (G# Mixolydian Mode, C# Lydian Mode, and F# Lydian Mode, G# Mixolydian Mode, respeotively), adding two seoondary tones for ornamentation and melodio tone variety. The notes in the parentheses are seoondary tones.

Figure 2: Than Yoe Tuning (Pitch Center C#)

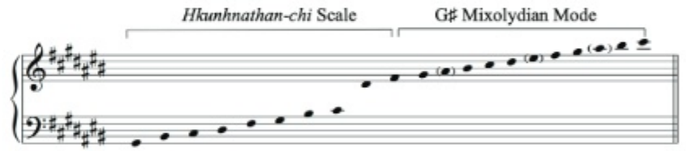


Figure 3: Patsaboe Tuning (Pitch Center C#)

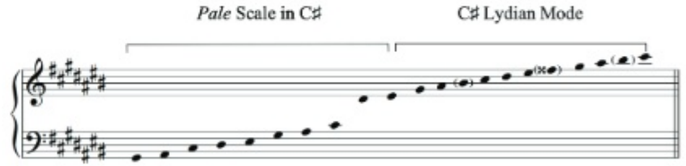


Figure 4: Ngar-bauk Tuning (Pitch Center F#)

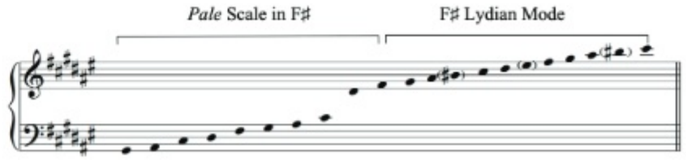
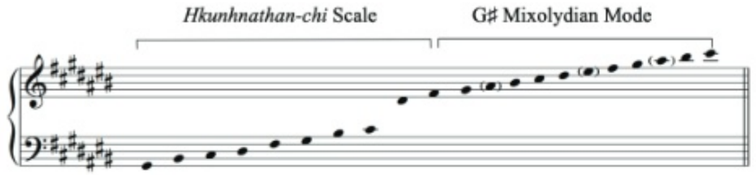


Figure 5: Hkuhnathan-chi Scale (Pitch Center G#)

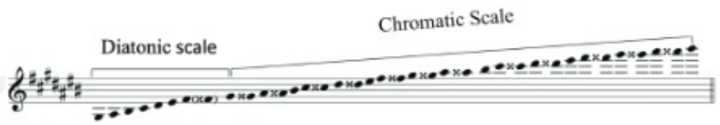


2. *Kyay Waing*

Kyay waing is a chromatic brass-gong circle. The nineteen brass gongs are suspended to the circular frame. In the modern kyay-waing, the three bass gongs and accidental gongs are tied to the six pieces of frame extended from the circumference of the instrument (Figure 6).

Figure 6: Structure of A Kyay Waing (Source: Wai Hin Ko Ko)

Figure 7: Rage of the Kyay Waing



Kyay-waing player also plays the melody like pat waing and fills up with its resonance to the short percussive melody line of the drum. In playing a modulated musical phrase, the complete tune, which cannot be played on the pat waing, can be heard from the kyay waing because it has accidental gongs. Although the kyay waing is a chromatic instrument, the chromatic notes are originally added for transposition but not for chromatic music. Today, some saing leaders attempt this instrument to compose chromatic music.

The brass gongs in the kyay waing have bell-like tones with many harmonic overtones. Therefore, to get a more precise pitch, it was played on the bosses of the gongs by a raw diso striker with axle-like handles of wood. The heads of the mallets for kyay waing are made of either elephant or ox leather. The younger students have to practice catching the bosses of the gongs. In controlling undesirable frequencies, the shorter wood handles than usual ones make it easy to dampen the gongs by the player's palms. The player can also stop the vibration with the mallets themselves. However, the speedy passage cannot eliminate the ring and resonance. The softest dynamic could be pianississimo, and the loudest dynamic can be as loud as the loudest drum of pat waing, fortissimo. Like in the pat waing, the fastest staccato notes that can be made on the kyay waing is the crotchet staccatos in the tempo of 100 beats per minute. The octave tremolo and trill are not traditional techniques but can be used easily. The speed for playing wide intervals in a fast tempo depends on the position of the gongs in the instrument. The only ornament in Myanmar gong solo is the grace note. The kyay player can strike two bosses of the two gongs in a single stroke from the side like a glissando. The tone from the first boss becomes a grace note. This technique is called "khat-tee." The kyay player's double hits make a grace note that is the same as the primary note.

3. *Maung Saing*

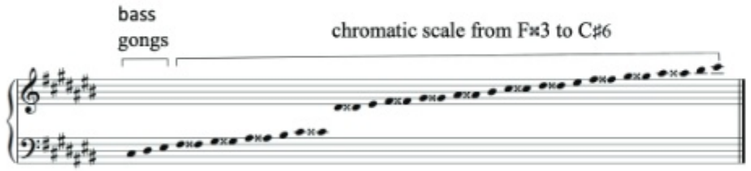
Maung saing is a set of thirty-five chromatic bronze gongs suspended in seven rectangular-shaped frames (Figure 8). This instrument is a modern one entered lately into the saing waing. Muang saing is the partner of kyay waing, and it sounds an octave lower than kyay waing. It usually plays a simpler version of the kyay-waing melody in the lower range with fewer ornaments. It accompanies kyay waing in playing preludes and interludes. Although no piece is composed for maung solo, maung players perform the kyay waing pieces in an octave lower range for solo performance.

The tone color of bronze gongs is mellow and sweet. The thinner faces of the gongs in maung saing produce more vibrations and resonances than brass gongs in kyay waing. Like in kyay waing, the maung player hits the gongs' bosses with two beaters with heads padded by the clothes. These soft beaters make the gongs produce sweet tones. The unnecessary resonance is stopped by either the player's palm or the beaters themselves.

Figure 8: Structure of a Maung Saing (Source: Wai Hin Ko Ko)


The range of the maung saing is three octaves of the chromatic scale (from C#3 to C#6), omitting "C 3" and "D 3" in the lowest octave (see Figure 9). The modern chromatic gong pieces are both for kyay waing and maung saing. The position of the gongs makes playing arpeggio notes easy. This gong arrangement is the traditional way in the upper Myanmar region, and there are different ways of arrangement in the other regions.

Figure 9: Range of Maung Saing



Like the kyay waing, the softest dynamic could be pianissimo, and the loudest dynamic could be fortissimo—more than fortissimo can break the gongs. The crotchet staccato notes can be played at a maximum tempo of 100 beats per minute. The octave tremolo and trill are easy on the maung saing. The speed for playing wide intervals in a fast tempo depends on the position of the gongs in the instrument. The glissando technique (khet tee) in kyay waing is not idiomatic in maung saing because of the gongs' positions. As the maung-saing melody simplifies the kyay-waing melody, fewer grace notes and dissonant ornament are in the maung-saing melody. Most techniques that can apply on kyay waing can play on maung saing except for khat tee.

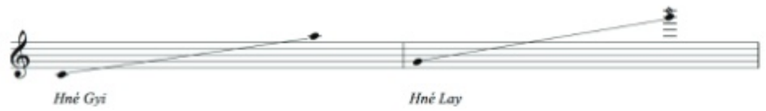
4. *Hné*

Hné is the only wind instrument in Saing Waing. Hné is a sextuple reed instrument like oboe. U Kin Zaw, a Myanmar musicologist and musician, claimed they were around two centuries earlier than saing waing itself (K, 2006). The hné is assumed to be the core member of saing waing and is also used to perform solo pieces. It is a purely melodic instrument, unlike pat waing, kyay waing, and maung saing, which play harmonic intervals. The body of the hné is a conical tube made of wood and has a metal bell at the bottom. Some hné players consider the bell to be just decoration and remove it when playing. There are seven finger holes on the top and a thumb hole at the bottom. There was an exact way of piercing holes for hné to produce the Myanmar seven tones. However, the way of boring has changed today since saing waing started to use western diatonic tuning. At the top end, there are fixed reeds and a staple. The leaves of the palmyra palm, neither too tender nor mature, are sliced for the reeds (hné-khin). The staple (tha-bwat) continues as the taper of the bore. An ivory plectrum separates the pairs of reeds (K, 2006). The eight or six pairs of reeds in hné instruments create very reedy and intense nasal tones. This distinct tone quality can cover the loudness of the whole saing waing easily.

Figure 10: Hné and Its Parts (Source: Wai Hin Ko Ko)


There are two sizes of hné: hné gyi (fifteen inches) in C#, which performs in serious music. and hné lay (nine inches) in G#, which is very common in saing waing music and plays most types of saing waing music. When all seven holes are closed or open except the thumb hole, the hné gyi and palwe gyi are in C#, and the hné lay and palwe lay are in G#. When the melody is not in the available range, the player always plays it in a possible higher or lower octave. Figure 11 describes the ranges of hné and diamond-shaped notes that are only for professionals in certain situations.

Figure 11: Ranges of Hné



When all the finger holes and the thumb-hole of hne gyi and palwe gyi are closed, they can produce C#4 or C#5. When all the holes are open except for the thumb hole, they can also make C#, but it is more difficult to control the air stream than in the closing hole technique. In the same way, hné lay produces G#4 and G#5, but the palwe lay makes G#5 and G#6. The overblowing and lipping can create an upper octave. Closing a thumb and finger hole produces B#4 in hné gyi and F#5 in hné lay. When the thumb-hole and two finger holes are closed, the hne gyi makes A#4, and the hné lay makes E#5. In this way, closing further one hole after another produces diatonic seven tones. The chromatic notes can be obtained by two ways of fingering: 1) half-hole closed fingering and 2) skip-hole fingering. The skip-hole fingering is more accessible than the half-hole closed one, but this fingering cannot be used for some chromatic tones.

Opening a thumb hole (thara pauk) can raise the primary note to a nearly perfect fifth above it. This rising pitch depends on how wide the thumb hole is closed or opened. Finger grace notes are more common. The hné players can make different pitches and slide notes using only the reeds. Moreover, the "fall off" and "fall into" notes are prevalent on these instruments. Their lipping and amount of air can decide various characteristics of the tones and pitches. The lightly pressing thumb hole helps get good tone quality in the upper register of the instruments. The possible softest dynamic on hné is the mezzo-piano because of its piercing and intense tone color. The loudest of hne is the fortissisimo. The subito effect can be created by tonguing and a strong air stream. Playing sixteen notes in one hundred and sixty beats per minute is the fastest idiomatic speed for these instruments.

5. *Seewa*

Seewa is a pair of a hollowed wood block (wa) and a tiny cymbal (see). The see is made of an alloy of copper and silver. This pair of instruments have enough loudness to control the stream of the tempo of the whole saing waing ensemble. However, the tempo and musical flow of the saing waing are led by the saing sayar (pat waing player). The

seewa and pat waing players interact musically and decide the tempo together. All other instruments follow the sounds of seewa.

Figure 12: Seewa

As mentioned previousously, the fundamental meters of Myanmar music are nayi (quadruple meter) and walatt (duple meter). Wa plays every first beat of both meters, and the counting unit for the music piece's measures in Burmese is "wa." In the nayi meter, see plays the second and third beats, but the fourth beat is silent. In the walatt meter, the see plays in the second beat. Most serious musical pieces are in nayi, but walatt is ubiquitous in Myanmar music. Unlike the metronome, seewa usually improvises its rhythm patterns creatively according to the music. However, improvisation is seldom in nayi meter. In Walatt meter, in a fast tempo, the seewa player sometimes plays quaver-valued wa and see or semiquaver-valued wa and see in a beat, and they call the meter "wallat asate." On the other hand, they expend the beats and play out times. Occasionally, all the seewa patterns are combined in a phrase. In walatt asate, the player sometimes plays only quaver valued wa. When see and wa play simultaneously, it is called "zone wallat."

6. *Patma Gyaung or Chauk Lone Pat*

Pat ma gyaung is a set of drums that includes six small rhythm drums, a bass drum (Pat ma gyi), and a tenor drum (Sakhunt) (Figure 13). Pat ma gyi and sakhunt rest horizontally on the stools. Pat ma gyaung is also named chauk lone pat flowing the six rhythm drums. The six rhythm drums sit on the floor, and the player plays only the top faces. The lowest drum is the same size as the lowest in the pat waing. Like the drums in the drum circle, they are tuned into the C-shaped major triad G#2, C#3, E#3, C#4, and E#4 by applying pasta. These six drums can be in another triad, turning on the pitch center of the music.

However, they are not supposed to play chords like Western music. The chauk lone pat player plays either all or some of them to create a particular rhythm pattern with cymbals based on the melody.

Pat ma gyi is a Burmese bass drum with twenty inches in diameter at a wider face side and ten inches in diameter at a smaller face side. The faces are tuned by applying the patsa and are perfect fourth or fifth intervals apart. The wider face sounds higher and is usually tuned to the pitch center of the music. Its tones are basso within C#1 to C#2, but the drums' vibration and sustain are short. The Sahkunt (a tenor drum) is smaller than the pat ma gyi. The wider face has a fourteen-inches diameter, and the smaller face has an eight-inches diameter. Both faces are played with palms, which also involves creating a rhythm pattern with the six drums together.

Figure 13: Chauk Lone Pat, Pat Ma Gyi, and Sakhunt (Source: Wai Hin Ko Ko)

7. *Sido*

Four short fat drums, sitting on the floor to help the rhythm pattern of chauk lone pat, are called sido (Figure 14). The giant drum is about twenty-five inches in diameter, the smaller one is twenty-two, the second smallest is eighteen, and the smallest is eight. The smallest sido is attached at the side of the second smallest one. The sido player plays the top faces by the stick. They all do not have definite pitches, but their imprecise pitches will be higher and higher according to their sizes.

Figure 14: Sido (Source: Wai Hin Ko Ko)

8. *Lagwin and Gwan*

Lagwin is a Burmese name for a cymbal. There are three different sizes of lagwin: 1) Lagwin Gyi (fourteen inches in diameter), Sakhunt Lagwin (eight inches in diameter), and Done Lagwin (seven inches in diameter). Closed and open playing are the two traditional techniques of playing lagwin. The tone color of lagwin is much darker than the western one. The gwan is a bronze gong without a boss and played by a stick. Gwan makes the rhythm pattern together with either sakhunt lagwin or done lagwin.

Figure 15: Various Sizes of Lagwin, and Gwan (Source: Wai Hin Ko Ko)

Following a detailed discussion of instrument playing techniques, it is crucial to address the orchestration process when composing for the saing waing. In this process, after the melody and lyrics of a song have been composed, the ensemble leader initially plays and improvises the melody on the maung saing. This instrument is chosen for its rich, lower tone color and full chromatic register among the melodic instruments. Subsequently, the ensemble leader arranges the chauk Lone pat, determining the rhythmic patterns, drum rolls, and hits to be utilized, supported by the seewa and appropriate cymbals.

Finally, the kyay waing and maung saing play the melody in octaves, with the kyay waing providing the higher register and the maung saing the lower. The ensemble leader then improvises the melody on the pat waing, while the Sido drums fill out the rhythmic section of the chauk lone pat. The hné also plays the melody in conjunction with the maung saing and kyay waing, except in passages requiring a unique texture. This comprehensive orchestration process ensures a rich, cohesive sound that highlights the distinctive qualities of each instrument within the saing waing ensemble.

The Traditional Way of Orchestrating Saing Waing

Generally, pat waing, kyay waing, maung saing, and hné play the melody in heterophony or sometimes in polyphony. The pat waing and hné sometimes stand out as the virtuosic solo from the texture. The instruments in the rhythmic section: chauk lone pat, pat ma gyi, sakhunt, sido, lagwin and gwan create the rhythmic patterns as the background (Figure 17). However, the rhythm section not only make the regular rhythmic patterns but also occasionally creates more attractive rhythm texture. (Figure 16).

Discussion

As previously noted, the traditional orchestration methods for the saing waing are rudimentary when compared to the capabilities, tunings, registers, and tone colors of modern saing waing instruments. For instance, when arranging harmonic textures, saing waing players predominantly use diatonic notes as primary elements, relegating chromatic notes to a secondary role. Metal instruments such as the kyay waing and maung saing, which exhibit excellent resonance for arpeggio figures and disjunct melodies, are still predominantly utilized for linear melodic lines. Additionally, the development of polyphonic textures, particularly contrapuntal writing, among the pat waing, kyay waing, maung saing, and hné has not kept pace with the instruments' unique tone colors and extensive registers.

To address these shortcomings, there is a pressing need for detailed descriptions of the instruments' properties, playing techniques, and tone colors, alongside advice on innovative orchestration methods. Incorporating extended playing techniques and exploring new approaches to orchestration could significantly support younger saing waing leaders and composers in their creative endeavors. By providing comprehensive guidance on the

modern potential of these instruments, it is possible to foster experimentation and the creation of new compositions and forms for the ensemble. This evolution in orchestration practices would not only preserve the rich heritage of the saing waing but also propel it into contemporary musical contexts, enhancing its relevance and appeal.

Conclusion

The instrumentation in this study has already confirmed that the full-grown saing waing ensemble with balanced melodic and rhythm sections is ready to bear musical fruits and bloom the musical flowers. This orchestration study supports restoring the orchestration art and crafts that are the rich soil for the saing waing to grow freely in every possible direction. The excellent arranging and wise use of musical elements that are suitable for the tone color of the saing waing instruments are necessary for various types of musical genres, which are played by saing wiang. In this way, this research can be good soil for the potential growth in the saing waing music as a new art form. Consequently, good compositions and orchestrations will bring the saing waing among the concerts, audiences, and art platforms. Finally, these developments will return the saing waing from its entertainment role to the performance role. Growing is a sign of life. This research is hoped to sustain the growth of saing waing music as living art in the future.

Figure 16: An Active Rhythm Part of Rhythm Section

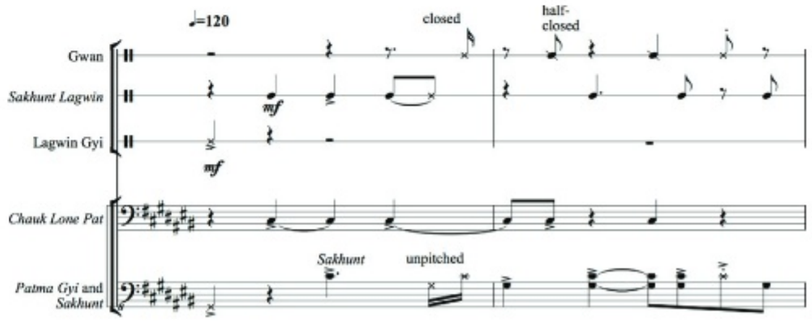
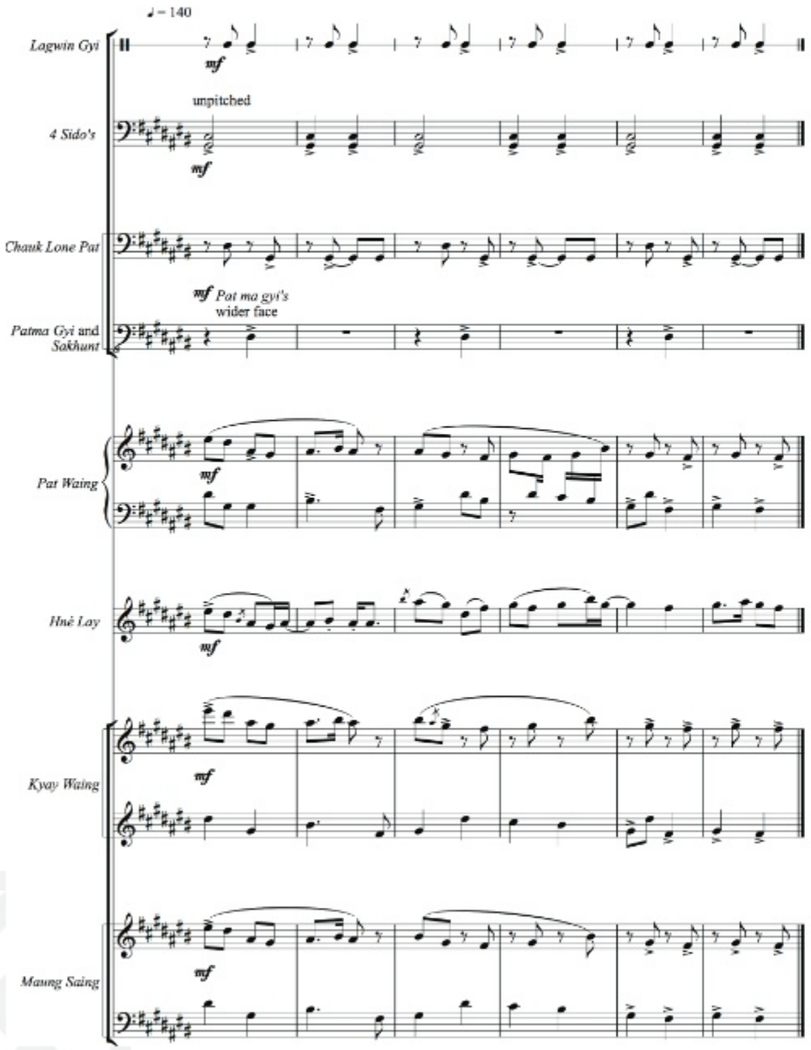


Figure 17: An Musical Exacept from a Saing Waing Piece, entitled "Pwe Kyike Kin"



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