Chapter Ⅰ
History of Korean Notations

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The Record of Music

As a language is a means of expressing and communicating the feelings or thoughts of a human by sound or letters, music is a means of expressing and delivering the feelings or thoughts of a human by an art form of rhythms, melodies, or sound harmonized and mixed with the human voice or musical instruments. While the sound of the human voice disappears immediately after the singer stops and cannot reach distant places, letters are everlasting and have no restrictions in time and space. The same is true of scores. A score contains all the elements of music by using symbols, marks or terms that are designated as having meaning. Therefore, it is essential to have a score not only for playing music but also for creating new pieces of music. Musical notation is a method of recording pieces of music using designated marks and symbols.

The use of scores of musical notation is essential to the advancement of a musical culture since it contributes greatly to the performance, play (presentation), preservation, and learning of music. Displaying the pitches, lengths of notes, tempo, dynamics, sentiments, and playing styles, the musical notation is used as a means of creation, preservation, and performance of music, regardless of whether it is vocal or instrumental. Musical notation, however, is not an absolute means of a complete record of all kinds of music; it is instead designed for expediency. That is, it cannot be used interchangeably for all kinds of music. Therefore, the type of musical notation varies in form, function, and characteristics depending on the time period, nation, ethnic group, and region using the notation.

The staff notation that is widely used today was established during the 15th and 16th centuries as Western musical notation, which had been developing since the 12th century. In some regions other than the West, various unique types of musical notation have been used, while music is preserved and performed by oral transmission in other regions and among other ethnic groups.

In Korea, after King Sejong created Jeongganbo (井間譜: Korean mensural notation), the musical notation has been used in various types, such as Munjabo (文字譜: letter notation) and Gihobo (記號譜: sign notation). Since these types of notation were used only by the court or the aristocrats, Pansori (epic vocal genre), Sanjo (散調: solo instrumental music), Muak (巫樂: shamanic music), and Minyo (民謠: folk songs), genres that were performed by the common people, were preserved and performed by oral transmission. However, it was the musical notation that made it possible to transmit most of Korea's traditional music up to the present day. The music of those countries or people who do not

have their own musical notation faces a lot of difficulties in its preservation and transmission, and its original form could easily alter. The fact that our own musical notation exists in our country elevates the value and level of Korean traditional music. The musical notation that has been used in Korea comes in eight types: Jeongganbo, Yukbo (肉譜: mnemonic notation), Yuljabo (律字譜: music letter notation), Gongcheokbo (工尺譜: simplified-character notation), Yakjabo (略字譜: abridged notation of Gongcheokbo), Oeumyakbo (五音略譜: 5-tone abridged notation), Hapjabo (合字譜: musical tablature), and Yeoneumpyo (連音標: phonetic symbols). Of these, Yuljabo and Jeongganbo are still in use today.

According to another standard, Korean musical notation can be categorized into Eumgo Gibobeop (Notation of Pitches), Sitga Gibobeop (Notation of Time Value), and Jubeop Gibobeop (Notation of Playing Styles). Eumgo Gibobeop displays the pitch of the notes in a piece of music and includes Yuljabo, Gungsangjabo (宮商字譜: notation of the pitches using a Chinese heptatonic scale), Gongcheokbo, Oeumyakbo, Yukbo, and Chayongbo (借用譜: notation using borrowed Chinese characters). Sitga Gibobeop displays not only the pitches but also the length of each pitch, and it is to this category that Jeogganbo belongs. Used for displaying the playing styles of musical instruments or the singing style of vocal music, Jubeop Gibobeop includes Hapjabo, Yukbo, and Yeoneumpyo.

Yukbo

Yukbo is the first notation that was used before the creation of Jeongganbo, Oeumyakbo, and Hapjabo. Since the Goryeo period (918-1392), it was used for instruments such as the Geomun-go (6-stringed zither), Gayageum (12-stringed zither), Daegeum (transverse flute), Piri (double-reed oboe), and Bipa (lute) by imitating the unique sounds of each instrument. Yukbo is of a great significance to Korean music research since many scores that have been transmitted are in Yukbo notation.

Yukbo is a notation that displays the onomatopoeia of an instrument in Gueum (口音: mnemonics). For example, “Rang” in the explanation on the Geomun-go in the Akhak gwebeom (樂學軌範: Musical Encyclopedia) is a mnemonic syllable for the Geomun-go, while “Dang” is the one for the Gayageum. That is, Yukbo is the notation of mnemonics for musical instruments. However, it is difficult to determine the actual tones recorded in Yukbo in that Gueum varies depending on the instrument and that a single Gueum syllable can

indicate more than two tones. The preface of the *Sejong sillok akbo* (Scores from Annals of King Sejong) reveals that Yukbo had been in use before King Sejong's reign (1418-50):

> In the previous generation, there was no musical notation that recorded the tones, the rhythm, the number of repetitions and tempo of the music; people transmitted the music through Yukbo that imitated sounds. In addition, the scores of Bipa, Piri, Hyeon-geum (Geomun-go), Gayatgo (Gayageum), and Jeok (笛: transverse flute) all differ from each other and therefore are complicated and difficult to learn, while there are no scores for songs. Now that we've produced a full score compiling the scores of wind and string instruments, songs, and percussion instruments as a set, it will be simpler and easier to learn.

Meanwhile, in his book *Seongho Saseol* (Collected works of Seongho), Lee Ik (1681-1763) clarified 'Dongdong' to be the mnemonics of drum sounds in his description of the dance *Dongdong* (動動), one of the Hyang-ak Jeongjae (the native court banquet dance) transmitted since the Goryeo period:

> I am not sure what Dongdong (動動) means. It is probably the sound clowns make today, imitating the drum sound when dancing. It has the same meaning of Dongdong (鼕鼕 : sound of a drum).
> Since Dongdong (鼕鼕) usually means the sound of a drum, it indicates the movements based on the rhythm of 'Dongdong.' There is a score of Dongdong (動動) in the *Akhak gwebeom:* When Dongdongsa (動動詞) was sung according to the Abak (牙拍: ivory clapper), the dancers danced and jumped, moving forward or backward, to the left or right, turning against or facing each other, and tapping on each other's arms or knees. Since Dong (動) and Dong (鼕) are pronounced alike, they have been confused.

Like 'Dongdong,' the lyrics of 'Yali Yali Yalasyeong Yalari Yala' of *Cheongsan byeolgok* (靑山別曲: Song of Green Mountains), one of the popular songs in the Goryeo period, is also considered to be the Gueum of wind instruments such as the Piri and Daegeum. According to the *Sejong sillok akbo* and *Seongho saseol*, Yukbo is considered to be a notation that has been used since the Goryeo Dynasty, but much to our regret, no score of the Goryeo period is found to have its musical notation of Yukbo.

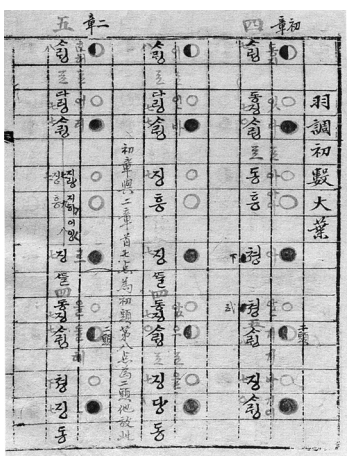
According to their characteristics, different instruments were to be notated differently

using Yukbo; hence, recording for solely one instrument was possible. However, it was impossible for it to record the music of an ensemble. In the preface of the *Aakbo* (Aak scores) in the *Sejong sillok akbo*, this fact is well revealed in the statement that says, "Bipa, Hyeon-geum, Gayageum, Jeotdae (Daegeum), and Piri scores were so complicated and different from each other that it was difficult to understand."

Meanwhile, Yukbo is also found in the *Joseong Geumbo* (Geomun-go score), compiled by Jo Seong (1492-1552). In this score, there are notations for the Geomun-go and Daegeum. The oldest score under the notation system of Yukbo is the *Geum Hapjabo* (Tablature manuscript for the Geomun-go), compiled by An Sang in 1572 (the 5th year of King Seonjo's reign). *Geum hapjabo* follows the format of a full score; musical pieces for the Geomun-go are recorded in three types of notation, namely Hapjabo, Oeumyakbo, and Yukbo, while the scores for the Janggu (double-headed drum) and Buk (barrel drum) are recorded with pictures.

Yukbo was often used in the scores of the late Joseon period. *Samjuk geumbo,* of which the publication year is still datable to the beginning of King Gojong's reign (1863-1907), and *Hyeon-geum Oeum Tongnon* (Explanations of Geomun-go Scores), compiled by Yun Yong-gu in 1886 (the 23rd year of King Gojong's reign), are recorded only in Yukbo notation. This leads us to understand that the Yukbo type of notation was very common from the late 18th to the early 20th centuries and was settled in the early 19th century. The reason why Yukbo was the main musical notation is due to the fact that the men of refined taste focused on the pitches of melodies rather than on the playing techniques or styles of the Geomun-go.

Plate 1. Yukbo in *Samjuk geumbo*



Yuljabo

Another type of notation system used prior to the creation of Jeongganbo is the Type of Letter Notation; Yuljabo and Gongcheokbo are the two types of it. Before the early 12th century, these types were mainly used among the common people for the scores of wind instruments, such as the Daeguem and Piri. Later on, they were widely used among the groups of court music performers as well. Yuljabo in particular was very popular before Jeongganbo came to exist.

Yuljabo is estimated to have been introduced during King Yejong's reign (1105-1122). On his return from a visit to the Chinese Song Dynasty in 1114 (the 9th year of King Yejong's reign), the envoy An Jik-sung brought musical instruments such as the Bipa, Jeok, Janggu, Cheolbanghyang (bronze slab chime), Ohyeon-geum (5-stringed zither), Ssanghyeon-geum (2-stringed zither), Jaeng (zither), Gonghu (harp), Pilyul (double-reed oboe), Ji (transverse flute), So (panpipe), Posaeng (mouth organ), Hun (ocarina), Daego (large drum), and Bakpan (clapper), together with 10 volumes of *Gokbo* (scores of music pieces) and 10 volumes of *Jigyeoldo* (pictogram of fingering), which had been given by the emperor Huizong of the Chinese Song Dynasty. As Aak (court music) scores, the *Gokbo* brought to Korea at this time is very likely to have been written in Yuljabo notation.

There were 12 Yulmyeong (music letters) for the 12 pitches in Korean traditional music: Hwangjong (黃鍾), Daeryeo (大呂), Taeju (太蔟), Hyeopjong (夾鍾), Goseon (姑洗), Jungryeo (仲呂), Yubin (蕤賓), Imjong (林鍾), Ichick (夷則), Namnyeo (南呂), Muyeok (無射), and Eungjong (應鍾). Yuljabo is a letter notation that displays the pitches of the notes in the music with the initial letters of the 12 Yulmyeong: Hwang (黃), Dae (大), Tae (太), Hyeop (夾), Go (姑), Jung (仲), Yu (蕤), Im (林), I (夷), Nam (南), Mu (無), and Eung (應). Used mainly for recording Aak, Yuljabo was used in the *Aakbo* of Johoeak (music for royal audiences) and Jeryeak (music for ancestral ceremonies) in the *Sejong sillok akbo*, and also, it is still used in ritual music such as *Munmyo jeryeak* (Confucian shrine music) to this day. The existing Yuljabo of *Munmyo jeryeak* binds four pitches into a unit. Therefore, breathing comes every four letters, singing with the same length for the first three letters and a longer length for the fourth letter. There is no need to display the length of each note, as this pattern is repeated. Yuljabo, displaying the absolute pitches with 12 Yulmyeong, includes all the names for the 12 pitches in one octave. The letter 'Su (亻)' is added for pitches an octave higher than those in the main octave and are read Cheong hwangjong (潢) and Cheong taeju (汰), while the letter 'In (亻)' is added for pitches an octave lower, to read

Tak hwangjong (黃) and Tak taeju (仗). For pitches two octaves higher, the doubled letter 'Su (氵氵)' is added to the main pitches, to read Jungcheong hwangjong (潢) and Jungcheong taeju (汰), whereas the letter "Cheok"(彳) is added for pitches two octaves lower and are read Baetak hwangjong (徨) and Baetak taeju (彳).

As examined above, the pitches vary according to the type of music and the instruments, even if they were recorded using the same Yulmyeong. For example, the Yulmyeong Hwangjong indicates C for the Dang piri (double-reed oboe of Chinese origin), Pyeonjong (bell chime), and Pyeon-gyeong (stone chime), while it indicates E for the Hyang piri (Korean style double-reed oboe), Geomun-go, Gayatgo, and Daegeum, which results in the sounds' being three degrees higher.

Though it displays the absolute pitches to show the overall melody, Yuljabo cannot display the length of each note or the rhythm. That is, it has the merit of 12 variations of its tonality but also has the deficiency of not being able to display the length of each note.

Gongcheokbo

A kind of the Type of Letter Notation, Gongcheokbo is a notation system that recorded the pitch of the music with the corresponding Chinese characters, instead of the 12 Yulmyeong used in Yuljabo. It is a notation developed in order to simplify the recording process, as the Chinese characters for Yulmyeong in Yuljabo had many strokes and were rather cumbersome to notate. The name Gongcheokbo is derived from Gong (工) which stands for Ichik and Namnyeo, and Cheok (尺) which stands for Imjong among the 12 Yulmyeong.

In the notation of Gongcheokbo, the pitches are recorded with symbolic Chinese characters for the 12 Yulmyeong, with separate symbols for the 4 Cheongseong (four pitches that are one octave higher than the main octave): Cheong hwangjong, Cheong daeryeo, Cheong taeju and Cheong hyeopjong. That is, it displays 16 pitches using 10 letters: Hap (合), Sa (四), Il (一), Sang (上), Gu (句), Cheok (尺), Gong (工), Beom (凡), Yuk (六), and O (五). The exact pitches can be learned only when the mode is known. The 10 letters and the notes they represent are shown in the following Table 1.

Table 1.

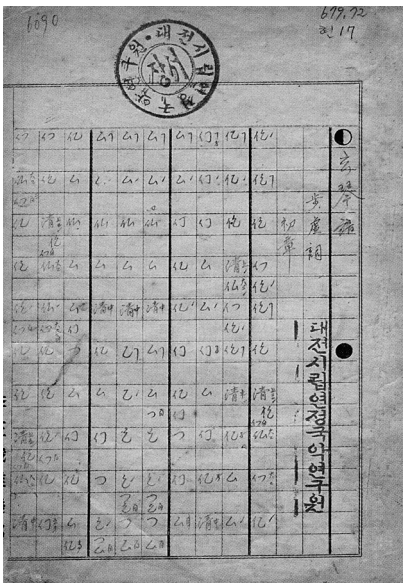
Gongcheokbo	合	四	一	上	勿	尺	工	凡	六	五
Yakjabo	ム	マ	ㄱ	么	レ	イ	フ	リ	ウ	少

Since it reduced the 12 Yulmyeong and 4 Cheongseong and uses only 10 letters, it was sometimes referred to as Sipjabo (十字譜: 10 letter notation). The abridged notation of Gongcheokbo is called Yakjabo, which is made easier to use by reducing the letters from Gongcheokbo. Recently it has been revealed that the Geomun-go and Gayageum scores of *Boheosa* (Walking in the Void) recorded in Yakjabo are kept in the library of the Daejeon Yeonjeong Municipal Research Center for Gugak (the former title for the Daejeon Yeonjeong Municipal Gugak Cultural Center). These scores were written with a steel pen and are presumed to have been recorded in the time of the *Yiwangjik Aakbu* (the former title of National Gugak Center in the Japanese colonial era).

Like Yuljabo, Gongcheokbo has the defiency of not being able to display the lengths of the notes or the rhythm, although it displays the relation of the pitches and the melodies along with the playing style. Using a letter for two or three pitches, Gongcheokbo especially cannot display the pitch of a note clearly. Without knowing the mode, one cannot determine the exact pitches.

The introduction of Gongcheokbo is datable to 1114 (the 9th year of King Yejong's reign), like that of Yuljabo. This is due to the fact that Gongcheokbo was mainly used for recording the Dang-ak (music of Tang Dynasty in China) introduced to Korea. The scores written in Gongcheokbo include the *Daeseong akbo* (Daeseong Music scores) by Lim U, in the *Sejong sillok akbo* and the *Sinje aakbo* (Newly produced Aak scores) in the *Sejo sillok akbo*. Since then it has been used together with Oeumyakbo for the fingering of Dang-ak instruments in the *Akhak gwebeom*.

Plate 2. Yakjabo



Jeongganbo

Jeongganbo is a type of notation that can display the pitches and lengths of the notes. King Sejong had Jeongganbo created in order to overcome the limitations of existing musical notations. Yukbo had the deficiency of not being able to display the rhythm or tempo, recording music only by imitating the sound, while Yuljabo and Gongcheokbo had the deficiency of not being able to display the lengths of notes, the rhythm, the scale, or the tonality clearly. In addition, the most significant reason for the invention of Jeongganbo was that one could not record Hyang-ak (native court music) with the existing notation systems since they had essentially been made for Dang-ak from China. As Korean music had more variations in the lengths of notes than Chinese music, notation that recorded only the pitches was inappropriate. Therefore, King Sejong and many musicians finally produced Jeongganbo, which overcame the deficiencies of Yuljabo and Gongcheokbo. There is no precise record of when it was created. It is only estimated to have been some time before June of 1447 (the 29th year of King Sejong's reign), as all those Hyang-ak scores produced

in this period such as *Jeongdaeeop*, *Botaepyeong*, *Yeominlak*, *Chihwapyeong*, and *Chwipunghyeong* are recorded in Jeonggan (井間: a set of squares in mensural notation).

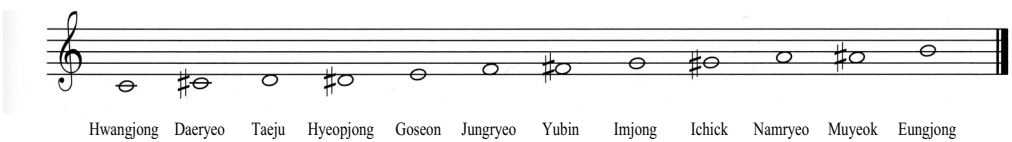
The letters recorded in Jeonggan are written in the shape of the letter Jeong (井, "well"), divided by 32 squares per column, added with the first letter of 12 Yulmyeong. They display not only the pitches of the notes but also the time value of each note by the number of squares. This kind of notation is called Jeongganbo or Jeonggan Type of Letter Notation.

Jeonggan Type of Letter Notation includes Jeongganbo, which records the 12 Yulmyeong in 32 Jeonggan per column, and Oeumyakbo, which records music in symbols such as Sang 1 (上一), Sang 2 (上二), Sang 3 (上三), Sang 4 (上四), and Sang 5 (上五), for the higher pitches, Gung (宮) for the tonal center, and Ha 1 (下一), Ha 2 (下二), Ha 3 (下三), Ha 4 (下四), and Ha 5 (下五), for the lower pitches. Hapjabo has two types: Hapjabo recorded in Jeonggan type and Hapjabo recorded with the playing style only. Jeonggan Type of Letter Notation is a phonotype notation, while Hapjabo is a tablature of playing styles for the musical instruments.

In Jeongganbo, the pitches are displayed by the letters of the 12 Yulmyeong, and the length of each note is displayed by the number of Jeonggan. In other words, the pitches are recorded using the first letters of each of the 12 Yulmyeong; Hwang (C in Dang-ak, E ♭ in Hyang-ak), Dae (C ♯, E), Tae (D, F), Hyeop (D ♯, G ♭), Go (E, G), Jung (F, A ♭), Yu (F ♯, A), Im (G, B ♭), I (G ♯, B), Nam (A, C′), Mu (A ♯, D ♭′), and Eung (B, D′), while the time value is displayed as one beat per Jeonggan. This Jeongganbo is a kind of phonotype notation that displays the time value, and it is also called mensural notation, like Western staff notation. The excellence of Jeongganbo lies in the fact that the pitches are always clear and absolute as they are named in fixed Do by the 12 Yulmyeong, and music pieces in other tonalities can also be recorded freely in the score as it has the 12 temperaments in an octave, which is similar to the staff notation of modern music.

Compared to the notes used in staff notation, the 12 Yulmyeong recorded within an octave in Jeongganbo are as follows:

Plate 3. 12 Yulmyeong

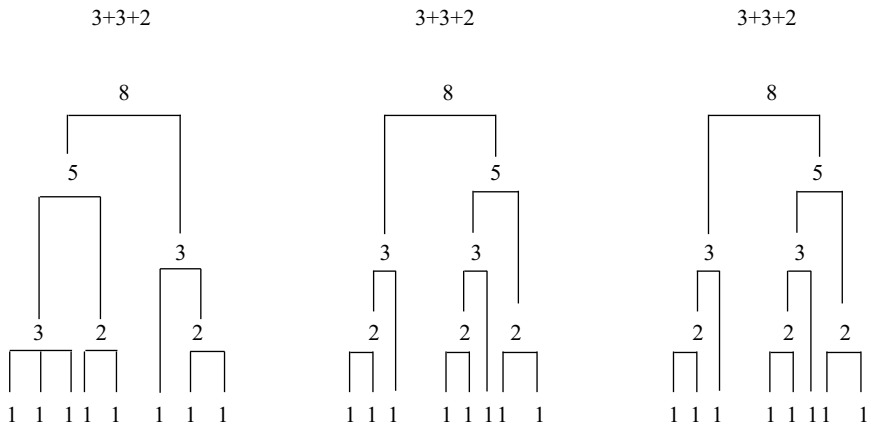


As explained above, by creating Jeonggan to display precise time values in an effort to overcome the deficiencies of the existing Type of Letter Notation, Jeongganbo advanced the recording of music a step further. It was a very fresh and revolutionary notation that overcame the fundamental deficiencies of the Type of Letter Notation and Gueum yukbo, which could record neither the basic element of music, time value, nor the music of ensembles with different instruments.

Though the most distinctive feature of Jeongganbo is that it is the oldest mensural notation in the East, what is even more significant about it is that Korea created the first full ensemble score, while such a score had not yet been produced in the West. That is, Jeongganbo was used not only to record the melodies of an individual instrument or music piece, but also to record the music of several instruments and the vocal part as a full score. The music pieces recorded in the Jeonggan Type of Letter Notation in the *Sejong sillok akbo* are in full scores of five or six column. For example, the first column is for string instruments and percussion instruments with melodies, the second column is for wind instruments, the third column is for the Janggu, the fourth column is for the Bak (wooden clapper), and the fifth column is for the lyrics of the songs. The fact that the first full score of multiple columns was created in Korea in the early 15th century is the reason why Jeongganbo is considered to play a particularly significant role out of all the inherited scores from the East Asian countries.

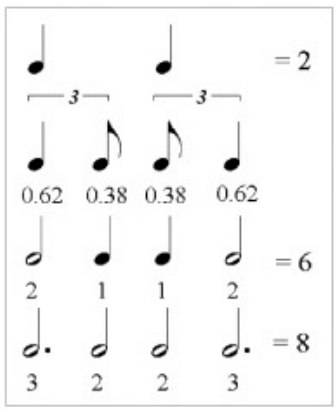
Jeongganbo was a brand new notation that broke through the fundamental deficiencies of existing Type of Letter Notation or Gueum yukbo, which couldn not record the time values of notes or the music of ensembles with different instruments. The ratios of 3・2・3, 2・3・3, and 3・3・2 appeared in Jeongganbo, a notation produced by a government office among the ancient musical notations, are not only related to the idea of Samcheon yangji (參天兩地: 3 for Yang, 2 for Yin) from the art of divination of the East, but is also related to the Fibonacci Series: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89…… In other words, Jeongganbo made up of 16 Jeonggan and 6 Daegang (大綱: sentence) which appears in the *Sejo sillok akbo*, *Daeak hubo* (Scores of Great Music-Later Edition), and *Siyong hyang-akbo* (Contemporary Music Scores), is composed of rhythms associated with Fibonacci Series, as shown in the Plate 4.

Plate 4. rhythms with Fibonacci Series



As displayed above, 16 Jeonggan in 6 Daegang is in two sets of 8 Jeonggan in 3 Daegang. For example, Eotmori, one kind of rhythmic cycle in Korean music, is usually made up of 5+5 beats, that is, in 10 beats per rhythmic pattern; when recorded in Jeongganbo, it is made up of (3 Jeonggan+2 Jeonggan) × 2. It is noticeable that the 8 beats of 3 Daegang is an application of the Fibonacci Series 0, 1, 1, 2, 3, 5, 8, which makes it easy to expand and reduce the rhythm as shown in the Plate 5.

Plate 5. Eotmori rhythm



It was noted by Gye Jeongsik in the 1930s that this distinctive rhythm of Korean traditional music was once considered to be similar to Lombardic rhythm that is found in Lombard of Italy and also similar to the distinctive rhythm of the Scotch snap of Scotland and Ireland. It is found in Pungmul (farmers' band music) rhythm of Korea as well.

Oeumyakbo

One of the mensural notations revised from Jeongganbo in King Sejo's reign, Oeumyakbo is also called Gungsang hailijibo. It was produced by musicians including Hwang Hyo-seong. The production of Oeumyakbo is datable to early 1464 (the 10th year of King Sejo), according to a historical record that says, "In January, the king had the music master Hwang Hyo-seong draw the scores and play music and after listening, he had him add one more verse of Ha 4 to practice and play."

Above all, Oeumyakbo can distinguish the rhythmic meter from the rhythms of the notes by designating 6 Daegang containing a total of 16 Jeonggan. Unlike Jeongganbo formed of 32 Jeonggan per column without grouping them into Daegang, Oeumyakbo is made up of 16 Jeonggan per column which are grouped into 6 Daegang (each containing 2 or 3 Jeonggan in the following pattern: 3 · 2 · 3, 3 · 2 · 3) to differentiate the meter from the note rhythms according to the lengths of the Daegang. This solved the problem of Jeongganbo of 32 Jeonggan per column, which could not differentiate between the meter and the rhythm, and is considered one step in the advancement of musical notation.

Oeumyakbo was created to notate Hyang-ak in a pentatonic scale. It recorded the music according to the principle of movable Do in a pentatonic scale. In contrast to Jeongganbo, which displays the absolute pitches following the principle of fixed Do with the 12 Yulmyeong, Oeumyakbo displays the pitches with the five notes, Gung (宮), Sang (商), Gak (角), Chi (徵), and U (羽), to indicate the relative pitches. In Oeumyakbo, the pitches are displayed with symbols that correspond to the five notes of Gung, Sang, Gak, Chi, and U: the pitches higher than the standard pitch Gung are recorded as Sang 1, Sang 2, Sang 3, Sang 4, and Sang 5, while the pitches lower than Gung are recorded as Ha 1, Ha 2, Ha 3, Ha 4, and Ha 5. This makes it easy to distinguish the higher pitches from the lower pitches. Therefore, the five notes in Oeumyakbo are also used in other scales and the tonal center Gung varies depending on the scale; this means that the pitches of the five notes vary according to the scale to make one sing any piece of music easily and freely. Due to this

merit, Oeumyakbo was widely used as a basic notation of Korea in the Middle Age since its creation in the mid-15th century.

Meanwhile, in his work *Gukjo akga* (a book of various Korean traditional music), Hong Gyeong-mo wrote that the pitches of Oeumyakbo could display three different tempos called Man (slow), Jung (moderate), and Sak (fast), with pitches from Sang 1 to Sang 5 for Sak, the pitches from Ha 1 to Ha 5 for Man, and Gung for Jung. This should be discussed in the future.

Oeumyakbo had the deficiency that it could not display the pitches between notes or the pitch of Gung. This problem was solved by marking Gung as Hwangjong-gung or Hyeopjong-gung. Just as modern notation displays the modes in the beginning, Oeumyakbo also displays the pitch of Gung and its mode in the first part of the score. This is to reveal the relation between the notes.

There are two modes called Pyeongjo (a pentatonic sol mode) and Gyemyeonjo (a pentatonic la mode) in Oeumyakbo. As it records music by the principle of Sanghailiji using Chi (sol) for the tonal center, Pyeongjo is also called Chijo, while Gyemyeonjo is called Ujo as it records music by the same principle using U (la) for the tonal center.

The modes Pyeongjo (Sol, La, do, re, mi, sol, la, do′, re′, mi′, sol′) and Gyemyeonjo (La, do, re, mi, sol, la, do′, re′, mi′, sol′, la′), if written in staff notation, are as follows:

Plate 6. Pyeongjo (pentatonic sol mode)

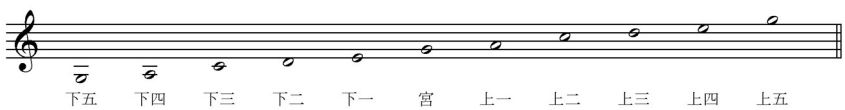
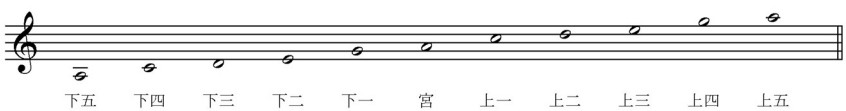


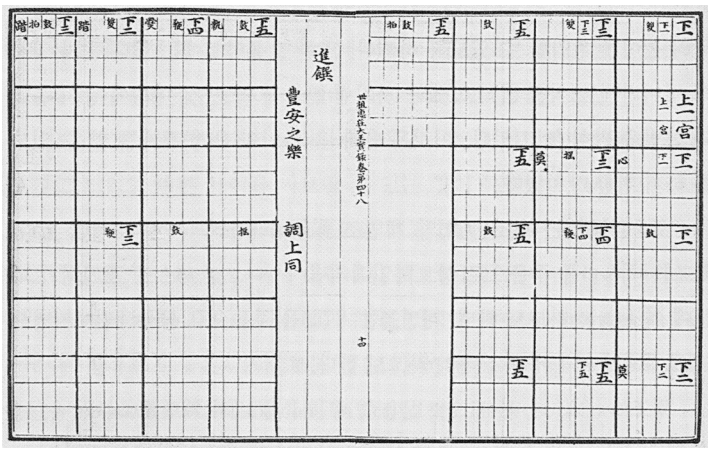
Plate 7. Gyemyeonjo (pentatonic la mode)



Since it was produced to notate Hyang-ak in a pentatonic scale, Oeumyakbo could not be applied to Dang-ak music or Aak in a heptatonic scale. To notate Dang-ak music or Aak

in a pentatonic scale, either Gongcheokbo or Yuljabo was used together with Oeumyakbo. Oeumyakbo and Gongcheokbo were used together in *Pung-anjiak* (Music of Ritual Peace) in the *Sejo sillok akbo*, and Oeumyakbo and Yuljabo were used together in *Boheoja* in the *Daeak hubo*.

Plate 8. Oeumyakbo in *Sejo sillok akbo*



Hapjabo

Notating music on the basis of the playing style, Hapjabo notates with symbols combined with simplified letters indicating Anbeop or Jibeop (按法 or 指法: fingering instruction of the left hand), Hyeonbeop (絃法: string instruction), and Tanbeop (彈法: fingering instruction of the right hand). In other words, Hapjabo is a tablatuare system that uses simplified letters combined with symbols indicating the order of frets of the Geomungo, the fingering instructions for the left hand, and the string instructions and playing style for the fingers of the right hand.

Hapjabo was created and systemized by musicologists and master players including Seong Hyeon, Park Gon, and Kim Bok-geun during King Seongjong's reign (1469-94). Produced upon the order of King Seongjong, it first appeared in the scores of the Geomungo, Gayageum, Hyang bipa, and Dang bipa in the *Akhak gwebeom*.

As playing techniques were developing, musicians improved the form of Hapjabo more advanced with the addition of specific simplified letters. In the 16th century, Hapjabo became even more advanced as the indoor instrumental music that was played by various instruments including the Geomun-go and Gayageum became more advanced, as did the playing styles of the individual instruments.

The earliest score in Hapjabo existing today is the *Geum hapjabo*. Although it was mainly used for the Geomun-go, three types of notation were used in the *Geum hapjabo*: Hapjabo, Oeumyakbo, and Yukbo. Though Hapjabo was usually used together with Yukbo, only Yukbo was left over time, with rare appearances of Hapjabo to indicate the order of strings and frets, according to the *Samjuk geumbo* published at the end of the 19th century. Hapjabo played a positive role in musical notation by ensuring accuracy in the playing of each instrument, helping the players to advance their playing techniques. It contributed to the transmission of the musical pieces and also to the understanding of the playing style of each instrument. In the preface of the *Geum hapjabo*, it says, "If one who lives in an isolated area and wishes to learn to play the Hyeon-geum but cannot find a master, they are to get this *Geumbo* (a score of the Geomun-go), and he or she would have no difficulty learning by himself or herself, since it is as if a master is sitting right there to instruct," which demonstrates its excellence. Therefore, this Hapjabo was particularly beloved by the Geomun-go lovers from the literati class, and many scores of Hapjabo made by men of refined taste were widely spread.

Plate 9. Hapjabo in *Geum hapjabo*

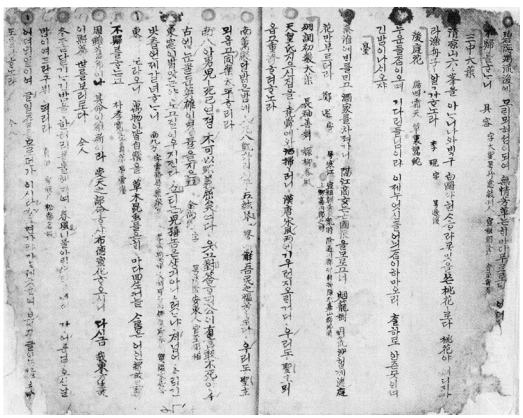
Yeoneumpyo

As a phonetic notation, Yeoneumpyo is a type of notation that displays the intonation of songs with symbols over the text, which is similar to Neuma used in Gregorian chant in Europe.

It was used in the *Gagok wollyu* (Sourcebook of Songs), the *Hyeomyul daeseong* (a collection of ancient songs), and the *Yeochang Gagongno*k (Collection of Songs by Female Singers) but it is not used today. This notation recorded the pitches and rhythms of the songs and connected melodies to help singers memorize songs more easily, by using a kind of symbols.

Yeoneumpyo appears in the *Gagok wollyu*. To understand Yeoneumpyo, it is helpful to refer to a phonetic transcription used by the master singer Ha Gyu-il when he was teaching Gagok in Yiwangjik Aakbu, inheriting the tradition of the *Gagok wollyu* compiled by Park Hyo-gwan and An Min-yeong. He sang songs by marking Yeoneumpyo next to the song text.

Plate 10. Yeoneumpyo in *Gagok wollyu*



During the 15th and 16th centuries, Korean music theory was systematized and a new type of notation was produced that had great significance in the development of Medieval Korean music.

In the early to mid-15th century, music theoreticians including Park Yeon and Hwang Hyo-seong created Jeonggan Type of Letter Notation, which could record the pitches and the rhythms of music pieces, and musicians including Seong Hyeon created Hapjabo that recorded the playing style of each instrument at the end of the century.

Jeongganbo and Oeumyakbo are both in the category of Jeonggan Type of Letter Notation. The former notated the 12 Yulmyeong in 32 Jeonggan per column and the latter recorded simplified letters for 5 notes in 16 Jeonggan per column. Hapjabo comes in two types: Hapjabo recorded in Jeonggan and Hapjabo recording only the playing styles of the musical instruments. Jeonggan Type of Letter Notation is a phonetic notation, while Hapjabo is a tablature which indicates playing style.

The creation of these new types of notation not only meant the development of Medieval Korean musical notation but also contributed to the advancement of the Oriental musical notation. This period was with much accomplishment in the area of instrumental music and music theory; not only was a new type of notation created, many scores were produced based on it. Moreover, *Akhak gwebeom* was published which was a series of music theory that compiled all the Medieval music.

Translated by Cindy O Shin