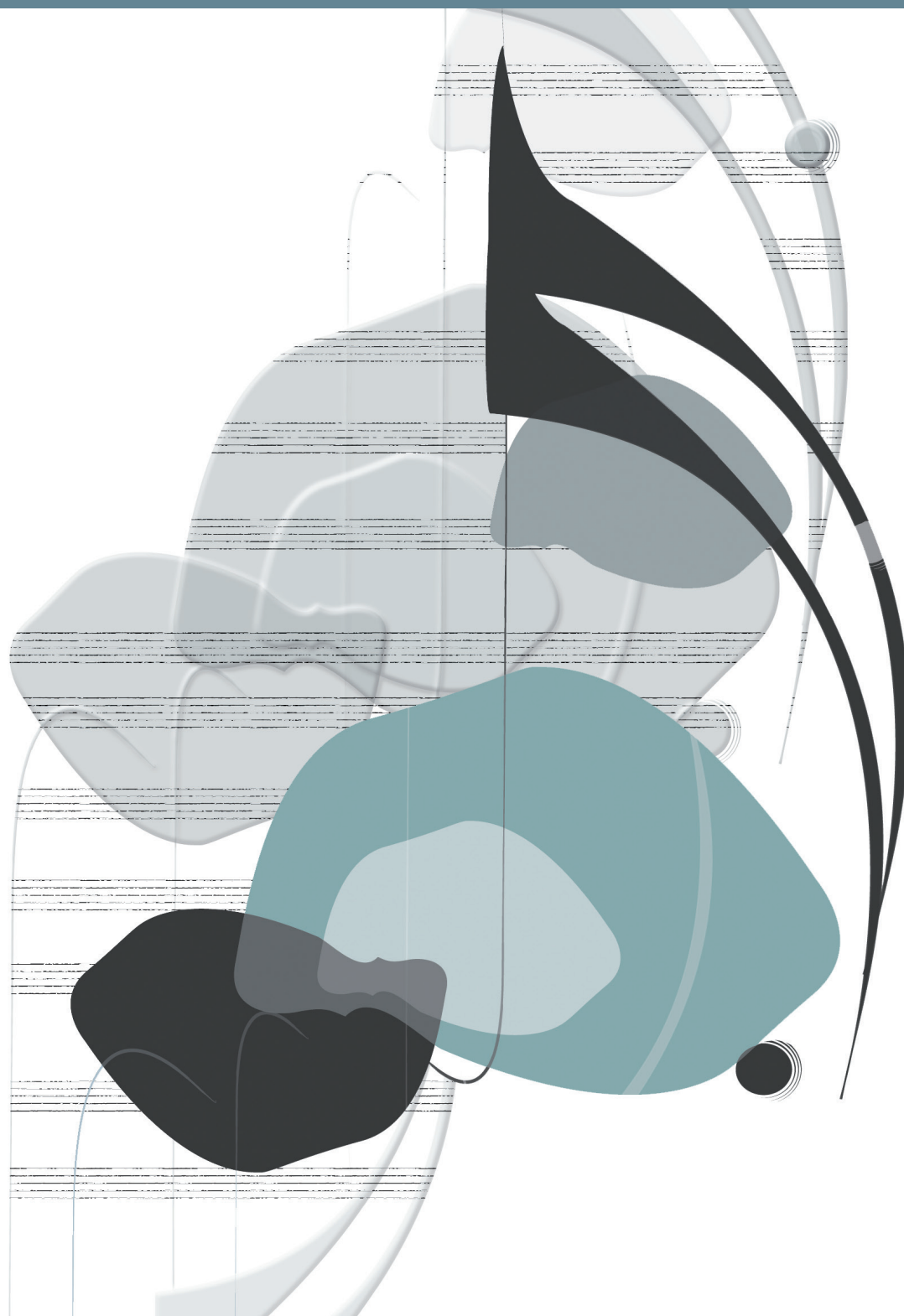


music notation

Jean-Michel Tostivint

Fundamental and specific musical signs



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Foreword

This book is about music notation, i.e. the study of the various signs used for the notation of music. Music *notation* must be distinguished from music *theory*, which describes and analyzes musical structures in their various melodic, rhythmic, etc. dimensions, although it uses music notation signs for this purpose.

For reasons of practicality, readability and ease of performance, musical notation has a more *prescriptive* than *descriptive* function: it indicates what is to be played, how it is to be played, the order and temporal position of what is to be played. Although it gives a lot of information about musical structures, notation is far from giving a complete account of them and sometimes even hide them (see the chapter on note beaming). The notation presents itself rather as a simple skeleton, the broad outlines of a musical form to which the execution will give body.

By making an analogy with writing, the study of notation presented here will be limited to the level of “musical spelling” without addressing the level of its typography. The purpose is modest: to ensure the recognition/understanding of the main musical signs, and to allow the eventual manual notation/writing of scores. It is the required level but sufficient for a standard practice of music.

The level of “musical typography”, much finer, aims at increasing the readability of the musical text, and thus the ease of its execution, while respecting the standards of notation of the various musical periods and contexts. The musical signs are then precisely adjusted according to precise and sometimes rather complex rules: size of the staves, horizontal spacing between the various signs, direction of the slope and declivity of the rhythmic beams, horizontal position of the accidentals in a chord, curvature and vertical/horizontal position of the ends of slurs, etc.

Here we will simply divide the musical signs into two groups, those expressing more or less directly the pitches dimension (melody), and those representing the duration dimension (rhythm), i.e. the two main dimensions of musical events. A third part will deal with specific notations, linked to the current practice in Rock/Jazz, of the harmonic themes interpretation and improvisation on these same themes, and linked to the instruments that will be covered in the methods proposed here: Guitar, Bass and Drums. The notation of these instruments requires a certain number of custom-made signs, or standard and diverted from their usual meaning to fit the context of the instrument.

As far as possible, the musical signs will be presented in a logical, progressive order, from the essential and unavoidable signs to the rarer and more complex signs, but based on the first ones. Some chapters are more difficult and concern only complex and rare musical contexts (see the notation of irrational rhythms), whose notation deserved to be clarified. The two sections: melody notation and rhythm notation, present examples of notation that necessarily combine the dimensions of pitch and duration. Move from one section to the other as necessary to elucidate misunderstood signs.

J.-M. Tostivint

Melody notation

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The notation of the melody concerns the pitch dimension of the sound events, consisting of note signs (emission of a sound) and rest signs (stop of the sound). These various signs are arranged in a notation space allowing the graduation of the different relative pitches of the notes between them on a vertical axis. The absolute (real) pitches are then defined by the clef sign. The pitch is the main characteristic of the notes allowing to compare and organize them according to the value of these different pitches, thus creating structures or melodic lines (i.e. sequences of pitch intervals).

These melodic lines are never mechanically executed, but rather interpreted in highly variable phrasing, ranging from a linked phrasing (notes fused together) to a staccato phrasing (notes detached from each other), by playing on the duration of the notes without changing their temporal interval.

To the phrasing of a melodic line can be added the ornamentation of the notes by adding "decorative" notes and/or playing effects, of which we will present here only the fundamental effects, which can be applied to (almost) all instruments. These playing effects, strongly depending on the type of instrument, often have specific notations (see the last section). Finally, the dynamics, i.e. the variation of the sound intensity along the melodic line, complete the possibilities of interpretation. We group together

all these interpretations under the name of expressions, whose notation comprises many signs. Instruments are sound-emitting devices. The range or spectrum of pitches that they are capable of covering, is a function of their own physical characteristics and the dexterity of the player. The position of this portion of pitches, in a more or less low register, determine the choice of the clef, in order to place the notes as much as possible in the staff, limiting the use of ledger lines, and thus facilitating the reading.

1 Notation space

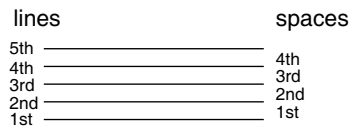
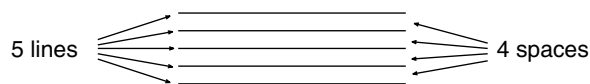
As in the (western) written language, the musical notation is temporally organized and is read horizontally from left to right. But contrary to it, the musical signs are also vertically organized, on the axis of simultaneity. It is in this general space that all the musical signs and symbols will be arranged, in relations of succession and simultaneity.

A - Staves

Music is written by means of graphic signs located on a set of 5 parallel lines, called staff.

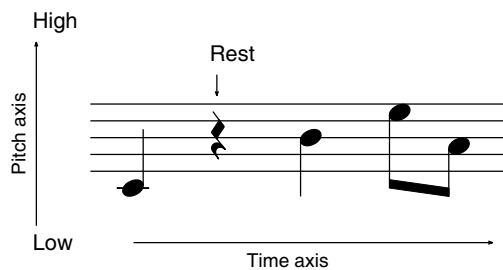
Fig. 1 Staff

These lines and spaces are numbered from the bottom



The staff is thus the space of signs notation representing sounds (called notes) or lack of sounds (called rests). These sounds have two dimensions: a melodic dimension, i.e. their pitch and a rhythmic dimension, i.e. their duration.

Fig. 2 Notation space



B - Notes

A note is a more or less complex sign that defines its pitch and duration. It consists of two parts:

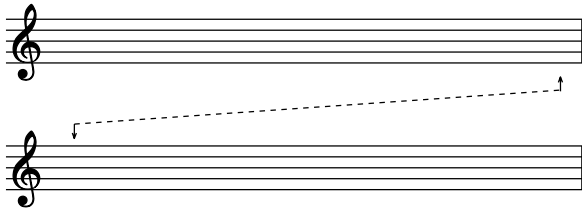
- ▶ a notehead (black or hollowed-out oval),
- ▶ possibly a stem and/or one or several flags¹ (♩, ♪, ♫)

1. Note duration signs, p. 39

Other notehead shapes can be used (cross, diamond, triangle, or others), usually when the pitch is imprecise or indeterminate (percussion, spoken voice, noises, etc.). Pitch is defined by the position of the note on the staff, regardless of its shape, from bass at the bottom to treble at the top.

The duration of the notes is defined by a variable set of signs (which can even link them together), but their chronology is defined by their horizontal position: the signs are read (and played) from left to right. A given note will therefore be later than its left-hand neighbor and earlier than its right-hand neighbor. As in written language, at the end of a line or staff, one moves to the beginning of the next one, towards the bottom.

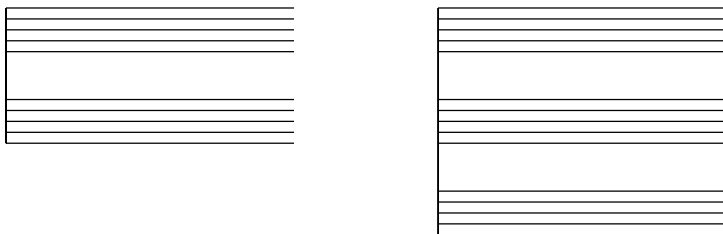
Fig. 3 Staves reading order



C - System

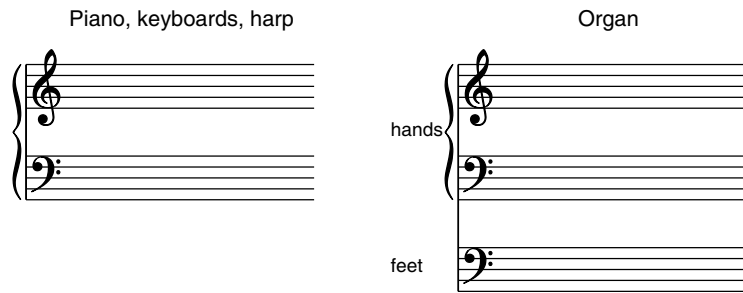
When several staves are to be executed simultaneously, they are connected at their left end by a vertical bar. The group of staves is then called a system, which is read as a single staff: at the end of the system, you move to the beginning of the next one.

Fig. 4 Systems



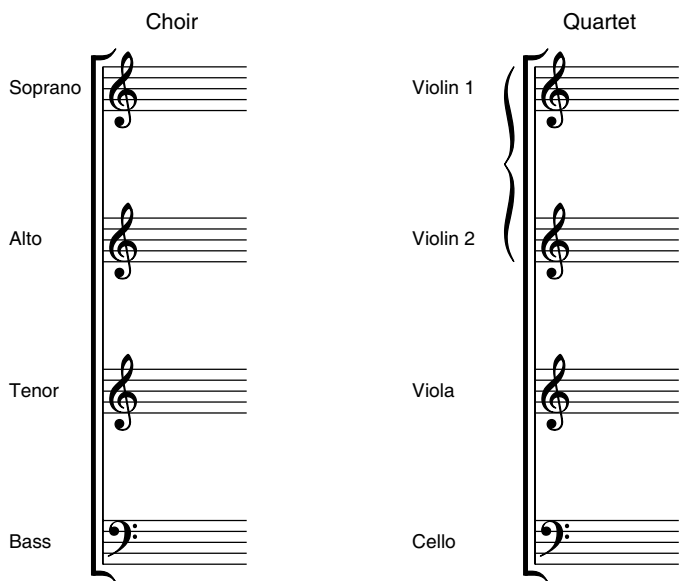
A brace is added to a system whose staves are the different voices of the same instrument. It is used in particular for piano, keyboard, organ, harp.

Fig. 5 Systems for keyboard



A hook is also added to the system, to visually group different instruments but of the same family, thus distinguishing them from those of other families (string, reed instruments, brass, woodwind, percussion, voice).

Fig. 6 Systems for voice and violin families



It is also possible to combine the systems for keyboard and instrument families, especially in orchestral scores or large ensembles with different instrument families.

Fig. 7 Systems for orchestra

The figure illustrates three different musical systems for orchestra, each showing a combination of vocal and piano parts.

- Piano-Voice:** This system consists of a single voice staff (treble clef) and a piano grand staff (treble and bass clefs). A brace on the left groups the piano staves together, and the label "Piano" is placed to the left of the grand staff.
- Piano-Reduced choir:** This system features four vocal staves (Soprano, Alto, Tenor, Bass) and a piano grand staff. The vocal staves are grouped by a brace on the left, with "Soprano" labeled above the top staff. The piano grand staff is also grouped by a brace on the left, with "Piano" labeled to its left.
- Piano-Choir:** This system includes four vocal staves (Soprano, Alto, Tenor, Bass) and a piano grand staff. The vocal staves are grouped by a brace on the left, with "Soprano" labeled above the top staff. The piano grand staff is grouped by a brace on the left, with "Piano" labeled to its left.

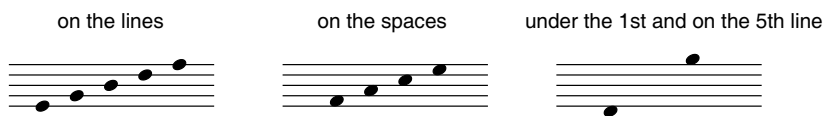
2 Pitch notation

Of the four dimensions of sound, pitch, duration, timbre and intensity, the pitch dimension defines the melodic space. The pitch axis mainly takes a discontinuous form, i.e. that of a scale of discrete defined pitches. One goes from one pitch to another by jumps of varying sizes. The scales used in all kinds of music are numerous and varied and the precise notation of their degrees is essential.

A - Vertical position

The pitch of a tone is defined by the vertical position of the notehead on the staff: on the lines, in the spaces, under the 1st line or on the 5th line.

Fig. 8 Vertical position of notes



The staff has only eleven graduations on the pitch scale (5 lines + 6 spaces). Additional lines (called ledger lines) are added to precisely define the position of notes outside this scale. These additional lines are in all respects similar to the staff lines, except that their length is slightly greater than the width of the notehead.

Fig. 9 Ledger lines



However, these different vertical positions only define the relative pitch of the notes: lower or higher than... Another sign, the clef², will be necessary to define the pitches in an absolute way.

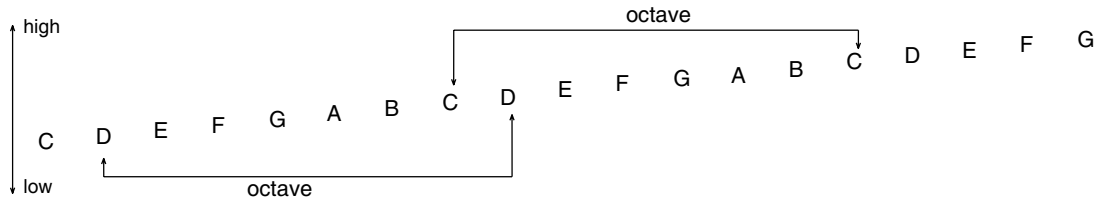
2. See the different types of clefs, p. 13

B - Note names

Only seven note names are used to name the different pitches. These names form an ordered series, from low to high: A B C D E F and G.

This series can be extended by a 2nd series, 3rd series, etc., forming a cycle. The interval in pitch between two notes of the same name is called an *octave*.

Fig. 10 Note names and octaves



The pitch scale is thus presented as a stack of octaves, frames within which the series of notes unfolds. An register, expressed by a number, is then necessary to determine to which octave a note belongs. The change of register always occurs on the C, but several different conventions exist according to the countries. The pitch of a sound, a wave phenomenon from a physical point of view, is defined by a frequency (Hz), i.e. the number of periodic oscillations per second. The frequency of a note doubles at each higher octave and is halved at each lower octave.

Fig. 11 Octave register in English and French

The ratio between the frequency of a sound and the name of the notes has been fixed arbitrarily on the basis of the following equality: A4 = 440 Hz. To switch from the English convention to the French one, you just have to subtract 1 to the octave register. (We will obviously use the English convention here).

Frequency	33	65	131	262	523	1046	2093
French	do0	do 1	do2	do3	do4	do5	do6
English	C1	C2	C3	C4	C5	C6	C7

It is necessary to distinguish between sound and note: the sound is an absolute pitch, of a defined frequency, belonging to a defined octave register. The note is a pitch, apart from its octave register. The harmonic theory, indifferent to the octave register, uses rather the notion of note. C, for example, represents all the possible C notes (C1, C2, C3, etc.)

The series of note names beginning with A in the Anglo-Saxon tradition, this one uses the corresponding series of the first letters of the alphabet as note names.

Fig. 12 Correspondence between Latin and Anglo-Saxon names

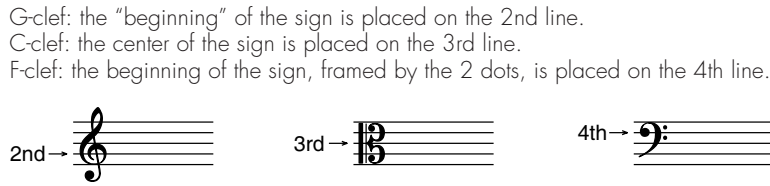
In the French Jazz and Rock tradition, Latin names are used for the names of notes and Anglo-Saxon names for the names of chords and keys (i.e. the root and tonic).

La	Si	Do	Ré	Mi	Fa	Sol
A	B	C	D	E	F	G

C - Clefs

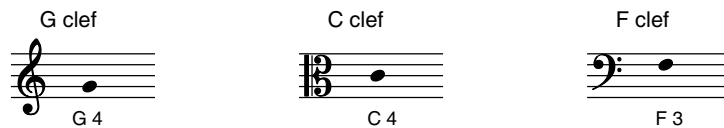
The clef is a sign placed at the beginning of a staff, allowing to determine the name of the notes, as well as their octave pitch. Three types of clefs are mainly used: the G-clef (or treble clef), the F-clef (or bass clef) and the C-clef (or alto clef).

Fig. 13 Clefs positions



The clefs give their name to the note located on the line where they are placed. The octave pitch of these notes depends on the clefs.

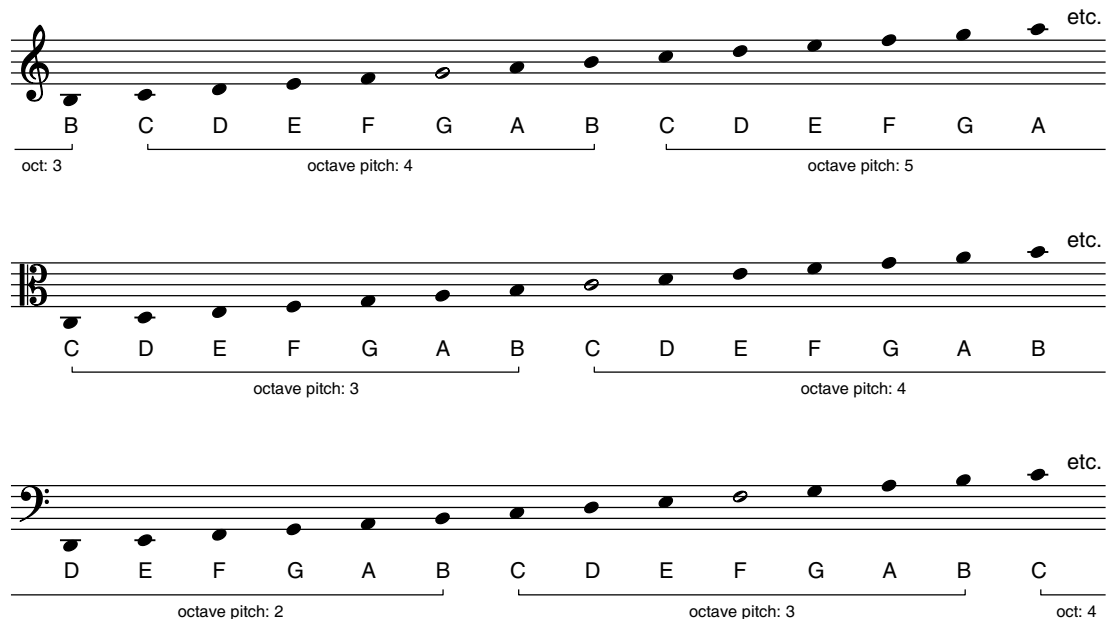
Fig. 14 The 3 types of clefs



The names of the notes follow each other in a fixed order, so you can find the names of all the other notes.

Fig. 15 Clefs and note names

In the G-clef, the notes located on the staff have an octave register of 4 or 5, in the C-clef, a register of 3 or 4, and in the F-clef, of 2 or 3.



These 3 clefs divide the pitch scale into 3 registers³: the treble register (G-clef), the middle register (C-clef), the bass register (F-clef). The choice of the optimal clef, according to the average octave height of the notes used, allows to limit the use of ledger lines.

3. The registers of the sound spectrum, p. 33

Fig. 16 Clefs and octave register

Octave register

Octave register	Range
5	Treble
4	Middle
3	Bass
2	

Fig. 17 Relationship between G and F clefs

Of the three clefs, G-clef and F-clef are by far the most used. A single staff line separates the G-clef and the F-clef (the C4 staff line). In the G-clef, all notes lower than C4 (inclusive) will require ledger lines; as well as all notes higher than C4 (included) in the F-clef.

oct: 2 oct: 3 oct: 4 oct: 5

Two other types of clef are also used:

Fig. 18 Tenor clefs

The tenor clef is frequently used in choral scores for tenor voices. Its register is located one octave below the G-clef. This clef is also used in classical guitar.

Fig. 19 Percussion clef

The percussion clef is used for various instruments producing sounds whose pitch is not defined. The vertical position of the notes rather indicates the various elements of the instrument. But the notation of these elements is very variable, depending on the instrument, the countries, the authors. Faced with this lack of standardization, a preliminary nomenclature is necessary.

Ex: Drums

bass drum floor tom snare drum alto tom

In this percussive context, the staves are often reduced to the strictly necessary number of lines, equal to the number of elements used; the readability of the score is then improved.

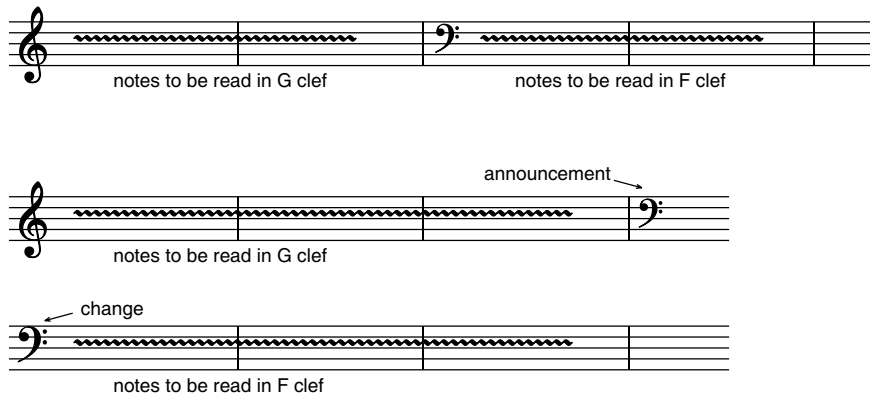
Alto tom
Medium tom
Bass tom

snare drum

A permanent change in the octave register of the notes may require a change of clef during the piece. The new clef is then placed immediately before the notes concerned (the sign is slightly smaller than the one placed at the beginning of the line).

Fig. 20 Clef change

A clef change taking effect on the next line should be indicated at the end of the staff by the new clef, as an announcement of this change.

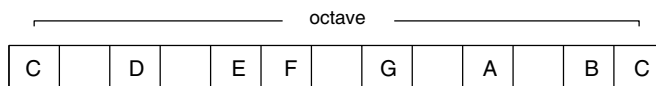


D - The accidentals

The octave, in the western tradition called equal temperament, is divided into 12 equal parts called semitones (or half step). The notes seen above cover only 7 degrees out of 12, distributed as follows:

Fig. 21 The 12 degrees of the octave

Each cell represents a semitone. Only the notes E and F, B and C are separated by a semitone.



This distribution, forming a characteristic interval structure, is none other than the major scale (starting here with C, i.e. C major scale). The remaining 5 degrees will be obtained by altering the notes of the scale, i.e. by increasing or decreasing them by one semitone. An accidental is a sign that changes the pitch of a note, either by raising or lowering it. There are 5 possible accidentals:

- ▶ the sharp (#) : raises the pitch of a note by one semitone,
- ▶ the double sharp (x) : raises a note by two semitones, or one tone (or whole step),
- ▶ the flat (b) : lowers a note by one semitone,
- ▶ the double flat (bb) : lowers a note by two semitones, or by one tone,
- ▶ the natural (n) : cancels the previous accidentals, restoring the original pitch of the note. It thus lowers a sharp or double sharp note and raises a flat or double flat note.

Fig. 22 The 5 accidentals

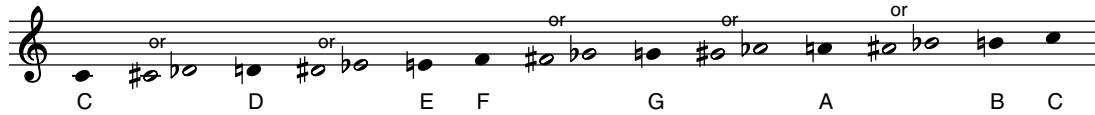
The accidental always precedes the note it affects and is placed on the same line or space. The double flat and even more the double sharp, is quite unusual. The enharmonic writing⁴ is often preferred, favoring readability over musical meaning.

4. Enharmonic notes, p. 16



Two notes with the same pitch but with two different names (e.g. C \sharp and D \flat) are said to be enharmonic. The choice of one or the other name depends on the musical context, as the two names have different meanings.

Fig. 23 The notation of the 12 degrees of the octave



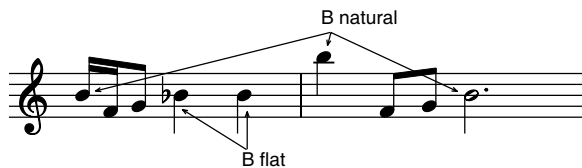
In the context of a melodic line, the flat is used for descending lines, the sharp for ascending lines.

Fig. 24 Accidentals in a melodic line



The accidental affects all the following notes of the same name, at the same octave pitch and within the same measure. The scope of its effect is therefore limited, unlike the accidentals in a key signature.

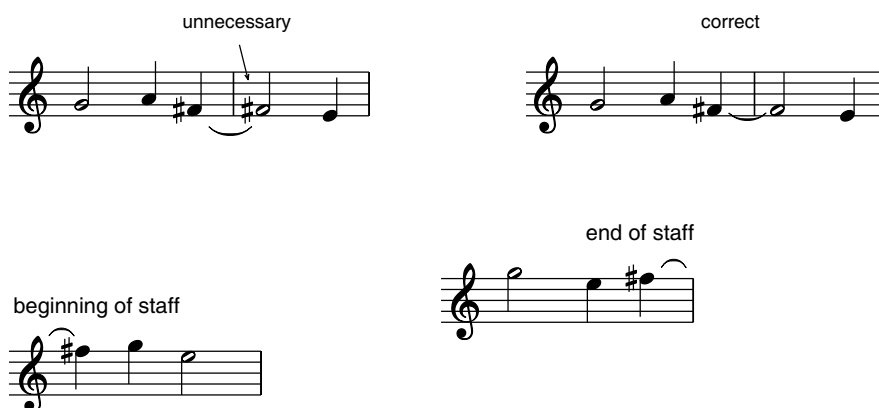
Fig. 25 Scope of accidentals



The accidental is obviously always effective for a note linked to a previous altered note in the preceding measure, since it simply extends the sound. It is therefore unnecessary to recall the accidental.

Fig. 26 Accidental of a tied note

But, as a precaution, the accidental is recalled when the tied note is at the beginning of the next staff.



An accidental, not strictly necessary, can be placed before a note as a precautionary reminder. The accidental is then placed in parentheses.

Fig. 27 Precautionary reminder

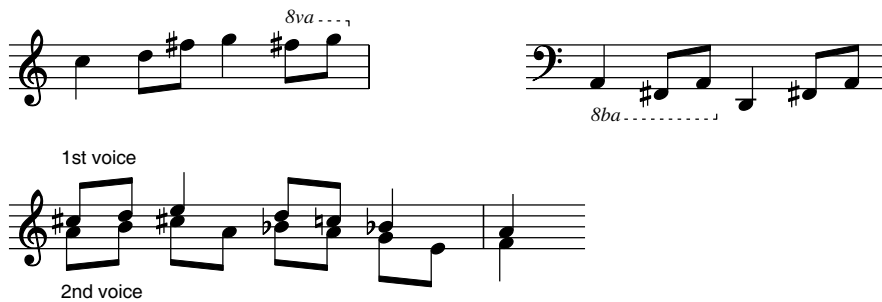


It is sometimes necessary to repeat an accidental in the same measure:

- ▶ when using the 8va or 8ba⁵ signs, when the notes in the upper or lower octave are also altered,
- ▶ when two independent voices are notated on the same staff, with accidentals affecting only the notes of one voice.

5. Upper or lower octave signs, p. 20

Fig. 28 Accidental repetition



E - Key signatures

Scales whose key is other than C major or A minor, contain altered notes as melodic material. Pieces written in these keys will therefore permanently use (except for local exceptions) these altered notes.

To avoid overloading the writing by indicating the accidental in front of each of these notes, we place at the beginning of each staff a sign, called a key signature, made up of all the necessary accidentals. These accidentals are placed on the line or space of the note they alter, but unlike accidentals, they are valid for all octave register and for all measures of the piece. Their effect is therefore permanent unless explicitly stated otherwise.

Fig. 29 Sharp and flat key signatures

Sharps order: F C G D A E B



Flats order: B E A D G C F



A piece may include one (or more) key changes. This will be indicated by a new key signature preceded by all the accidentals that cancel the previous key signature. A double barline precedes the naturals.

Fig. 30 Key signature change

If the key change takes effect at the beginning of the next staff, the new key signature is announced at the end of the staff.

The current practice is to no longer indicate naturals, as the double barline implicitly cancels the accidentals of the previous key signature.

Fig. 31 Key signature change notation

The use of naturals will however be required in two cases:

- ▶ in the changing from a major key to its parallel minor, i.e. of the same key, for sharps; and conversely, in the changing from a minor key to its parallel major, for flats,
- ▶ in the changing from a key with accidentals, to the key of C major or A minor, i.e. without accidentals.

Fig. 32 Key change

Any note that has to return to its natural pitch, must be preceded by a natural, valid only for its octave pitch and whose effect stop in the next measure, according to accidentals rule.

Fig. 33 Local cancellation of accidentals



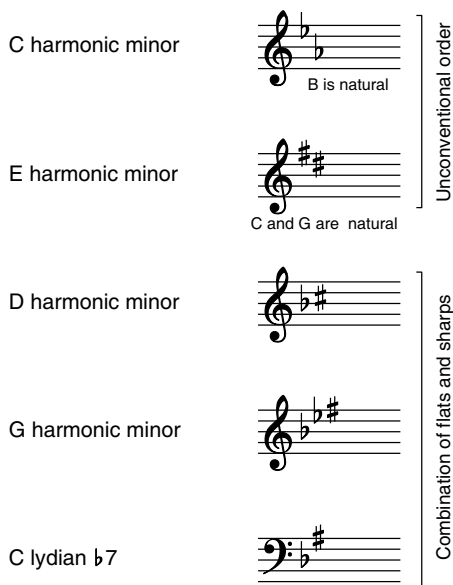
Notes to be accidentally raised or lowered by one tone must be preceded by a double sharp or double flat respectively, regardless of the key signature, i.e. even if these notes are already sharp or flat notes by the key signature.

Fig. 34 Alterations of one tone



The key signatures seen above are those of the major scale and its various modes in all keys. The key signatures of the harmonic and melodic minor scales and their respective modes require either accidentals of the same type but in an unconventional order, or a mixture of sharps and flats.

Fig. 35 Unconventional key signatures

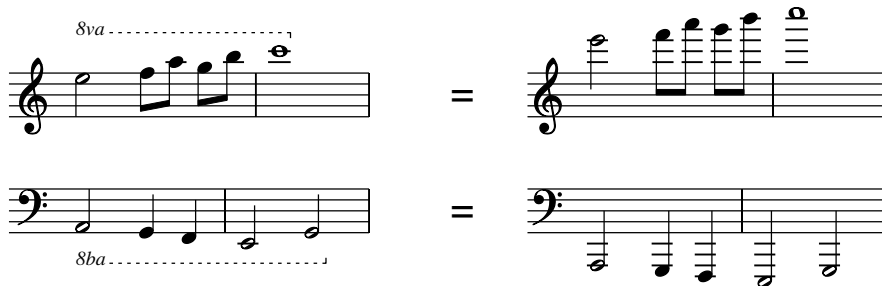


F - Octave signs

The notation of very high and very low tones requires the use of many ledger lines (making the reading of the notes difficult and imprecise), respectively above the treble staff and below the bass staff. The signs 8va and 8ba are then used, meaning to play the notes concerned in the upper and lower octaves respectively.

Fig. 36 8va and 8ba

8va (abbreviation of the Italian: *all'ottava*): this sign, only used in the G-clef, is placed above the staff and delimits the part of notes to be played in the upper octave.
 8ba (abbreviation of the Italian: *ottava bassa*): this sign, only used in F-clef, is placed below the staff and delimits the part of notes to be played in the lower octave.



In the case of notes located in the highest pitch, the sign 15ma can be used, placed above the staff in the G-clef and meaning to play two octaves above. For sections extending over several staves, the sign is extended like this:

Fig. 37 8va on several staves



G - Intervals notation

There are two types of intervals:

- ▶ melodic intervals, between two successive notes, i.e. separated in time,
- ▶ harmonic intervals, between two simultaneous notes, performed at the same time.

The notation of harmonic intervals has some peculiarities.

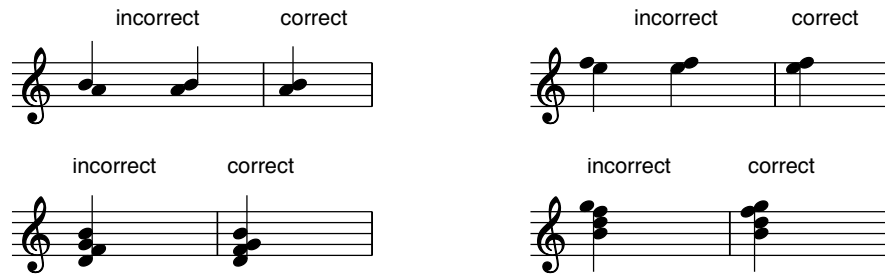
Fig. 38 Chords notation

Simultaneous notes of the same duration are connected by a stem (except for whole notes)



Fig. 39 Second intervals notation

Notes forming a harmonic second interval, i.e. two adjacent degrees, cannot be notated one above the other without overlapping. Therefore, one of them should be horizontally shifted. The highest note is always placed on the right, the common stem being in the middle. The same rule applies for chords (3 or more notes).



If the notes have their own stem, then the two stems are always vertically aligned, even if the highest note must be placed on the left.

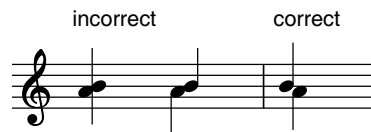


Fig. 40 Unison notation

When two voices share a staff, two notes of the same pitch (unison) can be played simultaneously. If the two notes have the same duration, the notation of a single note with two stems in opposite directions is enough.



If the two notes do not have the same duration, a single note with two stems can sometimes be enough. In other cases, two separate notes should be notated with their respective stems vertically aligned, as in the case of second intervals.

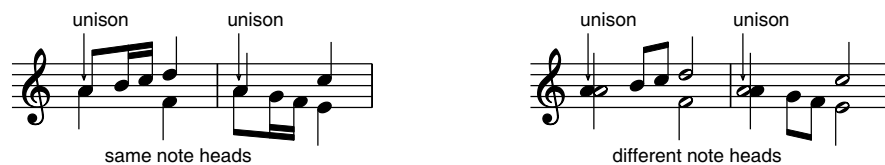


Fig. 41 Altered unisons notation

An altered unison is a note played simultaneously in its natural form and in its altered form (e.g. F - F#, A - Ab). Alterations can be notated in front of their own note, with two ways of notating the stems: either they obliquely join in a common vertical stem, or they are traditionally notated and a bracket indicates that both notes should be played simultaneously.



Alterations can also be notated grouped in front of the pair of notes. The accidental on the far left is applied to the left note, the next accidental to the right note.



H - Sounds and noteheads

The traditional oval of the noteheads designates the pitch of a sound. But this one is composed of several other frequencies called harmonics, which are usually not very audible or not audible at all, but which can be brought out by specific techniques, especially on stringed instruments. There are two types of harmonics: the natural harmonic and the artificial harmonic.

Fig. 42 Natural harmonic notation

Two notations are possible: the note is topped by a zero and is notated at its real pitch; or the oval of the note becomes a diamond, notated at the real pitch, H. or Harm. above the note indicating that it is a natural harmonic.

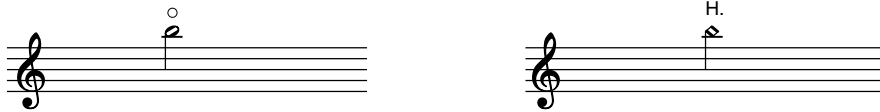


Fig. 43 Artificial harmonic notation

Two notations are also possible depending on the technique used:

1. The oval represents the note produced at the point where the finger is lightly placed. This note is only a guide for the execution and is not really produced. The diamond is the actual pitch played. A.H. stands for Artificial Harmonic.
2. In the second notation, the diamond of the note is represented at the actual pitch.



Fig. 44 Undefined pitches notation

The sounds sometimes used have an undefined pitch: percussion instrument, spoken voice, attacked string whose sound is partially muffled, etc. The notehead is then often transformed into a cross or is simply absent. The vertical position of this cross can be defined in several ways: by the nomenclature of the instrument (e.g. drums), by arbitrary convention (e.g. voice), at the pitch produced if the sound was not muffled (e.g. guitar).



3

Expression of the melody

Notes are rarely played flatly one after the other. On the contrary, many different ways of expressing and interpreting them are used, giving life to the melodic lines of the piece. The dynamics producing a depth of sound (background and foreground), the linking of the notes of a group or on the contrary their separation, the various possible ornaments which develop and improve them are an essential musical shaping of the melodic and rhythmic structures.

A - Dynamic markings

The dynamic markings are a set of signs describing the dynamics of the sound material, i.e. the relative sound intensity of its different elements. These signs can be applied to a single note or to a set of notes. The different sound intensities are conventionally graduated on a scale of 12 levels, not expressing absolute intensities (physically expressed in decibels), but relative intensities (louder than, softer than) in the manner of rhythmic duration signs⁶.

6. Rhythmic duration signs, p. 41

Fig. 45 Scale of dynamic markings

Intensity	Term (italian)	Sign
Strong	Fortissississimo	<i>ffff</i>
	Fortississimo	<i>fff</i>
	Fortissimo	<i>ff</i>
	Forte	<i>f</i>
Medium	Mezzo-forte	<i>mf</i>
	Mezzo-piano	<i>mp</i>
	Piano	<i>p</i>
	Pianissimo	<i>pp</i>
Low	Pianississimo	<i>ppp</i>
	Pianissississimo	<i>pppp</i>
	Pianississississimo	<i>ppppp</i>
	Pianissississississimo	<i>pppppp</i>

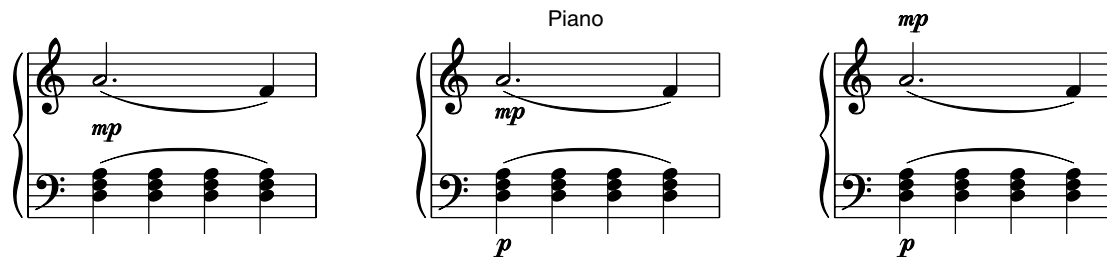
Dynamic signs should be placed as close as possible to the notes they affect. Depending on the type of instrument, they will be placed either above or below the staff, affecting all the following notes until otherwise indicated.

Fig. 46 Dynamic signs position

The dynamic signs are usually placed below the staff. However, in vocal staves, the dynamics are placed above the staff to avoid confusion with the text of the song.



In piano scores, dynamics affecting both staves are placed between them. If the dynamics affect their own staff, they are placed either above or below the staves.

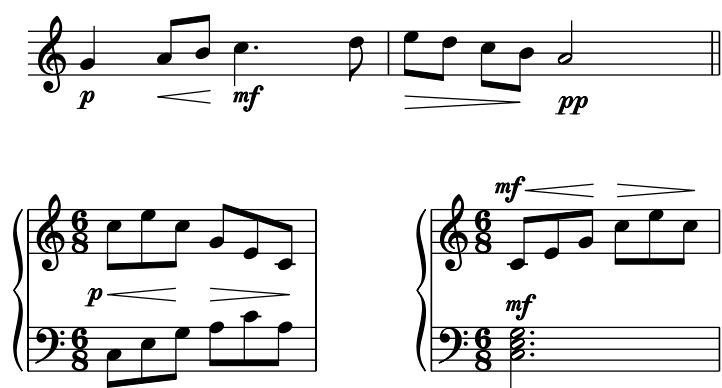


The dynamic variations can be in two opposite directions: increase or decrease of the sound intensity. These variations are made either suddenly, abruptly: it is then sufficient to assign the signs to the corresponding notes; or gradually, progressively, and notated by the signs called hairpins (crescendo or decrescendo).

Fig. 47 Hairpins signs

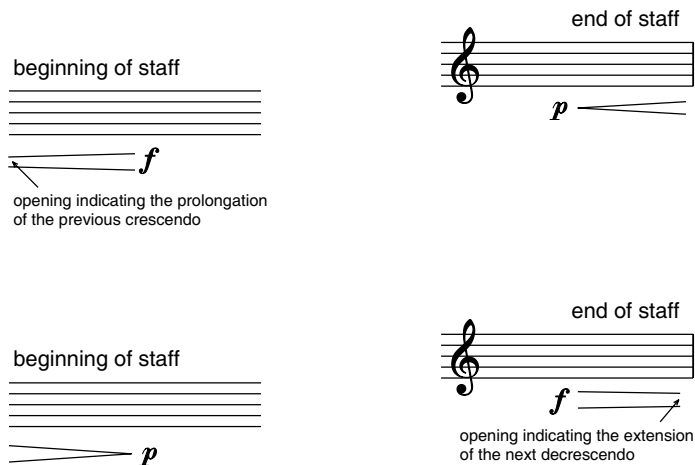
Direction of variation	Term	Abbreviation	Sign
Increase	Crescendo	cresc.	
Decrease	or Decrescendo Diminuendo	decresc. dim.	

Fig. 48 Hairpins signs notation



Crescendo or decrescendo hairpins are sometimes extended to the next staff (or system). Their corresponding signs will be cut in two parts as shown in the following figure.

Fig. 49 Hairpins on two staves



For a finer, more precise dynamic, some notes can individually have their own accentuation. The accentuation signs are generally placed near the noteheads.

Fig. 50 Accents notation

There are three main accents:

1. The strong accent, with a powerful attack,
2. The moderate accent and attack,
3. The tenuto, struck without noticeable attack and held for the duration indicated. Weak accent.



B - The slur

The slur has two meanings: it represents a group of notes, a sequence like a melodic unit, a word or a melodic phrase. It therefore allows the architecture of a section to be visualized, the hierarchy of its elements by visually grouping its different parts.

Fig. 51 Slur as a group of notes



It also indicates a group of notes to be played legato, i.e. linked to each other, without a break in sound. This phrasing is achieved with different playing techniques depending on the instruments:

- ▶ bowed instruments (violin, cello): the group of notes is executed with a single bow stroke,
- ▶ wind instruments (flute, saxophone): the notes are executed with one breath,
- ▶ stringed instruments (Guitar, Bass): the notes are played without being attacked,
- ▶ voice: the group of notes is sung with a single breath or on a single syllable,
- ▶ keyboards: the sound of the notes must be maintained, blended into the sound of the following notes.

Fig. 52 Slur as phrasing

keyboards: joined notes
 bow: with a single stroke of the bow
 wind: in one breath

bla bla ——— bla bla bla bla
 one syllable in one breath

Guitar or Bass

H P
 Hammer-on Pull-off

Sl. Sl.
 Slides ascending descending

bend release

Fig. 53 Slur position

The ends of the slur should be placed on the first and last note of the linked group. The slurs are placed vertically on the side of the noteheads, and preferably above the notes when the note stems of the group have opposite directions.

correct incorrect

on the noteheads side above the note

Fig. 54 Slur and tie combination⁷

7. Tied notes, p. 43

The placement of slurs and ties is independent but follows the same rules: always on the side of the noteheads when they have the same orientation, above the notes when at least one of the linked notes is stem down.

When a group of linked notes ends with a tied note, the slur should extend to the note, the breath, bow, etc., obviously extending to the note.

correct incorrect

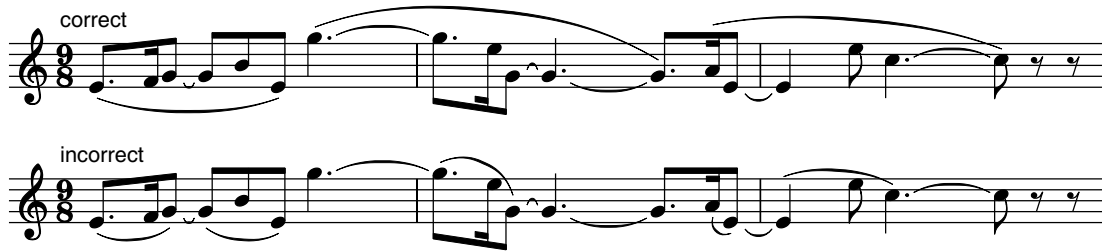


Fig. 55 Slurs or ties at the beginning and end of a staff

Slurs or ties at the end of a staff do not extend beyond the barline, and they stop in front of the barline at a change of time signature or before a new clef.



Slurs and ties begin after clefs, time and key signatures when these are placed at the beginning of the staff.



Fig. 56 Slurs or ties extending over two staves

Slurs or ties extend beyond the last linked note (staff end) and before the first note (staff start), meaning that they are two parts of a single slur.

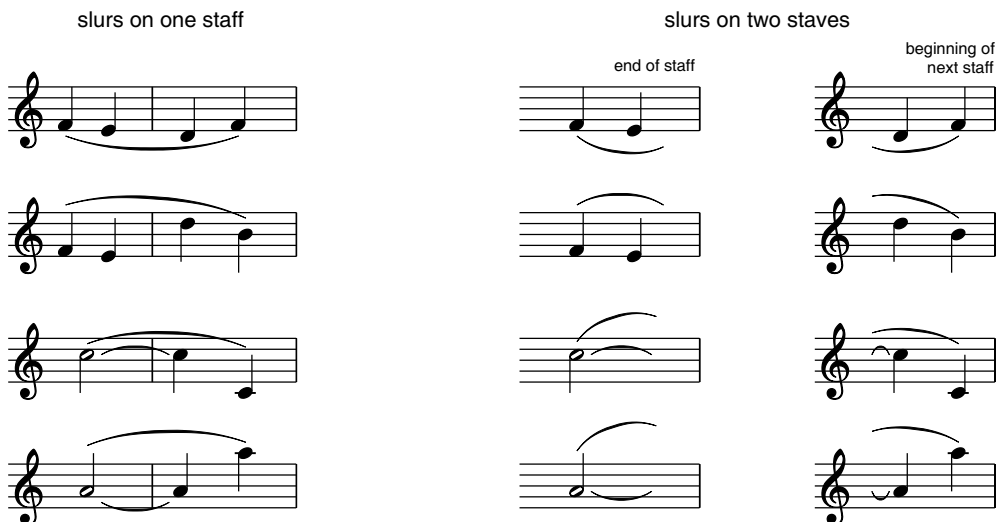


Fig. 57 Slurs or ties on two voices

The slurs or ties of the high voice are all convex, and conversely those of the low voice are all concave.



Fig. 58 Interval or chord slurs

The rules for single notes apply here: a single slur is sufficient. Slurs and ties can be combined.

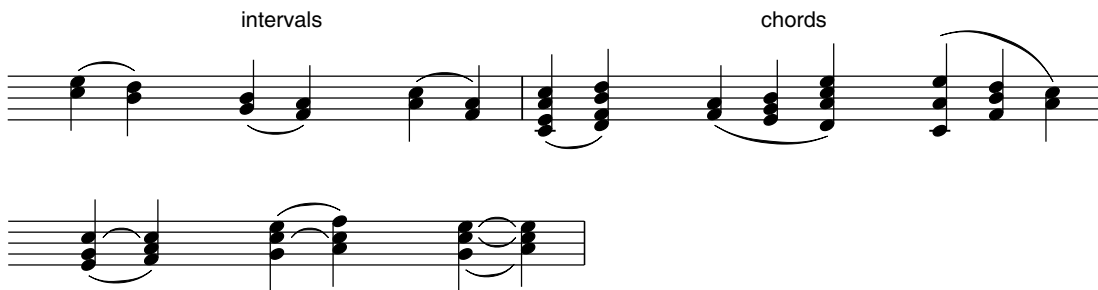


Fig. 59 Slurs and irrational rhythms

The notation of irrational rhythms uses straight brackets to distinguish them from slurs (which are curved). Straight brackets and slurs should preferably be on opposite sides.

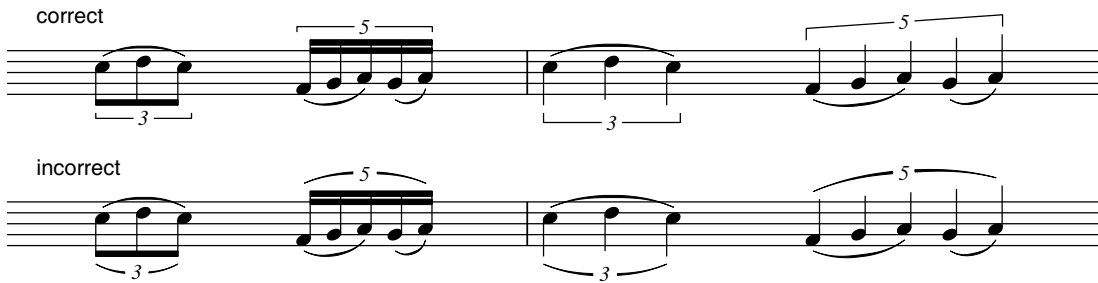


Fig. 60 Slurs and grace notes

Slurs, although not necessary, are often used in the notation of grace notes. They are always separated from any slurs or ties in the standard notes that follow them.



C - The slide

The slide is a phrasing technique that consists in going through the pitch scale in a continuous way, without any break, unlike the usual way of going from one pitch to another. The slide thus goes from one note to another in a progressive way, linking the two notes. Classical terminology calls it glissando (gliss.), in Jazz/Rock it is called slide (Sl.). These slides have defined starting and ending pitches and a defined duration.

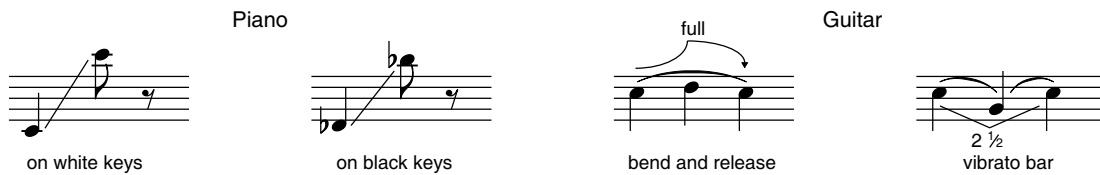
Fig. 61 Slides notation



The slide can be spread over a period of time, the notation of which requires several signs. The intermediate signs are pure rhythmic notation, without noteheads, their pitch not being defined.

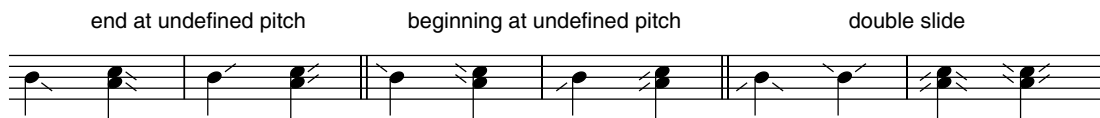


Some instruments have their own peculiarities: on keyboards, the slide can only be done on the white keys or on the black keys. On the guitar, the slide can be produced by pulling the string (bend) or by releasing it (release); or, for guitars equipped with one, by pushing or releasing the vibrato bar.



The portamento is a slide, generally short, functioning a bit like a grace note. Its duration is not defined and one of the ends (beginning or end) of the slide has an indeterminate pitch. In Jazz/Rock terminology, it is also called a slide.

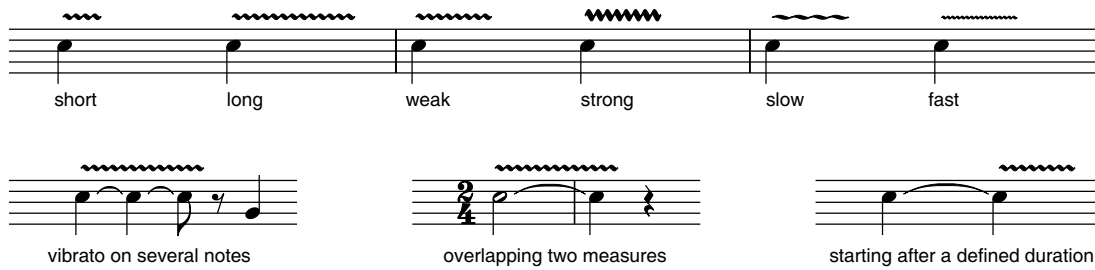
Fig. 62 Portamento notation



D - Ornaments

Ornamentation consists of a melodic development of a note by various playing techniques. The vibrato is a small fluctuation in pitch, always less than a semitone, of variable duration, extent and speed. The corresponding sign is a wavy line, whose length expresses the duration and whose thickness or extent of the curves expresses the sound extent.

Fig. 63 Vibrato notation



The trill is a rapid alternation of two notes together, i.e. at intervals of one diatonic second (one tone or semitone). The trill is written with the abbreviation: *tr* followed by a wavy line when the trill is not too short. The written note is always the lowest. The trill is a kind of vibrato, but with a precisely defined melodic amplitude.

Fig. 64 Trill notation

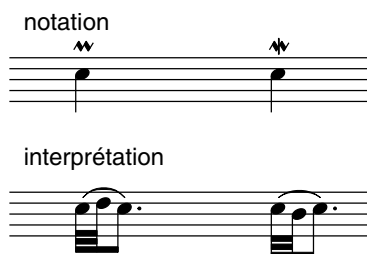


If the upper note of the trill is altered (chromatic degree), the corresponding alteration is placed between the sign *tr* and the wavy line, or above the sign if there is no line.



The mordent is a rapid alternation of two notes together, in a way, a portion of a trill (its first 3 notes). The third and last note, longer, has a duration relative to the current tempo. The mordent is an alternation with a note located one diatonic second above; the reverse mordent, with a diatonic second below.

Fig. 65 Mordent notation



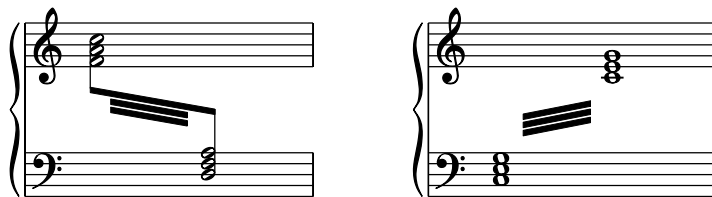
The tremolo designates several different but related processes. There are two melodic categories: repetition tremolos and trill tremolos; and two rhythmic categories: tremolos with a definite rhythm and those with an undefined rhythm. By combining melodic and rhythmic categories, we obtain 4 types of tremolos⁸. The tremolo that interests us here is, like the trill, a rapid rhythmically undefined alternation of two notes, but whose melodic amplitude is greater than a major second.

8. Rhythmic tremolos, p. 73

Fig. 66 Tremolo notation



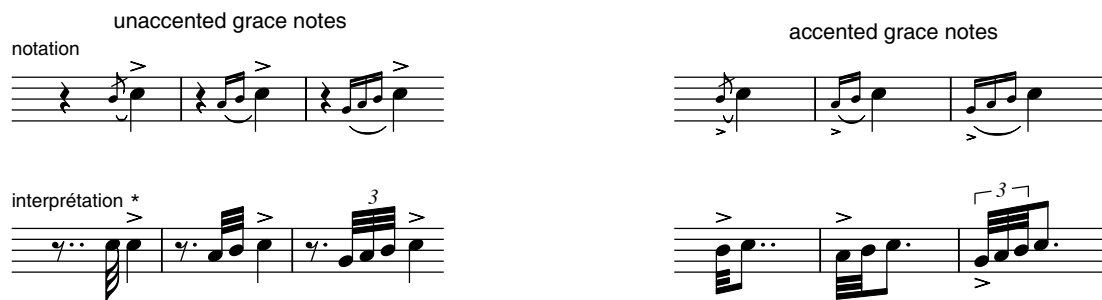
The tremolo can alternate several notes at the same time, and be notated on two staves as in keyboard scores. The tremolos are then notated between the two staves.



Grace notes are quick little melodic strokes without a definite rhythm, and are notated by small notes (grace notes) preceding a standard note. There are two types of grace notes:

- ▶ unaccented grace notes, the most common, where the duration of the grace notes is “taken” from that of the preceding note or rest,
- ▶ the accented grace notes, where their duration is taken from that of the following note or rest.

Fig. 67 Grace notes notation



* the rhythmic notation is here only indicative and only means: to execute very quickly

Instruments range

The range of the instruments (or voice), sometimes confused with the register or the ambitus, is fundamental for the choice of an instrument in the execution of a piece. This range makes it possible to choose the appropriate instruments to perform the different parts of the sound spectrum covered by the piece, and to obtain a good distribution of the bass and treble, of the sound intensity and of the timbres in the orchestration.

A - Instruments range

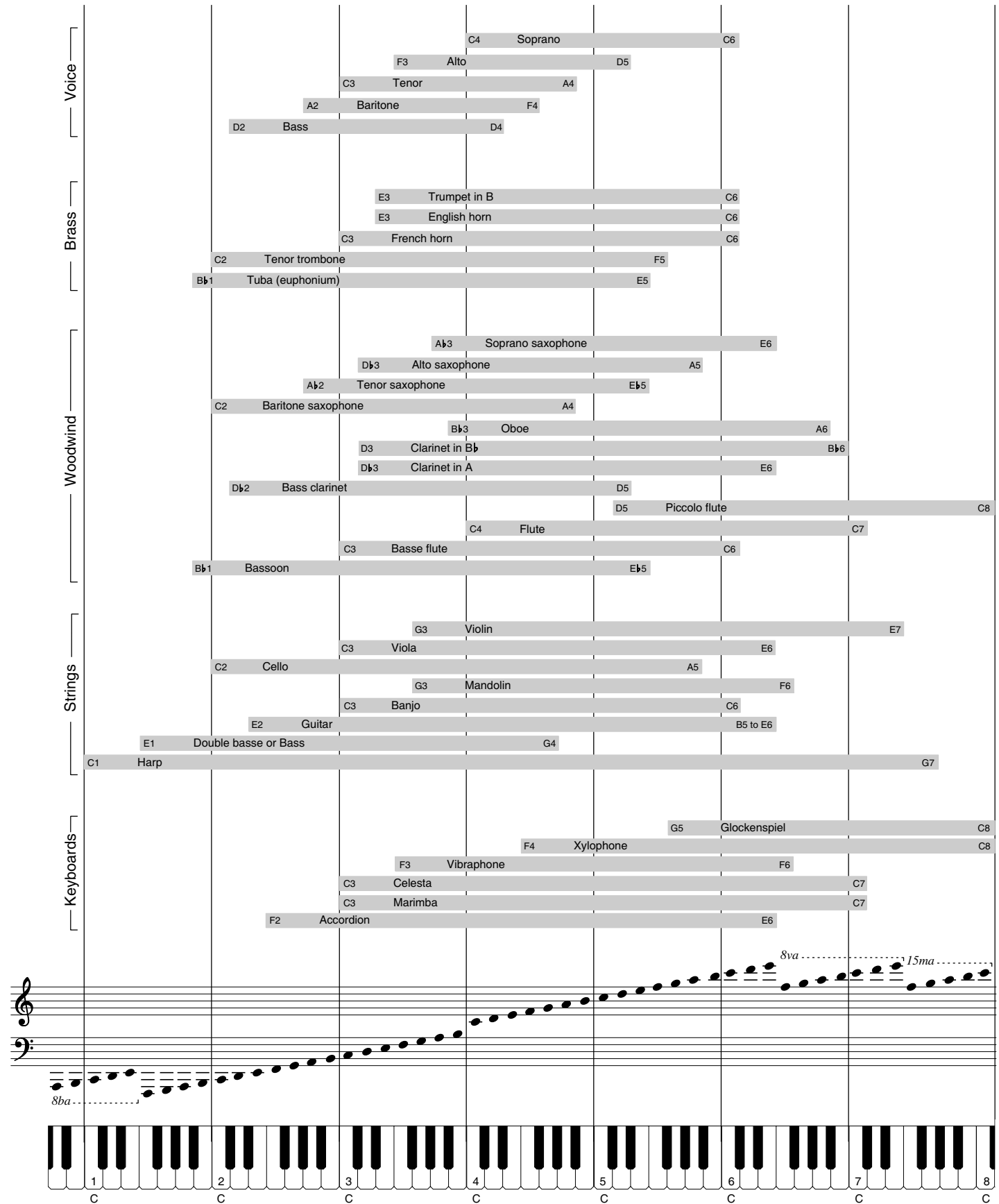
The *range* of an instrument is the extent of the potential sound spectrum that it can cover, from its extreme low to its extreme high. This range is determined by the morphological characteristics of the instrument, which can vary according to the manufacturer, the model, and also according to the skill and dexterity of the performer, the extreme notes being more difficult to execute.

The range of the audible sound spectrum is globally divided into several parts called *registers*. A common distinction is made between the bass, midrange, treble and high registers. Each register defines the set of notes having the same sound characteristics of intensity, timbre, harmonics. The instruments, according to their own range, will thus cover a variable portion of all the registers, some being even inaccessible to them.

The *ambitus*, finally, is the sound extent of a part of a piece, of a section, of a melodic line, defined by the distance between the lowest note and the highest note. The determination of the ambitus is necessary to know if the range of an instrument allows it to execute this part, and if so, which sound characteristics will have the register in which it plays.

The table on the following page represents the current range of the main instruments classified by families (Keyboards, Strings, Woodwinds, Brass and Voice), in relation to the range of the Piano, the widest of the instruments, represented by all the keys of the keyboard and their corresponding standard notation. The extreme notes of the range of each instrument are indicated at the ends of the shaded strips. These ranges are only indicative, they can vary according to the models and the performers as indicated above. However, this table offers a general view of the range that an instrument can cover and the position of this range in all the registers.

Fig. 68 Table of the main instruments range



B - Transposing instruments

Some instruments, especially wind instruments, are said to be transposing instruments: in other words, they produce a real sound different from the one notated on the score. These wind instruments are grouped in various families (flute, saxophone, brass, etc.) each comprising several instruments of different size and range. The same fingering on these instruments will produce different pitches, due to the difference in the size of their tubes.

A musician often plays several instruments of the same family (e.g. soprano sax, alto, tenor, etc.), so we associate a note (on the score) with a given fingering, allowing to easily switch from one instrument to another. The same score will be played with the same fingerings, whatever the instrument, but the actual sound will be different each time!

Fig. 69 **Woodwind transposition**

On the right, we have the real pitches, according to the instrument considered, of the C note indicated on the left.


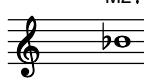
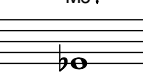
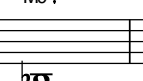
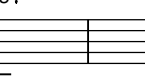
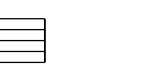



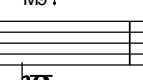


Notation	Soprano sax. M2	Alto sax. M6	Tenor sax. M9	Baritone sax. M13	English horn P5
					
Notation	Clarinet in B♭ M2	Clarinet in A m3	Bass clarinet M9	Piccolo flute P8	Alto flute P4
					

Fig. 70 **Brass transposition**

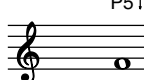
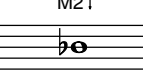

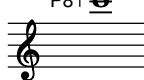


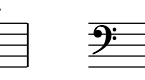

Notation	French horn P5	Trumpet in B♭ M2
		

Fig. 71 **Keyboards and Strings transposition**

Notation	Celesta P8	Glockenspiel P8	Guitar - Banjo P8	Notation	(Double)Bass P8
					

Rhythm notation

■ 1. Durations notation	39
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■ 3. Time frames	49
■ 4. Rhythmic beams	55
■ 5. Irrational rhythms	61
■ 6. Rhythmic abbreviations	73

Rhythm notation concerns the temporal dimension of sound events. A set of signs for notes and rests expresses their different durations. However, in practice, these signs represent more the temporal interval between the sound events than their own duration, which can vary according to the phrasing adopted, while keeping intact the temporal intervals, i.e. the rhythmic identity of the section performed.

These signs of note and rest represent relative and not absolute durations, therefore do not measure but compare the different duration signs between them. These are linked by simple arithmetic ratios: half or double of... However, much more complex arithmetic ratios (called irrational durations) can be notated by means of various signs, but also making the reading and execution much more complex! Some other duration signs allow to interpret/alter locally the duration of certain notes or rests. To be able to execute these relative duration signs, it is then necessary to define their real (absolute) duration: the determination of the tempo, which fixes the duration of a "reference" sign, defines at the same time all other durations relative to this reference.

The durations or rhythmic intervals are organized in various temporal units, nested one within the other, the rhythmic units of one level grouping together in a unit of a higher hierarchical level. Rhythmic beam signs group notes/rests into blocks of different durations, which are themselves grouped into a new unit called a measure, delimited by barline signs. The measures can then also be grouped into cycles, bar structures, movements, etc. The various signs used for these boundaries allow a better understanding of the musical structure and an easier reading.

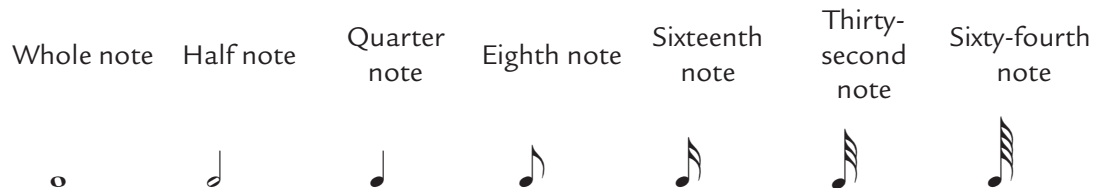
The signs written on the staff are basically read from left to right, but some signs indicate measure repetitions, backward or forward jumps, allowing a non-linear reading of the score and avoiding to rewrite unnecessarily entire portions of it. Still with the aim of lightening the score and making it easier to read, various graphically very simple signs function as rhythmic abbreviations by advantageously replacing the groups of signs they represent.

Durations notation

The duration dimension of the sound defines the rhythmic space. Like the pitch axis, the duration axis is discontinuous, segmented, its segments being regulated by arithmetically defined ratios, i.e. based on a fixed duration unit of which the individual segments are a multiple or fraction. In practice, however, while keeping the structure of these duration ratios, the rhythmic execution is often "elastic", with speedups and slowdowns, avoiding an interpretation considered too rigid in a given context.

A - Note duration

We mainly use 7 signs of note duration, named and notated as follows:

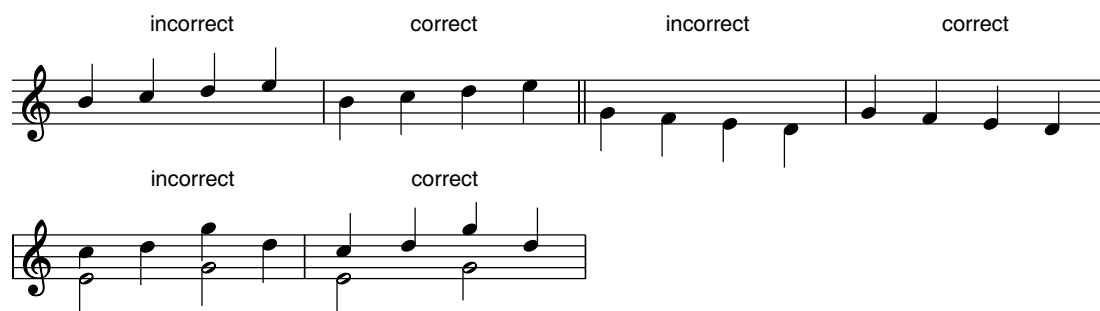


These signs are composed of 3 distinct elements:

1. A note head, hollow oval for the whole and half note, solid oval for the other signs.
2. A up stem, located on the right of the notehead, or a down stem, located on the left of the notehead. The direction of the stem has no effect on the duration of the note. The stems are generally moved to the center of the staff to save vertical space and improve readability.

Fig. 72 Stem direction

However, this principle is no longer possible when there are two voices on the same staff. In this case, the stem of the notes is directed towards the outside of the staff to avoid their collision.

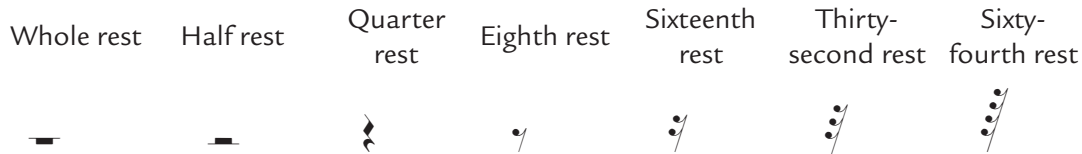


3. One or more flags, always notated to the right of the stem, whatever its direction:



B - Rests duration

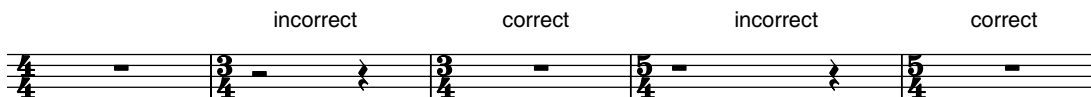
There are 7 main signs for the duration of rests, named and notated as follows:



The whole rest is a rectangle *hanging on* the 4th line, the half rest is a rectangle *placed on* the line, which allows them to be differentiated.

Fig. 73 **Whole measure rest**

A rest spanning an entire measure, however long, is indicated by a whole rest, centered in the measure.



A rest that spans several measures is indicated by a long bar, centered in the measure, and topped by a number indicating the number of measures.



Fig. 74 **Vertical position of rests**

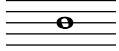
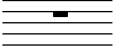





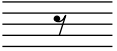

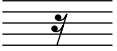

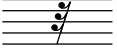


The vertical position of rests will be changed when two different voices share the same staff. Whole rests are all hung on one line, half rests are all on one line.



C - Note-rest equivalence

To each note duration signs corresponds a rest sign of equal duration. In the following table, the signs located on the same line are of equal duration. Therefore, every note has its corresponding rest on the same line. In the last four lines, the notes and their corresponding rests have the same number of “flags”.

Fig. 75 Table of note and rest durations

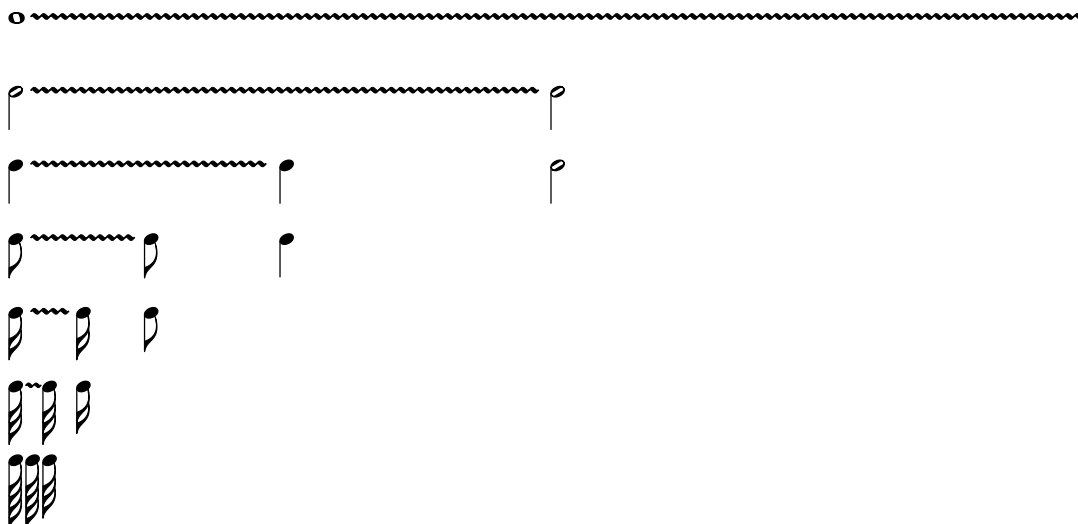
Whole note			Whole rest
Half note			Half rest
Quarter note			Quarter rest
Eighth note			Eighth rest
Sixteenth note			Sixteenth rest
Thirty-second note			Thirty-second rest
Sixty-fourth note			Sixty-fourth rest

D - Signs relative duration

These note signs (or rest signs) also have duration relationships. Each sign lasts twice as long as the next one (downwards): $\circ = \text{d} + \text{d}$, $\text{d} = \text{q} + \text{q}$, $\text{q} = \text{e} + \text{e}$. Conversely, each sign lasts half of the previous one (upwards). All these signs have therefore a *relative* duration and not an *absolute* one (expressed in number of seconds). The duration ratios of the signs relative to the others are therefore fixed, whatever their real duration.

Fig. 76 Representation of relative duration of notes

The wavy lines here visually express the note durations. Each note can be replaced by its corresponding rest.



E - The dot

The dot is a sign which, when added to note or rest values, allows to obtain other durations. The dot increases the duration of a sign by half of its initial duration. The double dot increases the duration of a sign by half and quarter of its initial duration.

Fig. 77 Dot and double dot notation

A dotted sign is therefore worth three times the following non-dotted sign (e.g. a dotted half note is worth 3 quarter notes)
 A double-dotted sign is therefore worth 7 times the sign following the next one (e.g. a double-dotted half note is worth 7 eighth notes)

We thus obtain two main sequences of signs, from the longest to the shortest:

- ▶ simple values: divisible by 2
- ▶ dotted values: divisible by 3

Fig. 78 Table of simple and dotted values

Simple values divisible by 2					
Dotted values divisible by 3					

Simple values	Dotted values
1 is worth:	1 is worth:
2	3
4	6
8	12
16	24
32	48
64	96

The simple and dotted values constitute two exponential progressions. The relative duration can be evaluated from any sign: a half note is worth 2 quarter notes, a quarter note is worth 2 eighth notes, etc.

F - The tie

The tie is a sign linking two notes of the same pitch and of any duration. The second note (tied note) is not played but its duration is added to that of the preceding note.

Fig. 79 Use of the tie

The tie is used in different contexts:

1. To allow clearer rhythmic notation by visualizing beats and pulses,
2. To notate signs whose duration extends into the next measure,
3. To express durations which cannot be notated otherwise (duration of 5 or 9 units for example).

① rather than:

②

③

Duration of 5 eighth notes Duration of 9 eighth notes

③

Fig. 80 Tie notation

The tie is placed on the side of the noteheads, convex with down stemmed notes, concave with up stemmed notes. When two voices share the same staff, the slurs of the high voice are always convex, those of the low voice always concave. In the case of tied chords, their extreme ties are convex at the top, concave at the bottom, and the inner ties depend on their vertical position.

G - Undefined durations

Various rhythmic signs express undefined durations in relation to other duration signs. These durations, depending on the tempo and the interpretation, can be found in several situations:

Fig. 81 Grace notes

Grace notes are notes executed very quickly, independently of the tempo and duration of their target note. Single grace notes are notated as a small barred eighth note, stem up, and double (or more) grace notes are notated as small sixteenth notes, stem up. In any case, slurs are not necessary.

Fig. 82 The fermata

The fermata, like the staccato, is placed on the side of the notehead, and indicates that the duration of the note should be extended at the discretion of the performer. It can also be applied to a rest.



Fig. 83 The arpeggiated chord

An arpeggiated chord is a chord in which the notes are played successively and rapidly in the manner of a grace notes. The arpeggio is notated by means of a vertical wavy line placed in front of the chord.

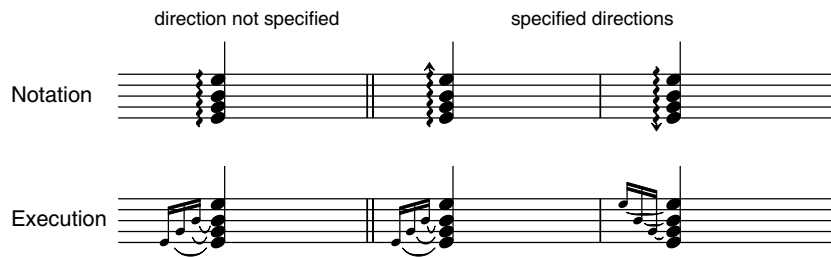


Fig. 84 The comma

The comma is a brief rest, of indefinite duration, placed after a note and shortening its duration. It is notated by a small comma or apostrophe.

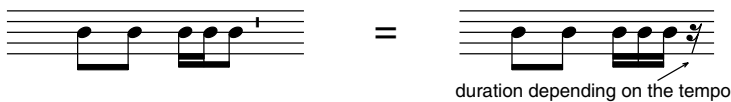


Fig. 85 The staccato

The staccato is a type of phrasing consisting of playing a note detached from the next. Its duration is then shortened, this shortening being variable, depending on the tempo and the interpretation. The staccato is notated with a dot above or below the notehead (depending on the direction of its stem).



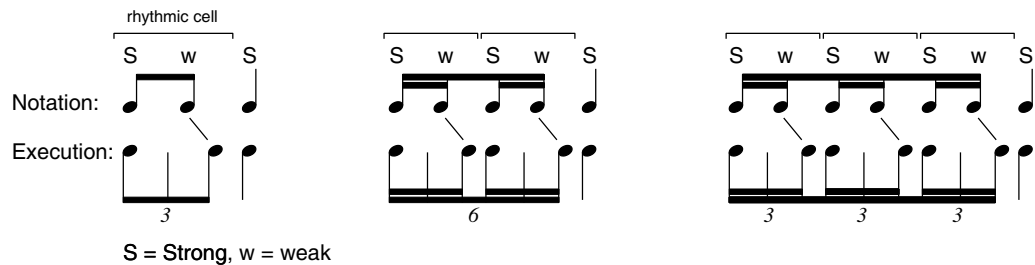
H - Ternary interpretation

In the Jazz and Rock tradition, we frequently find scores notated with *binary* signs (i.e. with signs implying the division of the beats by 2, 4, 6), but to be *ternary interpreted* (i.e. actually dividing the beats by 3, 6, 9), thus keeping the scores more readable. One can find at the beginning of the score the words “shuffle” or “swing feel”, or the following signs: $\text{♩} = \overset{\frown}{\text{♩}} \overset{\frown}{\text{♩}}$ (division of the beat by 3) or $\text{♩} = \overset{\frown}{\text{♩}} \overset{\frown}{\text{♩}} \overset{\frown}{\text{♩}}$ (division of the beat by 6 or 9).

The principle of “ternary interpretation” consists in delaying the execution of the weak degrees so as to produce an implicit division by 3 of the rhythmic cells, as shown in the rhythmic notation of the following figure.

Fig. 86 Ternary interpretation of rhythmic cells

The divisions by 2, 4 and 6 of the beat are composed of 1, 2 and 3 rhythmic binary cells respectively, which when ternary interpreted produce a beat division by 3, 6 and 9. The oblique lines represent the delay of the weak degrees.



Valid for a medium tempo, the delay of the weak degrees is more attenuated in fast tempos to avoid a too angular, too rigid swing; on the contrary, the delay will be accentuated during slow tempos avoiding a too round and too soft swing. The “rate” of ternary interpretation is therefore variable and depends on the tempo.

Fig. 87 Rate of ternary interpretation of rhythmic cells

This rate of ternary interpretation is left to the discretion of the performer. Any deviation from the strict division by 3 of the beats cannot be notated by the rhythmic standard notation.



2 Tempo and beats

The definitions of beat and tempo are essential for the execution of a piece whose durations, on the score, are only relatively fixed. The general speed of execution is an important factor for the quality, the "flavor" of a piece: too fast can be considered as rushed and messy, too slow as heavy and cumbersome...

A - Definition

The score having fixed the relative durations of its different elements, it is necessary to assign them an absolute duration in order to be executed! In most pieces of music, there is (more or less clearly) a central flow whose beats are called *pulses*. The interval between two pulses defines a fundamental duration called *beat* (in the sense of a reference unit of duration). It is this reference unit that is used as a standard of measurement for all other durations.

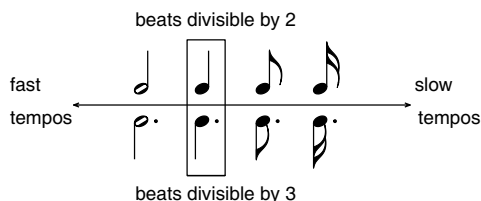
We call *tempo* the speed of execution of a piece, which is none other than the speed of the flow of its pulses. To determine this speed, we use the following equation:

Duration of the beat = Number of pulses per minute

Example: $\text{♩} = 60$ means that the beat is expressed here by a quarter note, and that its duration is equal to one minute divided by 60, i.e. one second. This will result in a flow of one pulse every second.

The quarter note is the most used sign to express beat, with the dotted quarter note for beats basically divided by 3. Very fast tempos tend to use the half note as beat expression, very slow tempos tend to use the eighth note.

Fig. 88 Signs representing beat



3 Temporal frames

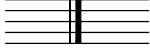

The temporal arrangement of a piece takes the form of an embedding of rhythmic structures into each other: divisions, beats, measures, cycles, bar structures, sections, movements, etc. are the different frames. These must be well represented by the notation, both for comprehension and for execution. However, these embeddings can be in very variable numbers, or even absent in certain improvisations for example.



A - Barlines


The musical signs distributed on the staff are visually grouped into small sections called measures, delimited by perpendicular (bar) lines of the same height as the staff. There are various types of barlines that allow you to visually represent the architecture of the piece, its temporal structure and the hierarchy of its different sections.



Fig. 91 Table of the different barlines

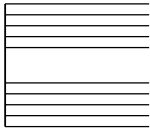
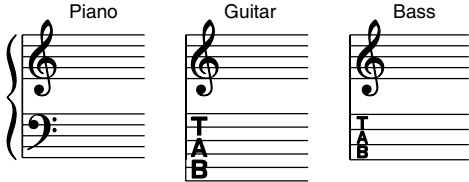
Name	Sign	Description	Example of representation
Barline		Delimits a measure	
Dashed barline		Subdivides a complicated measure	
Double barline		Indicates the end/start of a section (bar structure) of a piece.	
		Is placed when there is a time signature or a key signature change (unless they are frequent).	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>time signature change</p> </div> <div style="text-align: center;"> <p>key signature change</p> </div> </div>

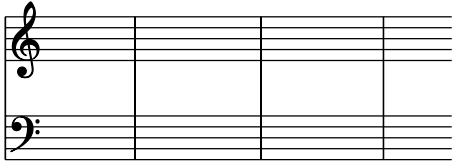
Final barline  Indicates the end of a piece or a movement. 

Repeat barline  The part between the two repeat barlines must be played twice. 

If the part to be played back is located at the beginning of the piece, the first barline is useless. 

Double repeat barline  Indicates the end of a part to be played again and the beginning of another one. 

System barline  Placed at the beginning of a staff, this barline visually connects the staves forming a system. 
(staff tablature)

The other barlines remain restricted to their staves, except for the Piano systems. 

B - Time signatures

The time signature is an indicator of the duration of a measure, expressed in the form: $\frac{X}{Y}$
(X = numerator and Y = denominator)

X indicates the number of beats in the measure (or fraction of beats: cf. compound meters⁹)

Y indicates the duration of these beats, expressed as a fraction of a whole note (1/Y of a whole note)









For example, the time signature $\frac{3}{4} = 3 \times \frac{1}{4}$, so: 3  ( = $\frac{1}{4}$ of whole note)

Fig. 92 Correspondence sign/whole note fraction

Signs:						
Whole note fraction:	$\frac{1}{1}$	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{8}$	$\frac{1}{16}$	$\frac{1}{32}$
Time signature denominator:	1	2	4	8	16	32

If the beats are divisible by 2, they are expressed by simple values, thus whole fractions of a whole note. The denominator then indicates the beat. The meters (structure of the measure) whose beats are expressed by simple values are called *simple meters*.

9. Compound meters, p. 51

Fig. 93 Main simple meters

The beat of simple meters is mostly expressed by a quarter note (in box).






SIMPLE METERS					
Beat value	Number of beats				
	1	2	3	4	5 etc.
	$\frac{1}{1}$	$\frac{2}{1}$	$\frac{3}{1}$	$\frac{4}{1}$	$\frac{5}{1}$
	$\frac{1}{2}$	$\frac{2}{2}$	$\frac{3}{2}$	$\frac{4}{2}$	$\frac{5}{2}$
	$\frac{1}{4}$	$\frac{2}{4}$	$\frac{3}{4}$	$\frac{4}{4}$	$\frac{5}{4}$
	$\frac{1}{8}$	$\frac{2}{8}$	$\frac{3}{8}$	$\frac{4}{8}$	$\frac{5}{8}$
	$\frac{1}{16}$	$\frac{2}{16}$	$\frac{3}{16}$	$\frac{4}{16}$	$\frac{5}{16}$

Fig. 94 Examples of simple meters

With rare exceptions¹⁰, the sum of the durations of the signs in the measure must correspond to the duration indicated by its time signature. Two signs, less and less frequent, can replace the time signatures $\frac{3}{2}$ et $\frac{4}{4}$.











10. Measures duration and irrational rhythms notation, p. 70



If the beats are divisible by 3, they are expressed by dotted values, but these are not whole fractions of the whole note. It is therefore necessary to take, as a unit of duration, the third of a beat that can be expressed by a simple value. The denominator indicates here the third of a beat, that is to say three times the number of beats of the measure. Meters whose beats are notated with dotted values are called *compound meters*.

Fig. 95 Main compound meters

The beat of compound meters is mostly expressed by a dotted quarter note (in box).

COMPOUND METERS					
Beat value	Number of beats				
	1	2	3	4	5 etc.
(= 3 ) 	$\frac{3}{2}$	$\frac{6}{2}$	$\frac{9}{2}$	$\frac{12}{2}$	$\frac{15}{2}$
(= 3 ) 	$\frac{3}{4}$	$\frac{6}{4}$	$\frac{9}{4}$	$\frac{12}{4}$	$\frac{15}{4}$
(= 3 ) 	$\frac{3}{8}$	$\frac{6}{8}$	$\frac{9}{8}$	$\frac{12}{8}$	$\frac{15}{8}$
(= 3 ) 	$\frac{3}{16}$	$\frac{6}{16}$	$\frac{9}{16}$	$\frac{12}{16}$	$\frac{15}{16}$
(= 3 ) 	$\frac{3}{32}$	$\frac{6}{32}$	$\frac{9}{32}$	$\frac{12}{32}$	$\frac{15}{32}$

The previous explanations refer to measures with a whole number of beats. However, some measures have a non-integer number of beats, their last beat being generally a fraction of the preceding beats. Say otherwise, these measures are characterized by an irregular flow of pulses. These measures are often called *asymmetrical measures*.

Fig. 96 Example of asymmetric measures

beats:

3.5 beats 3.25 beats 3.66 beats

To determine the meter of these measures, the sign expressing the next (smaller) fraction of a whole note is chosen as the unit of duration, until the measure contains a whole number of this sign. The denominator will be the sign of this whole note fraction.

Fig. 97 Asymmetric meter determining

Beat value = ♩

3.5 ♩ (so: 7 ♩) 3.75 ♩ (so: 7.5 ♩ → 15 ♩) 3.25 ♩ (so: 6.5 ♩ → 13 ♩)

Beat value = ♩.

3.66 ♩ (so: 11 ♩) 1.83 ♩ (so: 5.5 ♩ → 11 ♩) 2.5 ♩ (so: 7.5 ♩ → 15 ♩)

Some complex measures, especially asymmetrical ones, are sometimes represented as an addition of meters, to better visualize their structure. This addition of meters can be in brackets, following the main meter, or replacing it.

Fig. 98 Mixed meters of complex measures

In very long measures, a dotted bar¹¹ is sometimes added to better delimit the two parts.

11. The different barlines, p. 49

C - Navigation signs

It is often necessary to replay entire sections of a piece. To avoid rewriting them entirely, we use two main signs and various indications placed in the score, allowing to browse it in a more complex way than a simple linear reading from beginning to the end.

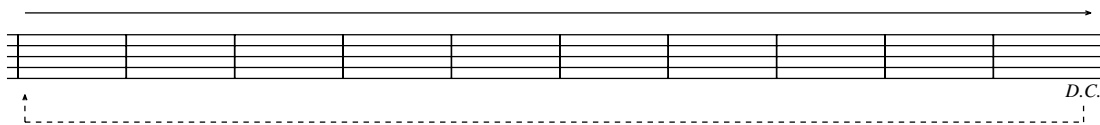
The two signs used are the Dal Segno sign: § (Italian for “from the sign”) and the Coda sign (Italian for “tail”): ⊕ . These signs indicate the beginning or the end of a section of a piece, by placing themselves on the barline delimiting this beginning or end. There are also several indications (often abbreviated Italian locutions) placed on the barline from which to go back in the score:

- ▶ Da Capo (abbreviation D.C.) literally meaning “from the beginning” (of the piece),
- ▶ Dal Segno (abbreviation D.S.) meaning “from the sign” (§),
- ▶ the word Fine indicating the end of the piece.

These signs and indications are then combined in the score to produce more or less complex navigations. In the following examples, solid lines indicate a forward movement in the score, dashed lines a backward movement, and curved dashed lines a jump (the section below this curved line is not played).

Fig. 99 Navigation examples

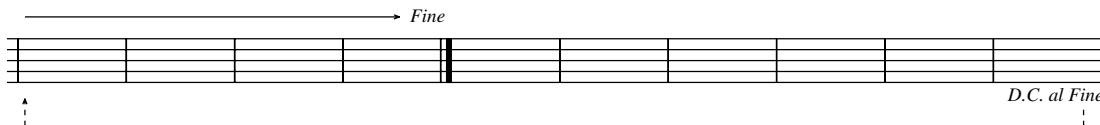
1. From the D.C. indication, go back to the beginning of the song



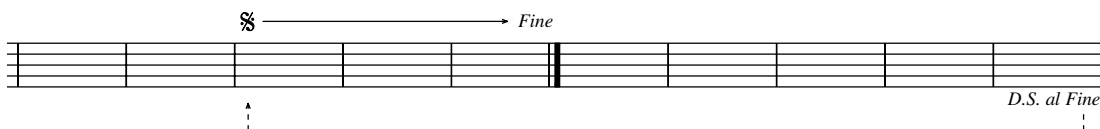
2. From the D.S. indication, resume from the § sign



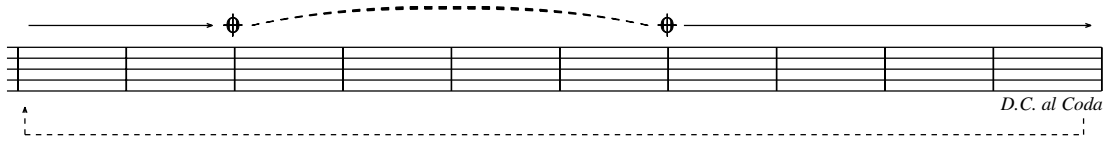
3. D.C. al Fine means to go back to the beginning of the piece until you reach the Fine indication



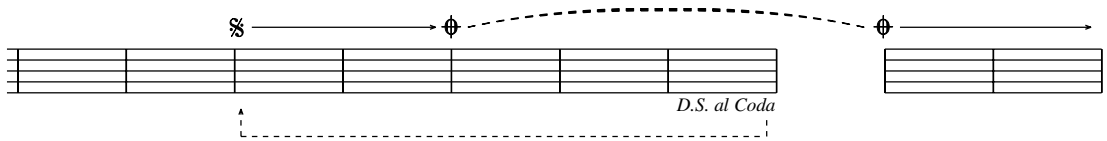
4. D.S. al Fine means to resume at the § sign until the Fine indication



5. D.C. al Coda means go back to the beginning of the piece, continue to the first \oplus sign, then jump to the second \oplus sign.



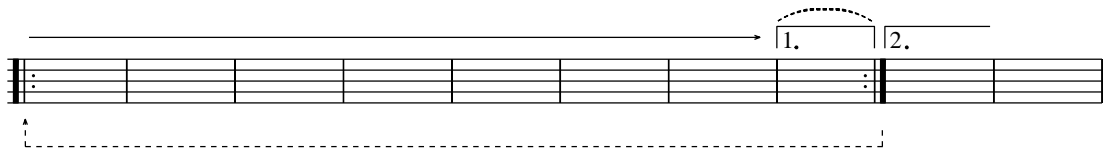
6. D.S. al Coda means resume at sign \S , continue to the first \oplus sign, then jump to the second \oplus sign.



A section to be played twice can have two different endings (of any number of measures). The first variation is indicated by the sign $\boxed{1.}$ and the second variation by the sign $\boxed{2.}$. The number of variants can be greater than two.

Fig. 100 Repetition with endings

Play to the second repeat barline, back to the first, play to the first variation and jump directly to the second variation.



4 Rhythmic beaming

The beam is an essential element of rhythmic notation: it allows the organization of different durations into groups of notes, thus into new temporal units, functioning a bit like words in written language: phrases are read word by word and not letter by letter. Much more than just a reading facility, beams represent higher level rhythmic structures, endowed with their own musical meaning.

A - Notation principle

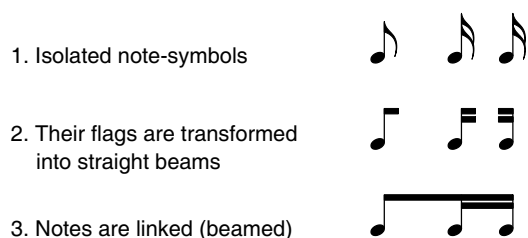
Beams are rhythmic bars, straight but of variable slope, linking any number of notes and thus greatly increasing rhythmic readability. Indeed, a sequence of isolated notes is, in a way, the whole of the detached letters of a phrase. Beams then have the effect of visually grouping these notes into rhythmic blocks, equivalent to the different words in a sentence.

Fig. 101 Beams readability



Beams are the graphic transformation of the flags of note figures, and retain their rhythmic meaning. Obviously, only signs with at least one flag can be beamed.

Fig. 102 Beaming principle



The transformation of flags into beams must take into account three points:

- ▶ the flags of note figures are numbered starting from the top of the stem (the flag furthest from the notehead),
- ▶ the different flags of a note connect to the same numbered flags of other notes. Each note therefore has as many beams as it has had flags,
- ▶ the beams of the notes located at the ends of the group always go towards the inside of this group (the flags of the last note of the group thus change direction).

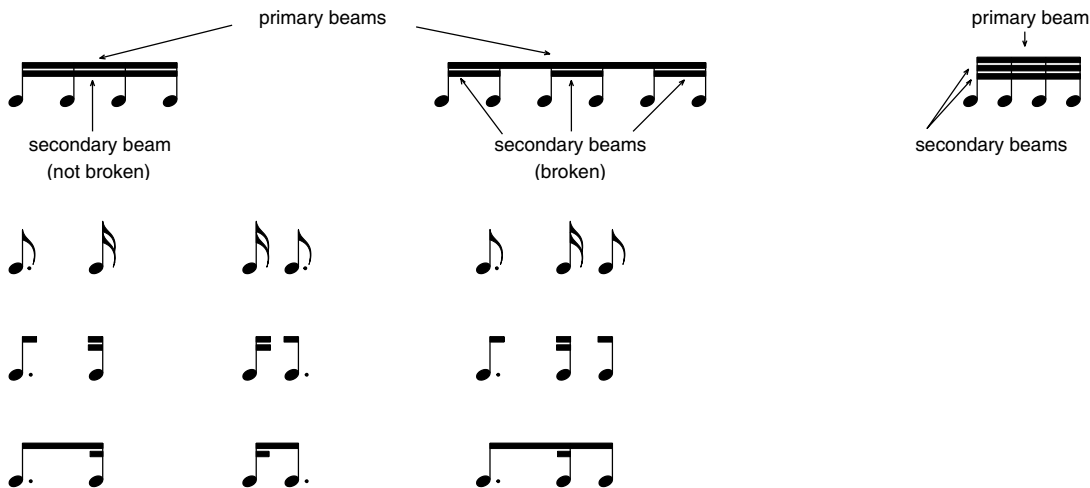
Fig. 103 Transforming flags into beams



The beam of the first flags of the note figures is called *primary beam*. It links by definition all the notes of the group and is never broken (all the notes of the group have at least one beam).

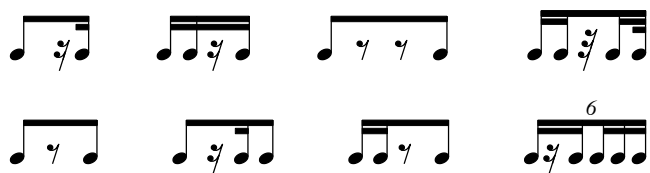
The other beams are called *secondary beams*. They can be broken or not. If a flag has no equivalent in the neighboring notes, it will not be linked to these notes. It will remain attached to its own note and will have a length equal to that of a notehead.

Fig. 104 Primary and secondary beams



The group of linked signs may contain rests, but these will not be linked. Moreover, these rests are always inside the group, never at the ends.

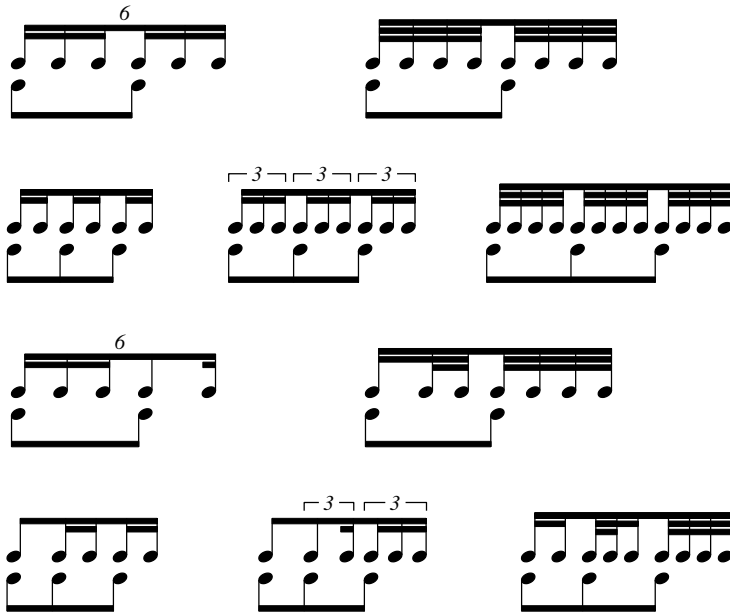
Fig. 105 Beams and rests



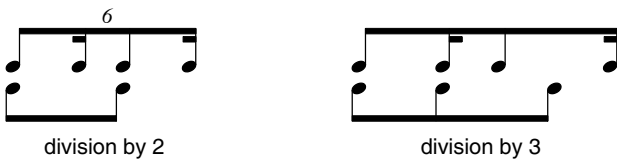
As we have seen, secondary beams can be broken, creating subgroups of notes that emphasize the primary division of the group.

Fig. 106 Rhythmic subgroups

The main primary divisions are 2 and 3. Rhythmic subgroups can be unequal.



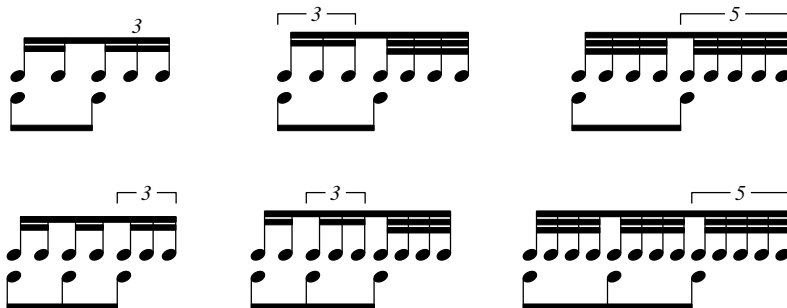
The notation principles for the subgroups are the same as for the main group: the beams always go towards the inside of the group. The broken beams direction within the group matters for the emphasis of the primary division.



division by 2

division by 3

The secondary beams are also broken when the group is made up of rational and irrational¹² divisions, thus making the change in rhythmic flow visible.



12. Definition and notation of irrational divisions, p. 61

B - Beams and beats

The number of notes to be beamed, and therefore the total duration of the group, is not indifferent. The first note of the group, clearly visible and highlighted, must be of significant musical weight, i.e. a strong degree. This strong degree can be the pulse, the groups of notes representing each beat, or it can be an important note or support point of the rhythmic speech (not necessarily coinciding with the pulse!), the groups of notes representing this time the figures of the rhythmic speech.

Fig. 107 Rhythmic group representing beats

Each group has a duration equal to 1 beat, whatever the sign that represents it.

Simple meters	Compound meters

Irregular groups have a duration of one beat when possible. The pulse is then indicated either by the first note of the group or by a rest (the small vertical bars below represent the pulses).

Fig. 108 Rhythmic group representing the figures of the musical speech

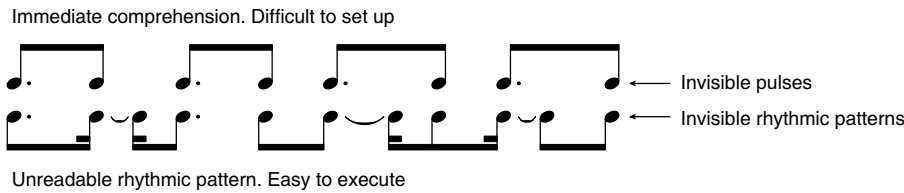
Here the beams group the notes of the same melodic-rhythmic figure. The small vertical bar represents here the strong degrees of the rhythmic speech, its points of articulation. Below left, we have a rhythmic notation from the point of view of musical figures, then the same theme notated from the point of view of beats, making these musical figures less readable.

These two possibilities of notation have their own pros and cons:

- ▶ the grouping of notes by beat facilitates the execution by bringing out the pulses well, a fundamental element for the rhythmic setting. On the other hand, the structure and meaning of the rhythmic speech tend to disappear when its strong degrees do not coincide with the pulses,
- ▶ the grouping of the notes by rhythmic patterns makes immediately readable the rhythmic frame of the speech, but to the detriment of the readability of the pulses.

One is thus faced with the alternative: choose rather comprehension (grouping by figure) or execution (grouping by beat).

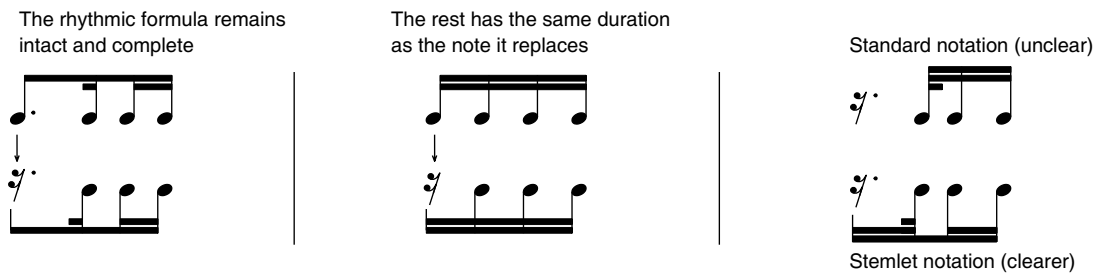
Fig. 109 The two beaming principles



C - Stemlets notation

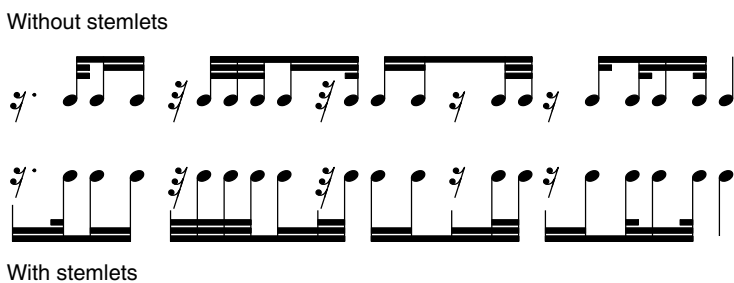
Used especially in complex rhythmic contexts, there is a beaming method that integrates the rests into the note group. Notes and rests are beamed as if they were notes, and then the desired notehead is replaced by the rest sign of equivalent duration (the little stem of the rest thus created is called *stemlet*). This method of integrating rests into the note group makes complex rhythmic structures much more readable.

Fig. 110 Transformation of standard notation into stemlet notation



This method makes it possible to beam groups of one beat duration (or any other duration) regardless of the combination of notes and rests in these groups. The readability can then be greatly improved in the case of complex rhythms.

Fig. 111 Standard notation vs. stemlet notation



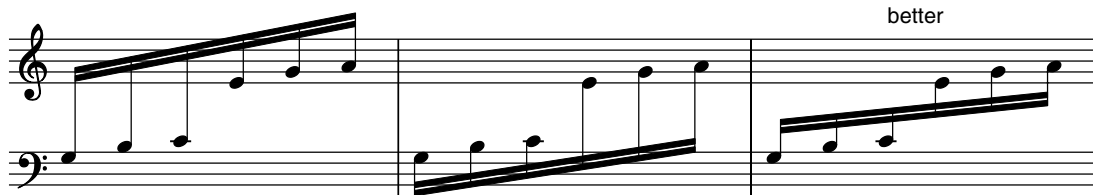
D - Beams connecting two staves

The same group of notes can be spread over two different staves as in piano scores. Several possibilities exist as to the vertical position of the group beam:

- ▶ on the first staff above the note group,
- ▶ on the second staff below the group of notes,
- ▶ finally, between the two staves.

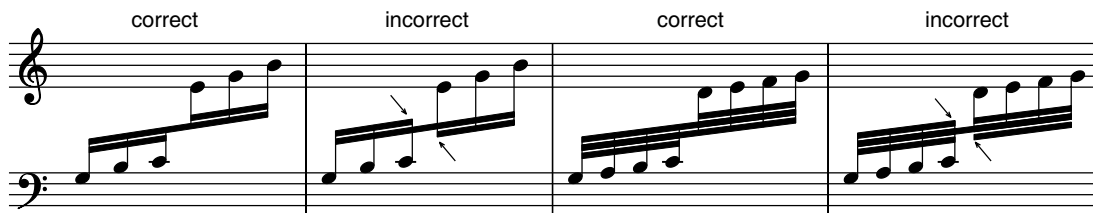
This last case is preferred, avoiding collisions between the beam and the staff lines, thus increasing readability.

Fig. 112 Vertical positions of beams on two staves

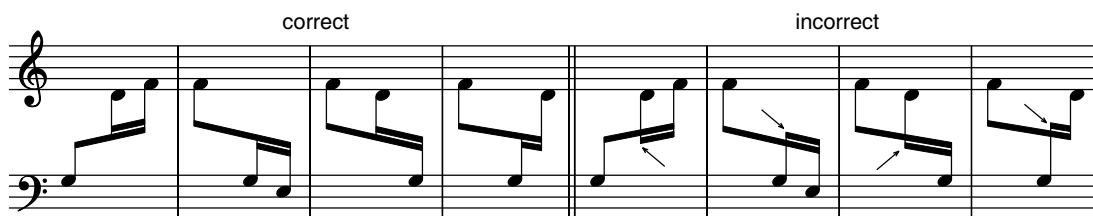


If the group of notes contains broken secondary beams, the primary beam will be above or below them, but never in the middle, so as to avoid the appearance of additional beam “corners” (indicated below by arrows).

Fig. 113 Primary and secondary beams notation



Similarly, when the group of notes is composed of different rhythmic values, the secondary beams are placed so as to avoid these corners with the primary beam.



5

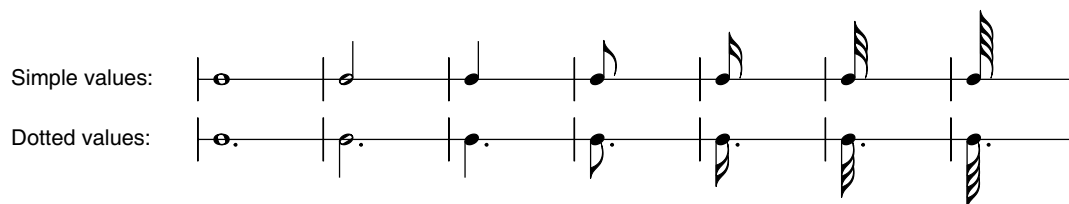
Irrational rhythms

The notation of irrational divisions, which can become extremely complex, often suffers from incoherence and contradiction, adding to the lack of notation readability. We will propose here a logical notation principle that applies to all rhythmic contexts, which will restore coherence to rhythmic notation. Irrational divisions greatly increase the variety of flow and the enrichment of rhythmic structures.

A - Definition

As we have seen above, we have two series of duration signs: the simple value signs and the dotted value signs. The signs of these two series are naturally divisible by 2 and by 3 respectively. In other words, their division can be notated with signs of simple value (ex: $\frac{1}{2}$, $\frac{1}{3}$, etc.). These divisions are called *rational divisions*.

Fig. 114 The two sets of duration signs



On the other hand, all the other divisions of these signs, which cannot be notated as such with signs of simple value, are called *irrational divisions* (ex: $\frac{1}{3}$, $\frac{1}{5}$, $\frac{1}{4}$, $\frac{1}{5}$, etc.).

B - Notation principles

The notation of an irrational division consists of two elements:

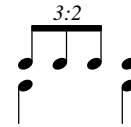
- ▶ the appropriate duration sign, the principle being to take the sign of the nearest lower rational division,
- ▶ the indication of type A:B (B being sometimes implied) placed on the side of the beams (or flags).

Example of the division of a quarter note by 3:

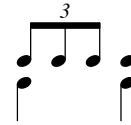
► for the quarter note, the rational lower division closest to 3 is 2, notated by eighth notes. So we have the following notation opposite:



► but here the eighth notes are no longer worth $\frac{1}{2}$ but $\frac{1}{3}$ of a quarter note. We must therefore complete the notation with the indication 3:2 meaning 3 eighth notes in the time (over the duration) of 2 eighth notes. This gives the final notation:



► for common irrational divisions, the indication is often abbreviated:



Example of the division of a dotted quarter note by 5:

► for the dotted quarter note, the nearest lower rational division to 5 is 3, notated with eighth notes. So we have the following notation:



► these eighth notes are no longer worth $\frac{1}{3}$, but rather $\frac{1}{5}$ of dotted quarter note. So we complete the notation with the indication 5:3 which means 5 eighth notes in the time of 3 eighth notes. The final notation is as follows:



These notation principles obviously also apply to rests, as the latter can replace note signs of equivalent duration.

Fig. 115 Irrational divisions with rests



Each irrational division has a name which also consists of two parts:

- a name indicating the number of irrational divisions,
- the name of the sign used in the notation.

Fig. 116 Irrational divisions name

Division number	Name of the duration sign
2	Duplet
3	Triplet
4	Quadruplet
5	Quintuplet
6	Sextuplet
7	Septuplet
8	Octuplet
9	Nonuplet
10	Decuplet
11	Undecuplet
12	Dodecuplet

We can construct the table of the main divisions, rational and irrational, shown below. It is clear from this table that the duration of the irrational divisions is always smaller than the duration of the rational division of the same sign, and always greater than that of the following sign. This can be summarized by the following formula:

Duration simple sign > Duration irrational sign > Duration next sign (ex : ♩ > ♩^{3/2} > ♪)

It logically follows that in the indicator A:B, A is always greater than B, and always smaller than Bx2. We obtain the following other formula: **B < A < B x 2**

Fig. 117 Table of the main rhythmic divisions

Division number	Simple value divisions	Dotted value divisions
2		
3		
4		
5		
6		
7		
8		
9		
10		

* nearest lower rational division

The dotted value signs divide naturally by 3 with simple values, but can also divide by 2 with dotted values (e.g.: ♩./2 = ♪, ♩./2 = ♪, etc.). One can therefore use this notation principle for divisions by 2, 4, 8... of dotted values, instead of the irrational division notation.

Fig. 118 Alternative notation for the division of pointed values

Division number	Irrational divisions notation	Equivalent alternative notation
2		
4		
8		

C - Principle for determining the sign

From the formula on the previous page, we can define a very simple and universal procedure (applying to all divisions of any duration) to determine the correct duration sign of an irrational division. By expressing in numerical form the duration of the different simple and dotted values, and by giving arbitrarily the value 1 to the quarter note (the simplest case), we obtain the following table:

Fig. 119 Numerical value of the main durations

Simple values:	4	$\frac{a:b}{2}$	$\frac{a:b}{2}$	$\frac{a:b}{4}$	$\frac{a:b}{4}$	$\frac{a:b}{8}$	$\frac{a:b}{8}$	$\frac{a:b}{16}$	$\frac{a:b}{16}$
Dotted values:	6	3	1.5	0.75	0.37	0.18	0.09		

The numerical values in the table express the rational divisions durations of the simple and dotted values (with the quarter note set to 1). Thus, all irrational divisions will have durations between these values. To determine the correct duration sign, we then simply divide the duration of the whole irrational group by the number of irrational divisions.

Fig. 120 Quarter note divided by 3


The duration of the irrational group = $\text{quarter note} = 1$
 $1 / 3 = 0.33$

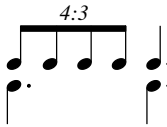
As: $0.5 > 0.33 > 0.25$
 The correct duration sign is therefore:

So:

Fig. 121 Dotted quarter note divided by 4

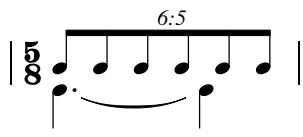
The duration of the irrational group = $\text{♩.} = 1.5$
 $1.5 / 4 = 0.37$

As: $0.5 > 0.37 > 0.25$
 The correct duration sign is therefore: 

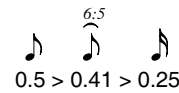
So: 

The same principle is used for more complex situations, especially when the irrational group covers a duration that cannot be expressed by a single simple or dotted sign, such as a duration of 5 eighth notes, 7 eighth notes (or any other unit).

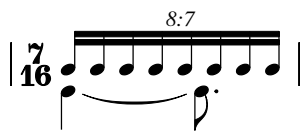
Fig. 122 Complex irrational groups



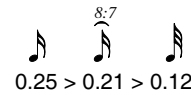
Group duration = 2.5
 $2.5 / 6 = 0.41$



$0.5 > 0.41 > 0.25$



Group duration = 1.75
 $1.75 / 8 = 0.21$

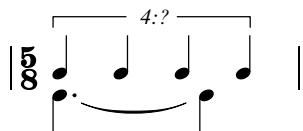


$0.25 > 0.21 > 0.12$

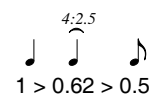
We have seen that in the indication A:B, A and B refer to the same sign. For example, 3:2 means 3 quarter notes in the time of 2 quarter notes, 3 eighth notes in the time of 2 eighth notes, etc. However, in some situations, A and B refer to different signs.

Fig. 123 Example: 5 eighth notes divided by 4

According to the principle stated above, the correct duration sign is the quarter note.

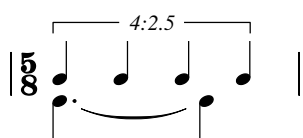
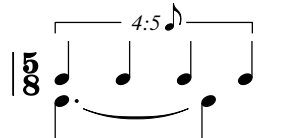


Group duration = 2.5
 $2.5 / 4 = 0.62$



$1 > 0.62 > 0.5$

If we use the same sign for A and B, we get the indication 4:2.5 (below left). For a clearer notation, we will take for B, a sign that can be expressed by an integer, here the eighth note, which gives the notation below on the right:

D - Consistency of rhythmic notation

The principle of notation adopted here makes it possible to keep a complete consistency of the rhythmic notation. The relative duration of signs is respected: just as a quarter note is worth 2 eighth notes ($\text{♩} = 2 \text{♩}$), a quarter note triplet is worth 2 eighth note triplets ($\text{♩} = 2 \text{♩}$), a quarter note quintuplet is worth 2 eighth note quintuplets ($\text{♩} = 2 \text{♩}$), etc. Whatever the indicator (A:B), which can be mentally eliminated, we find the relative duration of the signs established at the beginning of this section.

Fig. 124 Constancy of relative durations

Figure 124 illustrates the consistency of relative durations across three time signatures: 2/4, 4/4, and 8/4. The examples are arranged in a 4x3 grid. Each row represents a different rhythmic pattern, and each column represents a different time signature. Brackets and numbers above the notes indicate the relative duration of the groups.

- Row 1:** A triplet of quarter notes. In 2/4, it spans two beats. In 4/4, it spans two beats. In 8/4, it spans two beats.
- Row 2:** Two groups of eighth note triplets. In 2/4, each group spans one beat. In 4/4, each group spans one beat. In 8/4, each group spans one beat.
- Row 3:** Four groups of eighth note triplets. In 2/4, each group spans one beat. In 4/4, each group spans one beat. In 8/4, each group spans one beat.
- Row 4:** Four groups of sixteenth note sextuplets. In 2/4, each group spans one beat. In 4/4, each group spans one beat. In 8/4, each group spans one beat.

Similarly, the notation of divisions, rational or irrational, is independent of the sign used to express beat in the various meters.







Fig. 125 Constancy of rhythmic notation in relation to the beat value

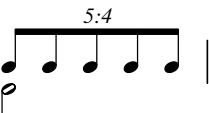
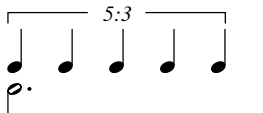


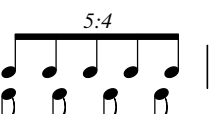

Notation of irrational divisions in measures with quarter note beat and dotted quarter note beat. These two measures, in spite of a different beat duration, have exactly the same duration in number of quarter notes. The same irrational division of these two measures will logically be represented by the same sign.

Figure 125 illustrates the notation of irrational divisions in measures with quarter note beat and dotted quarter note beat. The examples are arranged in a 3x2 grid. Each row represents a different irrational division, and each column represents a different time signature. Brackets and numbers above the notes indicate the irrational division.



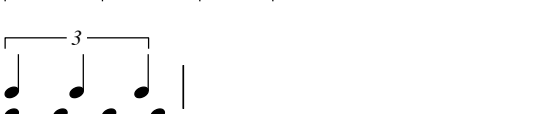
- Row 1:** A 4:3 division. In 3/4, it spans one beat. In 6/8, it spans one beat.
- Row 2:** A 5:3 division. In 3/4, it spans one beat. In 6/8, it spans one beat.
- Row 3:** A 7:6 division. In 3/4, it spans one beat. In 6/8, it spans one beat.

Notation of irrational divisions in measures with equal duration and different number of beats. Here again, the notation of rational or irrational divisions of a given duration is independent of the beat value. It is only a function of this duration expressed in number of quarter notes.

dividing 4 ♩ by 8	dividing 3 ♩ by 6
$\frac{1}{1}$ 	$\frac{3}{4}$ 
$\frac{2}{2}$ 	$\frac{6}{8}$ 
$\frac{4}{4}$ 	$\frac{12}{16}$ 

dividing 2 ♩ by 5	dividing 3 ♩ by 5
$\frac{1}{2}$ 	$\frac{3}{4}$ 
$\frac{2}{4}$ 	$\frac{6}{8}$ 
$\frac{4}{8}$ 	$\frac{12}{16}$ 

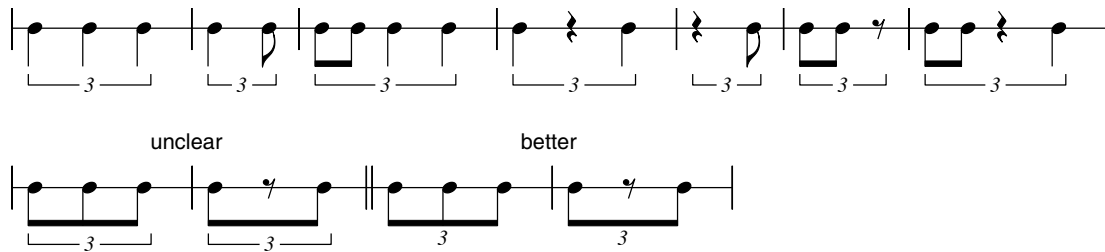
Notation of irrational divisions in measures with equal number of beats but different relative duration, thus expressed by different signs.

$\frac{4}{2}$ 
$\frac{4}{4}$ 
$\frac{4}{8}$ 

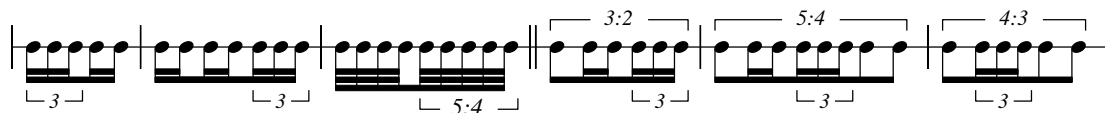
E - “Beam” brackets

“Beam” brackets have the same function as beams: they group different note and/or rest signs together. Beam brackets are used when the note group is not fully beamed, i.e. when there is no primary beam. When the group of notes does not have a secondary beam, the indication A:B (or A alone) is sufficient.

Fig. 126 Notation of beam brackets



Beam brackets are also used for irrational subgroups within rational or irrational note groups, even if these have a primary beam.



In combination with other signs, e.g. phrasing signs, the notation and position of beam brackets follows certain rules.

Fig. 127 Rules for notating beam brackets

Notate a square bracket rather than a curve one so as not to confuse it with a phrasing slur.



Place the bracket on the stems side to leave room for possible articulation marks. When the group has stems in both directions, place the bracket in the most readable place.



Place the bracket above the staff when the staff has text (one voice lyrics)



The right end of the bracket shows approximately the duration of the last note.

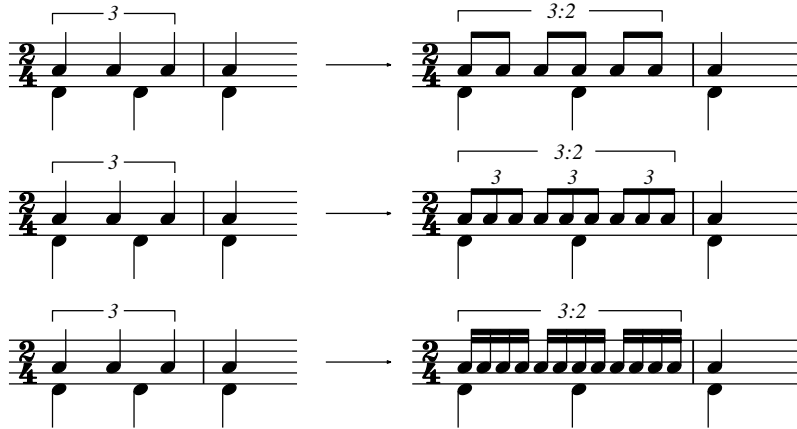


F - Subdivisions of irrational divisions

Any division, irrational or not, can be subdivided. These irrational divisions are subdivided according to the same principle as rational divisions, i.e. by using the relative duration of the simple or dotted signs.

Fig. 128 Subdivisions of irrational rhythms

1. Like the quarter note, the quarter note triplet divided by 2 is notated with eighth notes,
2. Divided by 3, it is notated with eighth note triplets,
3. Finally, divided by 4, it is notated with sixteenth notes.



The same irrational division can have a mixture of rational and irrational subgroups.

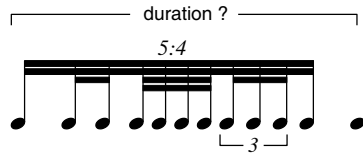
Fig. 129 Mixing rational and irrational subdivisions



When irrational divisions are heterogeneously subdivided, as in the previous figures, the multiplicity of different signs tends to obscure the primary, main division, making it more difficult to read the duration it covers and its fundamental division.

Fig. 130 Heterogeneous subdivisions of irrational rhythms

Since the indication 5:4 does not specify which sign should be played 5 times in the time of 4, the figure below does not clearly represent its total duration and fundamental division.



To clarify the notation, one may choose between two possibilities, each indicating the fundamental irrational division:

- ▶ type notation A sign : sign (ex: 5 eighth notes : quarter note, so 5 eighth notes in the duration of a quarter note),
- ▶ type notation A sign : B sign (ex: 5 eighth notes : 4 eighth notes, so 5 eighth notes in the duration of 4 eighth notes).

Fig. 131 Fundamental division and heterogeneous subdivisions of irrational rhythms

1. The signs of the irrational division are more or less hidden by the subdivisions. The indications above the rhythmic figures, however, express the fundamental divisions.
2. In the 2nd line, by breaking down the notation into 2 separate levels, the fundamental irrational division is again visible.

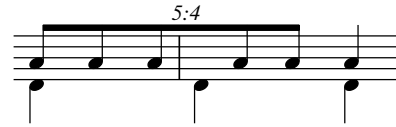


G - Irrational divisions over 2 measures

A rhythmic group can start in one measure and end in the next measure. This group then spans the barline. Normally, the sum of the signs durations of the measure should be equal to the total duration of the measure indicated by its time signature. However, in this complex rhythmic context, two options are possible: to respect or not to respect this rule.

Fig. 132 Notation respecting the rule

Here, 2 beats are divided by 5, one beat in each measure (the total duration of the measure is irrelevant here). The figure is equally divided in the 2 measures.



We then add a note on the 1st beat of the 2nd measure, i.e. at the exact half of the group of notes. This note is therefore located after the barline.



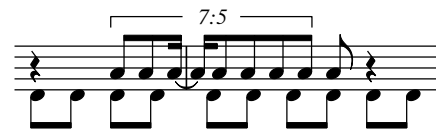
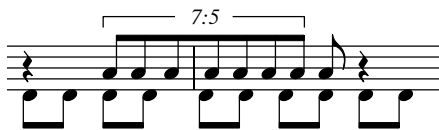
Then the irrational group is divided into two equal parts, i.e. on the note added in the previous step. This added note is then tied because it is not played. The 2 parts are each 1 beat long: $0.4 + 0.4 + 0.2 = 1$ beat.



Once the irrational rhythm is notated, it is easy to complete the two measures with the necessary signs to express its total duration. This rhythmic notation is however much less readable and can only be used for groups of notes covering whole beats on either side of the barline, the added tied note then falling exactly at the halfway point of the group, i.e. on the 1st beat of the following bar.

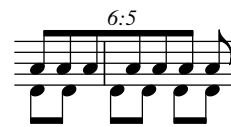
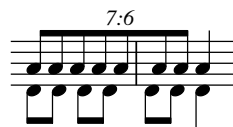
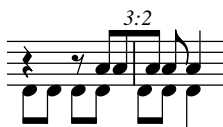
Fig. 133 Impossible notation with respect to the rule

The irrational division of 7 eighth notes in the time of 5 eighth note (2.5 beats) is impossible to notate according to the previous principle. The 1st part is a little shorter than 1 beat it should equal: $0.357 + 0.357 + 0.178 = 0.892$ beat. The 2nd part is a little longer than 1.5 beats: $0.178 + (4 \times 0.357) = 1.606$ beats.



This first option has the double disadvantage of being not very readable and of only concerning a very limited number of irrational groups. The second option consists in not respecting the above rule and writing the irrational groups without taking the barline into account. The rhythmic notation of these groups remains intact and concerns all possible irrational divisions. This option is by far the most recommended.

Fig. 134 Notation without respecting the rule



6

Rhythmic abbreviations


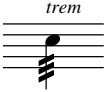



Repetition is a major process in the construction of a piece, whether it is a question of notes, groups of notes, measures, cycles, bar structures, i.e. elements on different scales. A piece is often constituted by a number, sometimes reduced, of themes which will be repeated either identically or with slight variations. The use of rhythmic abbreviations, which indicate the repeated portions, not only increases the readability of the score by lightening the notation, but also better brings out the structure and architecture of the piece.

A - Tremolos

In order not to overload the notation, various rhythmic abbreviation signs are frequently used when possible. One of these signs, the tremolo, is used when the same note is repeated or when two notes alternate. The tremolo can be rhythmically defined or not. The following table shows the different types of tremolo¹³.

13. See melodic tremolos, p. 30

Fig. 135 Table of different tremolos

Tremolos with defined rhythm	Tremolos with undefined rhythm
 <p>The note indicates the duration of the tremolo. The number of bars indicates the rhythm of the repetition per beat, here the thirty-second note.</p>	 <p>Same principle as for the tremolo with a defined rhythm. But here, the trem indication means to repeat as fast as possible.</p>
 <p>The notes indicates the duration of the tremolo. The number of bars indicates the rhythm of the alternation, here the sixteenth note.</p>	 <p>Same principle as for the tremolo with a defined rhythm. But here, the trem indication means to alternate as fast as possible. (interval between the 2 notes > M2)</p>
	 <p>The note indicates the duration of the tremolo. The trem indication means as fast as possible. The melodic interval is a second (Maj or min).</p>

There are two types of tremolos with a defined rhythm: the repetition of a note or the alternation of two notes. The duration and rhythm of this repetition or alternation are expressed by appropriate signs, as defined in the table above.

Fig. 136 Note repetition

Abbreviated notation

Full notation

Example of note repetition in different rhythms and melodic lines:

Abbreviated notation

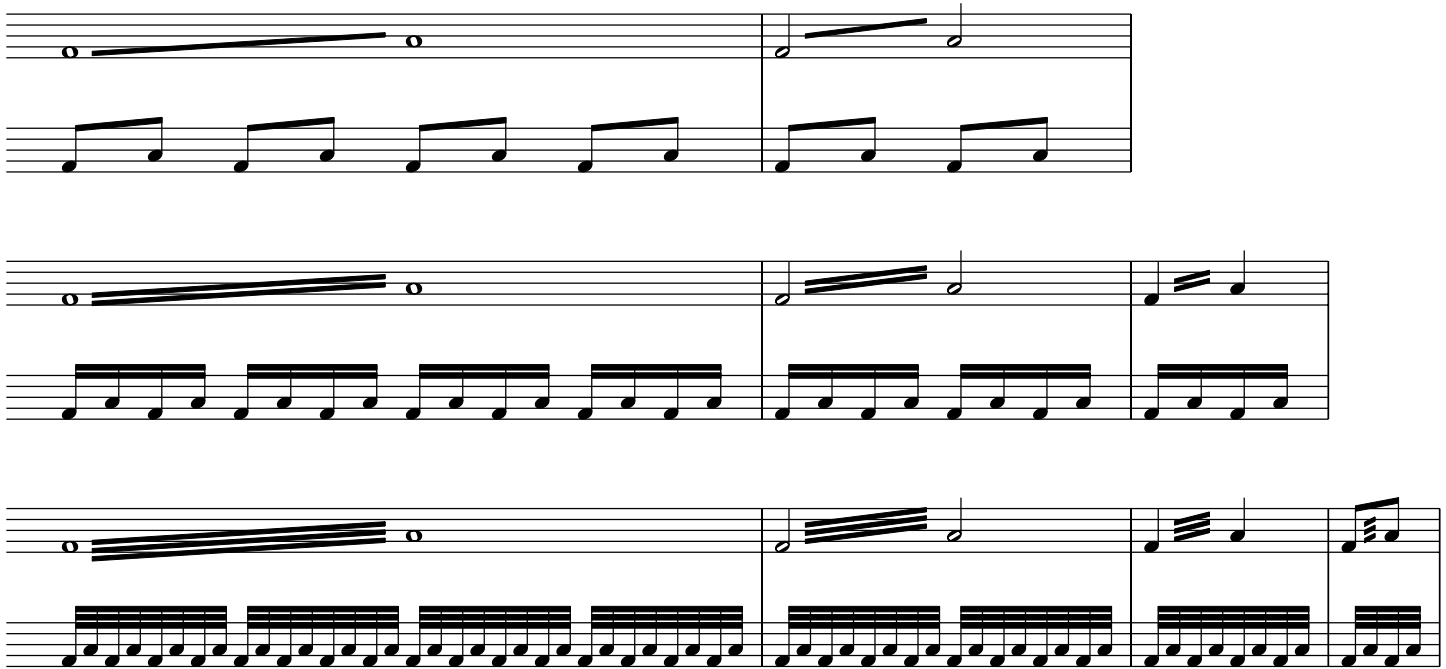
Full notation

The second type of tremolo with a defined rhythm, the alternation of 2 notes is represented by a specific notation as in the following figure:



Here the 2 notes each indicate the total duration of the tremolo, which brings the sum of their duration to twice the duration of the tremolo; “anomaly” of notation allowing to distinguish it from the standard rhythmic notation. The oblique beams have the same meaning as the standard beams: one beam means eighth note alternation, two beams, sixteenth note alternation, etc. These beams are not attached to the note stems.

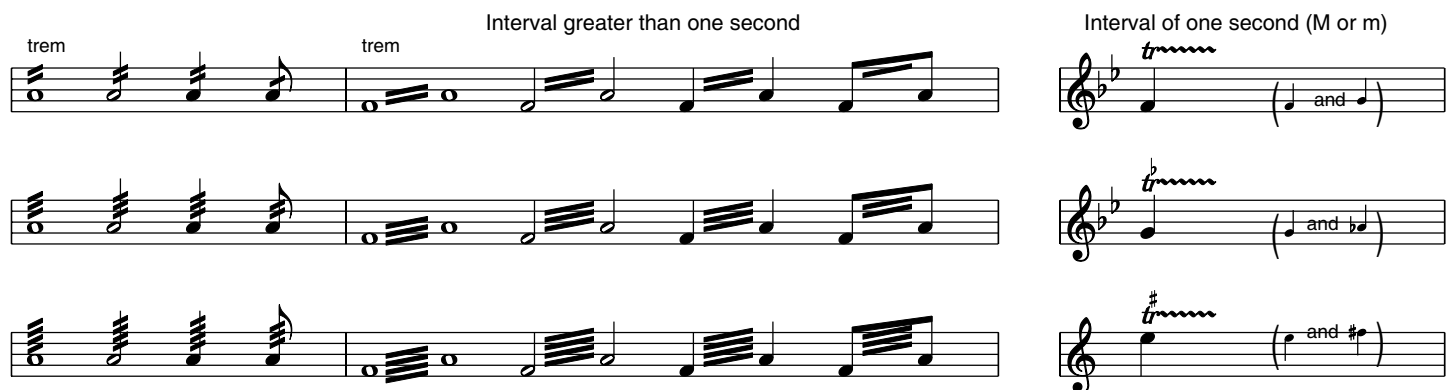
Fig. 137 Alternating two notes



As shown in the table in figure 135, the second family of tremolos contains the undefined rhythm tremolos. They consist of either a repetition of notes or an alternation of two notes whose melodic interval is one second (major or minor) or more. These tremolos are rather thought as ornaments, to be executed as fast as possible. But this speed of execution is a function of the main tempo and will be translated into a variable number of beams in the notation.

Fig. 138 The different rhythmic ornaments

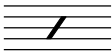




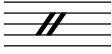














The first line represents the notation of ornaments for fast tempos, the second line for medium tempos and the third for slow tempos. The notation of the trills (below right) is indifferent to the speed of the tempo.



B - Rhythmic abbreviations

The other rhythmic abbreviation signs are signs that indicate to repeat the content of the previous beat, the previous measure or the two previous measures. These simple signs greatly lighten the notation and allow the musical structure of a theme and its variations to be better visualized.

Fig. 139 Table of rhythmic abbreviations

Signs	Meanings	Examples	
		Abbreviated notation	Full notation
	Replay the previous beat consisting of a single rhythmic value (here: quarter or eighth note).		
			
	Ditto for sixteenth note rhythmic values (the 2 slashes expressing the 2 beams).		
	Ditto for thirty-second note rhythmic value.		
	Ditto for a beat made of different rhythmic values.		
	Repeat the previous measure.		
	Repeat the previous 2 measures.		

Specific notations

■ 1. Chord chart notation	79
■ 2. Guitar notation	83
■ 3. Bass notation	89
■ 4. Drums notation	91

This last section deals with musical signs that apply only to an instrument or a family of instruments. These signs are of two kinds: standard signs, but whose meaning is diverted and adapted to the context of the instrument; and custom signs that meet specific notation needs.

Instruments are sound-emitting devices, independently of the rhythmic form of these sounds. Rhythmic notation is therefore universal, applying indifferently to any instrument. The specific notation will therefore concern rather the melodic side, and more precisely the techniques of playing effects (the different modes of sound production), specific to each type of instrument.

The general musical domain approached in the different methods that will be proposed is Jazz/Rock, in its broadest sense. This field, which commonly practices the interpretation and improvisation of themes, regularly uses a specific notation, a shorthand of the harmonic frame, leaving the formatting to the appreciation of the performer. This shorthand, more or less concise, uses signs and conventions of very simple and effective notation.

The instruments discussed here are the Guitar, the Bass and the Drums. The first two use a set of playing effects, some of which are common, and which require appropriate signs: slurs executed with the hammer-on and pull-off techniques, vibratos with the finger or with the vibrato bar, note inflections with the bends and releases, etc. Finally, Drums notation (as with other instruments whose sounds have undefined pitches) requires a set of standard and custom signs. These different signs will have the function of representing the element to be struck, not the pitch of the notes. To these signs (noteheads) is applied the usual, universal rhythmic notation. To avoid any ambiguity, the nomenclature of these signs must be specified.

1 Chord chart notation

Chord chart, the harmonic shorthand of a piece, are mainly used in the context of improvised music, especially Jazz. The piece, reduced to its harmonic frame, allows a great freedom of improvisation on this harmonic skeleton, this one being able to be strongly reshaped by enhancements or alterations of chords, substitutions or other reharmonization techniques. On the other hand, the rhythmic and meter frames in this context are often predefined, preformed, and function as a stylistic a priori characterizing the different eras of Jazz.

A - Usefulness of chord chart

One frequently encounters (in the Jazz and Rock tradition) notations in the form of chord chart, a kind of shorthand for the harmonic structure of a piece. This notation allows to visualize at a glance the harmonic frame of the piece, the bar structures (main sections) composing it, the chord progression of each of them, without going into the details of its harmonic and rhythmic shaping.

Particularly useful for improvised music, chord chart can leave a certain freedom of interpretation: choice of the octave register of the chords, of their state (fundamental or inverted), of the enrichment or not by extensions (9th, 11th or 13th), of the rhythmic structure of their sequence.

The notation of chord chart can be presented in various forms, more or less concise, therefore more or less rich in musical information, each with their pros and cons. We will distinguish here three main forms of notation, from the most concise to the most detailed: notation in grid form, notation on a line and notation on a staff.

B - Grid notation

The simplest form of notation, it is presented in a set of cells, each representing a measure (of 4 beats essentially), and each line of cells representing a bar structure of the piece (most often 8 measures, so 8 cells). Inside the cells, the chord(s) of the measure are notated by their symbols.

Fig. 140 Chord grid for an 8 bars structure

Dm7	G7	C7M	F7M	Bm7 \flat 5	E7	Am7	Am7
-----	----	-----	-----	---------------	----	-----	-----

Long bar structures, of 12 measures such as Blues for example, can be divided into sub-sections, further improving readability.

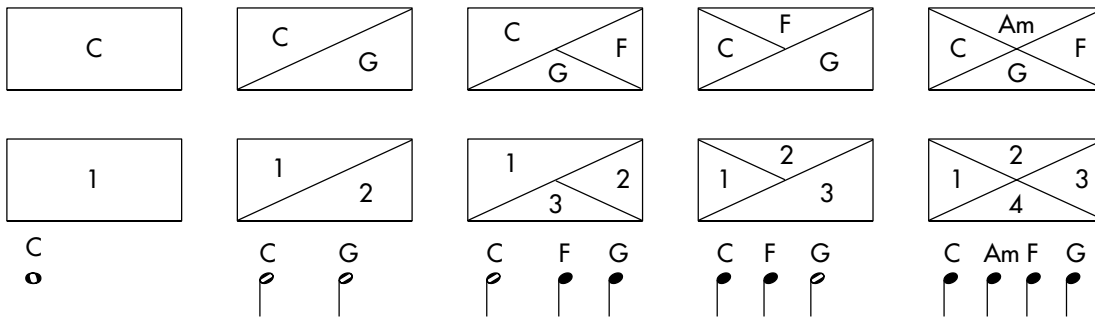
Fig. 141 Chord grid of a Blues in F

F7	Bb7	F7	F7
Bb7	Bdim7	F7	F7
Gm7	C7	F7	F7

To notate several chords per measure (4 chords maximum), the cells are divided into 2, 3 or 4 parts which are read clockwise.

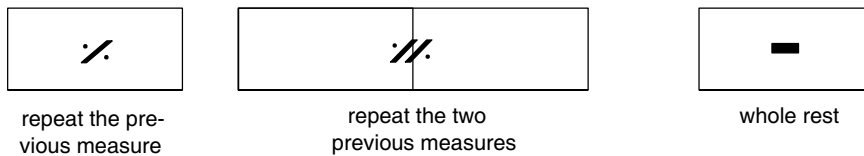
Fig. 142 Notation of 1, 2, 3 or 4 chords per measure

The first line shows the possible number of chords per measure,
The second line shows the order in which the chords are read,
The third line is the rhythmic equivalence in standard notation.



The notation can be further simplified by using repetition signs. The lack of a chord in a measure (during breaks for example) is notated by a rest (a whole rest).

Fig. 143 Repetition signs in chord grids



for example:

C7	F7	$\diagup\diagup$	$\diagup\diagup$	G7	\diagup
----	----	------------------	------------------	----	-----------

rather than:

C7	F7	C7	F7	C7	F7	G7	G7
----	----	----	----	----	----	----	----

C - One-line notation

In all cases, the grid notation, which is very readable, is reduced to the harmonic skeleton of the piece, without any indication of the state (fundamental or reversed) of the chords, nor of their rhythmic form. More precise rhythmically than the previous notation, the one-line notation consists in notating the chords in their respective measures (delimited by a barline), a slash symbolizing each beat. Various meters are then possible and the order of the chords is no longer ambiguous as it sometimes is in grid notation.

Fig. 144 Notation of 1, 2, 3 or 4 chords per measure

Notation

C / / /	C / G /	C / F G	C F G /	C Am F G
○	♩ ♩	♩ ♩ ♩	♩ ♩ ♩	♩ ♩ ♩ ♩

Rhythmic equivalence

Notation

C / /	C / G	C G /	C F G
♩.	♩ ♩	♩ ♩	♩ ♩ ♩

Rhythmic equivalence

Here again, the repetition signs lighten the notation. In addition, the presence of barlines allows the use of repeat signs.

Fig. 145 Repetition and ending signs

$\frac{4}{4}$ C7 / / / F7 / / /	$\overset{2}{\text{trill}}$		$\overset{2}{\text{trill}}$	G7 / / /	trill
$\frac{4}{4}$ Dm7 / / / G7 / / /	1.		2.		
	C7M / A7 / :		C7M / / /		

D - Notation on one staff

Closer to the standard notation, the notation on one staff allows a greater precision, especially rhythmically. Two cases can be distinguished:

- ▶ 1. As in line notation, beats are represented by slashes. Chords are then notated above the staff.

Fig. 146 Notation on one staff

The image shows a musical staff in 4/4 time. Above the staff, the chords C7, F7, and G7 are written. The notation consists of slashes representing beats, with bar lines separating measures. The first measure contains C7, the second F7, and the third G7. The G7 measure includes a second ending sign (trill) and a first ending sign (trill). The staff ends with a double bar line.

Here, chord inversions can be notated, no longer being confused with the slash representing the beats.

Fig. 147 Chord inversions notation

Musical notation for Fig. 147. It shows a single staff in 4/4 time with a treble clef. The notation consists of slashes on a staff to represent chords. Above the staff, the chords are labeled: Dm7, G7/D, 1. C7M, A7/E, and 2. C7M. The first two measures are separated by a bar line, and the last two measures are separated by a repeat sign.

- ▶ 2. The rhythmic structure of the chord progression, without its possible developments, is notated on the score, the slash symbolizing the chords, their different durations being notated by the usual signs.

Fig. 148 Notation of the chord chart rhythmic structure

Musical notation for Fig. 148. It shows a single staff in 4/4 time with a treble clef. The notation includes notes and rests to represent the rhythmic structure of the chords. Above the staff, the chords are labeled: Dm7, G7, 1. C7M, A7, and 2. C7M. The first two measures are separated by a bar line, and the last two measures are separated by a repeat sign.

Various additional indications can be added, such as key signature, tempo, interpretation, etc., as required.

Fig. 149 Chord chart detailed notation

Musical notation for Fig. 149. It shows a single staff in 4/4 time with a treble clef. Above the staff, there are additional indications: Key: Bb Maj, tempo marking ♩ = 120, and a triplet symbol. The chords are labeled: Cm7, F7, 1. Bb7M, G7, and 2. Bb7M. The first two measures are separated by a bar line, and the last two measures are separated by a repeat sign.

2

Guitar notation

The Guitar is an instrument widely present in our current music. The organization of the pitches, unlike the Piano (linear on all its range), is complex, unfolding gradually along the neck (by "steps" of semitone) and more abruptly transversally, variable according to the tuning. Because the same note can be found in several places on the neck, notation must often specify its position. The Guitar also offers many different techniques for executing a note, both in the right and left hand, techniques that must also be specified by various musical signs.

A - Introduction

Like other stringed instruments, the guitar presents a particular difficulty: the same note pitch can most of the time be played at different places on the neck, on different strings. A melody on the score can then be played in multiple ways, but not equivalent from the point of view of ease of execution, timbre, etc. In order to fix the interpretation, one then resorts to appropriate symbols.

In addition, like all other instruments, the guitar allows for numerous playing effects that are unique to it. These are also represented by specific symbols. There are two main forms of guitar notation:

- ▶ single-staff notation, used primarily for the Classical Guitar,
- ▶ notation on a two-staff system, used more in Jazz and Rock.

B - Classical Guitar Notation

Notation of the different voices on the staff

The notation is done on a standard staff, with all the usual signs seen in the two previous sections. Since the guitar is notated in the upper octave, the tenor clef is often used (meaning: the notes sound one octave lower). Most of the time, the staff has two voices superimposed, the low voice being played with the thumb, the high with the other fingers of the hand. Three voices can sometimes share the same staff.

14. The tenor clef p. 14

Fig. 150 Two voices notation

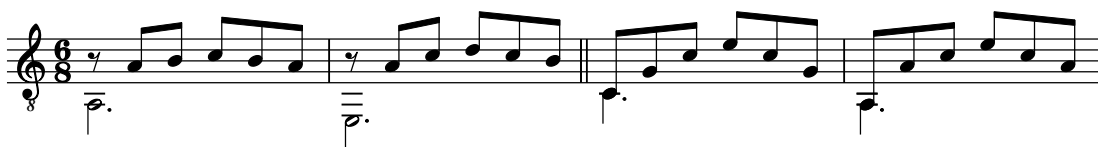
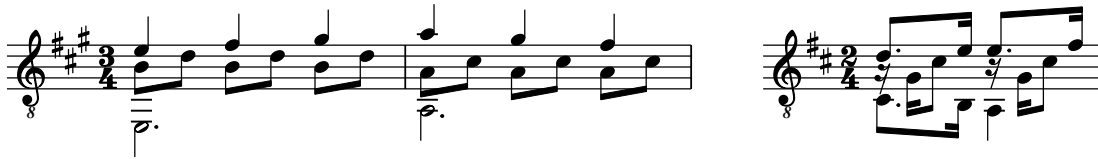


Fig. 151 Three voices notation

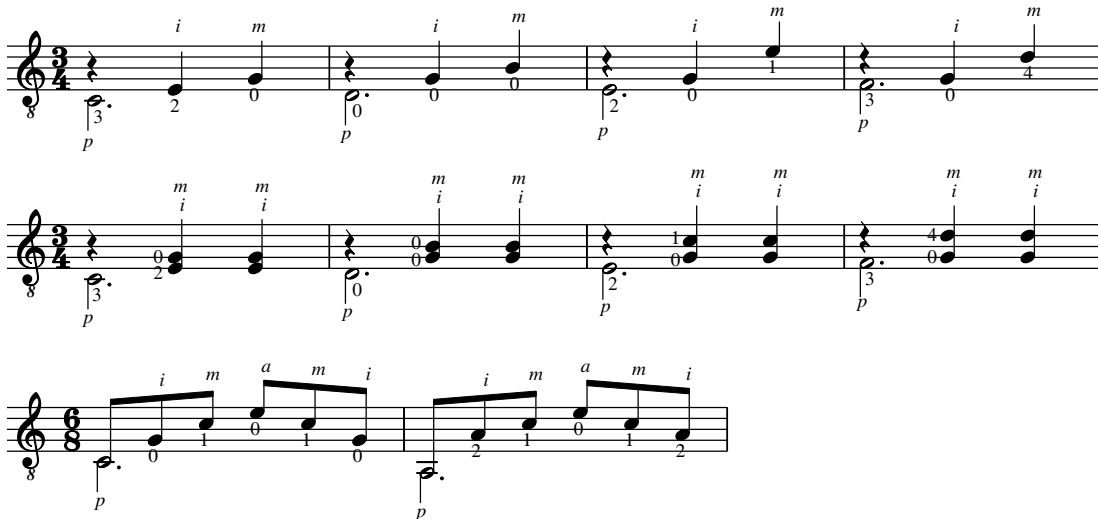


Fingers notation

The fingers of the left hand (for right-handed players), i.e. those fretting the strings, are notated with Arabic numbers: 0 = open string, 1 = index finger, 2 = middle finger, 3 = ring finger and 4 = little finger. Unlike Jazz and Rock, the thumb of this hand is not used in Classical. These numbers will be notated as close as possible to the notehead concerned.

The fingers of the right hand (for right-handed players), i.e. those plucking the strings, are notated by letters, the initials of the finger names in Spanish: p = pulgar (thumb), i = indice (index finger), m = medio (middle finger) and a = anular (ring finger). The little finger is almost never used.

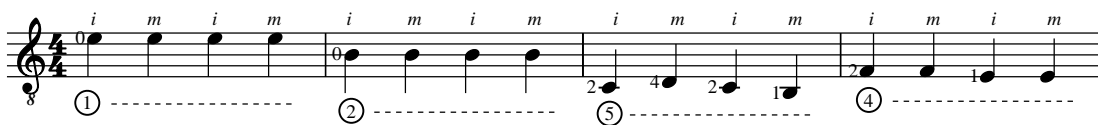
Fig. 152 Fingers notation



Played string notation

Since the same note can frequently be played at different places on different strings, it is useful to specify the string to be plucked. This is done by using an Arabic number (from 1 to 6) surrounded by a circle. The strings of the guitar are numbered from high to low. A dashed line can be added to underline a set of notes played on the same string.

Fig. 153 Strings notation



Hand position notation

To execute a melodic line correctly, the left hand (for right-handed players) must be positioned correctly on the neck. This position is notated by a Roman numeral above the staff, indicating the number of the fret on which the index finger is placed. A solid line often follows the number, delimiting the notes to be played in the same position.

Fig. 154 Hand position notation



Barred notes notation

The execution of several notes, simultaneous or not, sometimes requires a barre (mainly of the index finger) plating a variable number of strings. The notation of this barre differs a little according to the editors and the authors. The barre is notated by a Roman numeral indicating the number of the fret where the barre is located, preceded by the letter C (for “ceja”, nut in Spanish). The C is sometimes replaced by a “B” (for “barre” in English).

Fig. 155 Barres notation



The number of strings to be plated by the barre can be specified. Various notations exist: $\text{C}\frac{1}{2}$ or $\text{C}\frac{1}{2}$ means to bar half the strings (i.e., the 3 high strings). More precisely, an Arabic numeral is also used as an exponent of the Roman numeral, indicating the number of strings.

Fig. 156 Barred strings detailed notation



C - Jazz and Rock Guitar notation

The standard and tablature system

This notation uses two staves, whose aims and notation principles are very different:

- ▶ a standard staff (of 5 lines) on which the usual symbols are notated, whose objective is to represent the *musical characteristics* of the piece: pitch, rhythms, phrasing, key, meters, etc.
- ▶ a staff called tablature representing the flat neck, as seen by the guitarist, the lines (6 essentially) being the strings of the Guitar, high up and low down. The purpose of this staff is to give indications on the *execution*: position of the notes on the neck, hand position and finger movements, playing effects. The notes will be notated by numbers on the lines, indicating the string and the number of the fret to be fretted to produce the note. The TAB clef indicates a tablature staff.

Fig. 157 Representation of standard, tablature notes and on the neck

Three equivalent representations of pitches on a standard staff, tablature staff and neck. The pitches are vertically aligned.

The diagram illustrates three equivalent representations of pitches on a standard staff, tablature staff, and neck. The pitches are vertically aligned.

Standard Staff: Shows a series of notes on a five-line staff, with some notes beamed together.

Tablature Staff: Shows a six-line staff with numbers indicating fret positions. The notes are: 0, 1, 3, 5, 7, 8, 10, 12.

Guitar Neck: Shows a six-string guitar neck with frets I, III, V, VII, VIII, X, and XII. The notes are: E, F, G, A, B, C, D, E.

Although it is the most used, the standard tuning (E A D G B E starting from the low) is far from being the only one used. Many other tunings (so-called “open-tunings”) are possible and are indicated at the beginning of the tablature staff or above the whole system.

Fig. 158 Tuning notation

The diagram shows three different guitar tunings: Dropped D, Open D tuning, and Open G tuning. Each tuning is shown with a tablature staff and a standard staff.

Dropped D: Shows a tablature staff with notes D, A, D, G, B, E. The standard staff shows the notes D, A, D, G, B, E.

Open D tuning: Shows a tablature staff with notes D, A, F#, D, A, D. The standard staff shows the notes D, A, F#, D, A, D.

Open G tuning: Shows a tablature staff with notes D, B, G, D, G, B. The standard staff shows the notes D, B, G, D, G, B.

Fig. 163 Note attack notation

H.	A.H.	P.M.	
T 12	5 (17)	5	X
A			
B			

Natural harmonic: the finger touches the string without pressing, then the string is attacked.

Artificial harmonic: attacking C with the pick and the pad of the thumb.

Palm Mute: the attacked C is partially muted by the pick hand touching the string lightly.

Muffled note: as above, but the hand touches the strings in a direct way, producing a percussive effect.

T	1.	2.	
P			
P			
T 12	5	5	X
A	8	5	
B	5	5	
	Sl.	Sl.	
	5	5	
	5	5	

Tapping: the B is attacked (hit as if by a hammer) by the tip of the middle or index finger of the pick hand.

1. Fast slide (up or down) ending on the indicated fret number.
2. The C attack is followed by a slide (up or down) by gradually releasing the finger pressure.

Slide of the pick by sliding it on the edge.

Fig. 164 Bends and releases notation

full	full	full	full
T 5	5	5	5
A		(5)	5
B			5

C is attacked and immediately followed by a bend (the finger pushes the string transversally towards the lower strings).

C is first bend, then attacked.

C is attacked, bend to D, then released.

C is first bend, attacked, then progressively released.

full	full	full	1 1/2
T 5	5	5	5
A	(5)	(5)	(5)
B			

C is attacked, then bend to D. D is attacked again with the string still bend, then released to C.

C is bend to D, then attacked 3 times, producing a D, and finally released to C.

C is attacked, then the vibrato bar is pressed until it produces A, and finally released to return to C. This effect, like the bends but descending, goes through the pitches continuously.

The strength of the bend, indicated at the top of the arrow, is expressed as a number of tones, with 1 tone notated as full. The following bends are usually encountered: $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, full, $1 \frac{1}{2}$, 2, $2 \frac{1}{2}$

Standard and tablature notation is represented as in the following example:

Fig. 167 Standard and tablature notation on the Bass

Fig. 168 Tablature reduction + rhythm

B - Playing effects notation

Bass playing effects are notated in the same way, obviously, as for the Guitar. The Slap, on the other hand, is a technique specific to the bass and requires special symbols. Slap is a percussive technique, based on two processes of hitting the string with the right hand (for right-handed players):

- ▶ the pop, or popping, notated T (for Thumb), consisting of hitting the strings (especially low ones) with the flat of the thumb,
- ▶ the slap itself, notated P (for Pull), produced by pulling the strings (mainly the treble) with the index or middle finger.

Fig. 169 Slap notation

The two signs T and P are placed on the standard staff, near the notes concerned.

The Slap technique obviously mixes with other playing effects:

4

Drums notation

The Drums is a hybrid instrument, a surprising synthesis of several musical traditions: the military drum (the Snare Drum), African drums and oriental cymbals. Such heterogeneous elements require an adapted notation, and also a nomenclature, the notation not being standardized.

A - Introduction

Contrary to other instruments, drums notation is not standardized. It varies widely between countries, publishers, authors and transcribers. There are two main reasons for this:

1. The Drums is not an instrument that produces sounds with a defined pitch. Although generally situated on the low-high axis, the sounds produced, depending on the diameter of the drums and the tension of the skin, have undefined pitches and vary widely according to the settings. The same applies to cymbals, which are very rich in harmonics that blur the fundamental pitch, depending on the diameter, thickness, size of the dome, etc.
2. The Drums is not made up of a fixed and defined set of elements. Although there is in most cases a common basics, the number of elements is extremely variable and its elements very disparate (from basic drums and cymbals to various percussion instruments: bells, timpani, octoban, roto-tom, woodblock, or other electronic pads...).

These two reasons are a major obstacle to a standardized notation, i.e. one that is unanimously accepted and adequate for all the different drum sets.

B - Notation principle

We can however try to define a notation valid for a basic configuration (the most common and obligatory start for learning), the possible additions of elements being treated on a case by case basis by a specific notation. The definition of a notation must meet several requirements:

- ▶ the sign must be readable, thus of simple form, taking little space on the score,
- ▶ the sign must be as adequate as possible to what it represents, i.e. it must be (almost) self-explanatory,
- ▶ the sign must be consistent with other signs of the same family (graphic similarity),
- ▶ the sign must be unambiguous, i.e. not have two contradictory meanings,
- ▶ the signs must be quite distinct from each other.

Overall, the notation must not lack information, which would prevent the performance of the score; but neither must it contain excessive information, making it unreadable and impractical.

C - Drums nomenclature

On the basis of the previous criteria, we will propose here a basic nomenclature, valid for the great majority of cases. These choices are obviously personal and therefore debatable, but will be supported by an argumentation.

We can schematically divide the elements of the Drums into two groups: drum toms (skins) and cymbals (metals). To each of these groups, we will associate a family of signs. The Drums is usually notated on a traditional staff (5 lines), to which a percussion clef is added, indicating that the vertical position of the signs does not express a definite pitch.

Fig. 170 Percussion staff

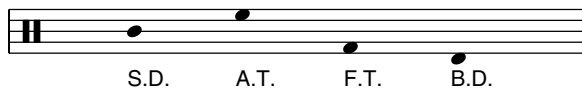


Drum toms notation

All drum toms are notated with a standard notehead, the vertical position of the notehead indicating which drum tom should be struck.

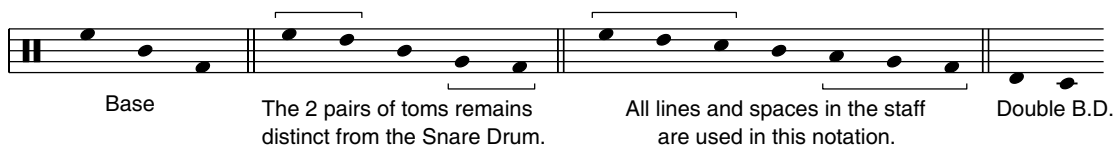
- ▶ the snare drum (s.d.), the central element of the drums set, distinguished from the other drum toms by its timbre, will be notated in the center of the staff, on the 3rd line,
- ▶ the Alto Tom (A.T.) and the Floor Tom (F.T.), the two basic toms, are placed in the first and last line spaces, at equal distance from the snare drum,
- ▶ the Bass Drum (B.D.) finally, is notated under the first line of the staff.

Fig. 171 Basic drums toms notation



This basic set can be easily extended by adding other toms (suspended, placed on the floor, Bass Drum).

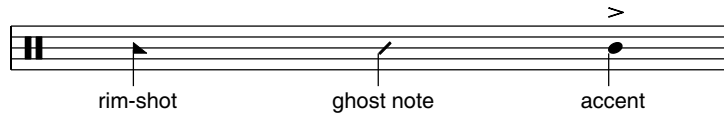
Fig. 172 Extended sets of drums toms notation



In addition to the standard Snare Drum strike, there are three other types of strike:

- ▶ the accent consisting of a standard strike with the olive of the stick while at the same time striking the circle of the Snare Drum with the flat of the stick. The sign remains the same and is simply topped with an accent sign (>).
- ▶ the “rim-shot” consisting of striking the circle of the Snare Drum with the flat of the stick, leaning on the end of the stick, producing a dry and more discreet/light sound than the standard strike. The sign offered here is a variation of the standard notehead,
- ▶ the “ghost note”, which consists of a (very) low-intensity strike, is notated with a reduced, flattened notehead, more graphically discrete and suggestive of a light strike.

Fig. 173 Rim-shot and ghost note notation



In summary, all the drum toms (except the B.D.) are placed in the staff, the Bass Drums are positioned under the staff, so that they are easy to distinguish. Preferably and if possible, suspended toms (A.T.) will be notated above the Snare Drum, and toms placed on the floor (F.T.) below.

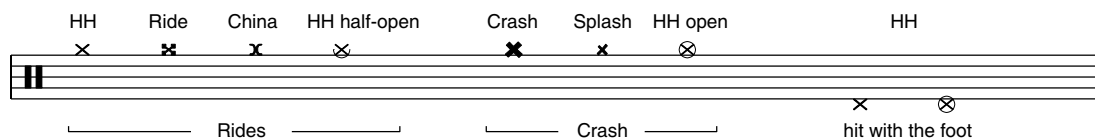
Cymbals notation

As with the drum toms, the signs representing the cymbals will be based on the same notehead, in this case a cross, clearly distinct from the toms. These crosses will be placed above the staff, on the last line, so as not to collide with the tom notes. However, to avoid the use of ledger lines and numerous pitch variations that would complicate the notation, we prefer to notate the types of cymbals here by graphic variations of the cross. Cymbals are basically divided into two groups, according to two different musical functions:

- ▶ the so-called “Ride” cymbals expressing the underlying rhythmic background, the fundamental division of beats, with rather long resonance,
- ▶ the so-called “Crash” cymbals with an accentuation function, with an explosive sound and shorter resonance than the Ride cymbals.

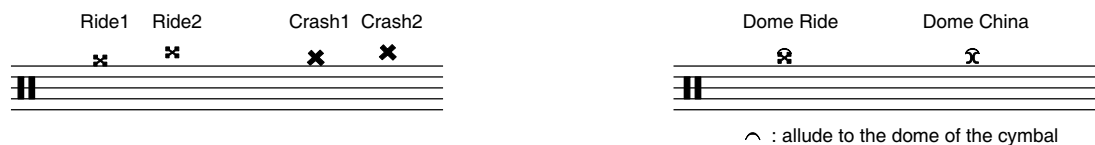
Fig. 174 Cymbals notation

The closed Hi-Hat (or H.H.) is notated with a simple cross, half-open notated with a half circle, and open notated with a full circle. The sign used for the China cymbal refers to its characteristic curvature. The Splash cymbal, less powerful than the Crash, is notated with the same sign but smaller.



However, most drum sets include several Crash and Ride cymbals. They can then be notated by varying their height (and by removing the ledger line that confuses the reading of the sign). Ride cymbals are often struck on their dome, which can be notated with the signs below right.

Fig. 175 Additional cymbals notation



Unlike other cymbals, the Hi-Hat can be struck with the foot, producing a close or an open. Like the other foot-struck elements (B.D.), it will then be notated below the staff. In short, we have the cymbals above the staff, the drums toms in the staff, and the foot-struck elements below the staff.

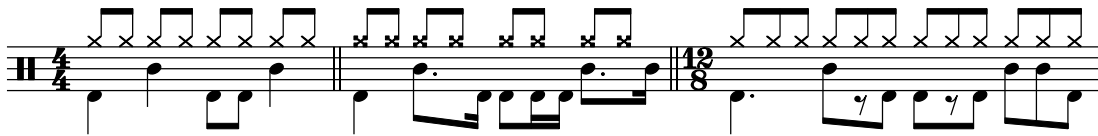
D - The two voices of the Drums

Basically, the Drums has a double task:

- ▶ to express the rhythmic frame of the piece, its fundamental division of beats, through regular or irregular rhythmic backgrounds. This task, as we have seen, is assumed by the cymbals, which can realize this frame in a discrete way, in the background.
- ▶ express the structure of the measure, i.e. the distribution of its strong and weak beats. This function is mainly fulfilled by the B.D. and the S.D. Without going into the details of the different modalities of expression of the meter, it should just be remembered that the B.D. and the S.D. are the two elements of the *same voice*, its two poles low (stable background) and high (unstable foreground).

The two voices of the Drums will be clearly distinguished by their specific notehead and the direction of their stem: upwards for the cymbals, downwards for the drums, thus avoiding any collision between the signs.

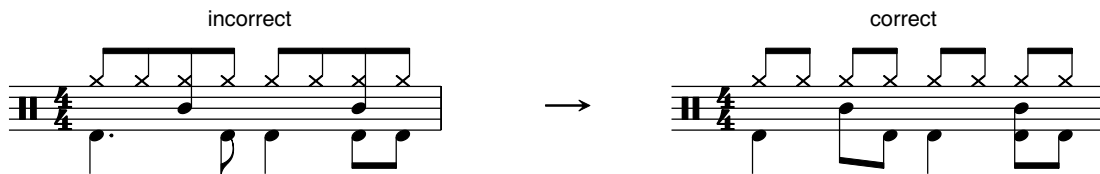
Fig. 176 Notation of the two voices of the Drums



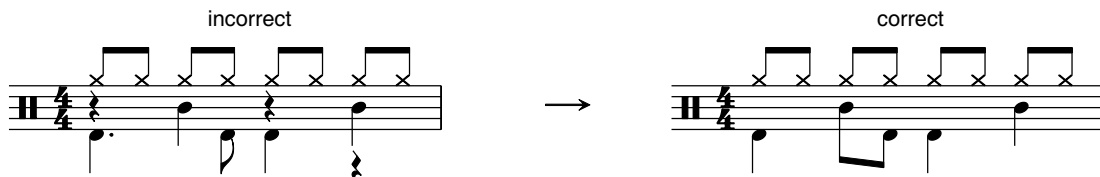
The following notations should therefore be avoided, as in our opinion they are incorrect, i.e. they do not correctly express the voices and their musical functions.

Fig. 177 Incorrect notation of the two voices of the Drums

Here the H.H. and the S.D. are represented as part of the same voice, the B.D. alone realizing the 2nd voice. Moreover, it is a 4 beats measure and not a 2 beats one, we will therefore beam the H.H. every beat making the pulses visible.

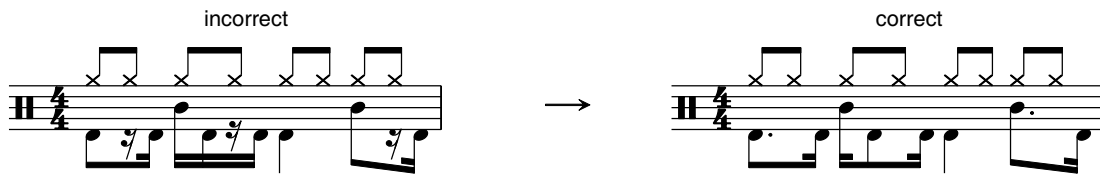


Here the H.H. represents its own voice, but the B.D. and the S.D. are represented as two separate and independent voices! They are obviously part of the same melodic-rhythmic flow.



Generally speaking, rhythms should be notated as often as possible avoiding rests, the decisive point being the temporal distance between the notes, not their duration, which cannot be controlled by the performer and varies greatly according to the different elements and the setting of the drum toms.

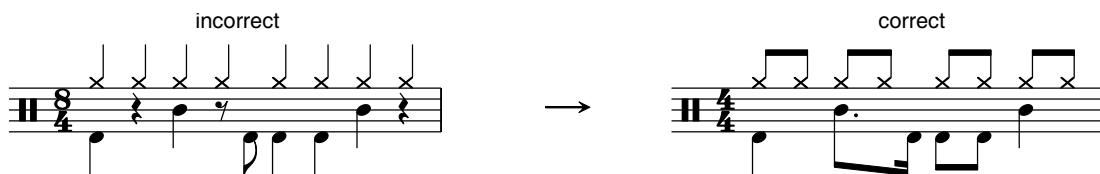
Fig. 178 Durations notation



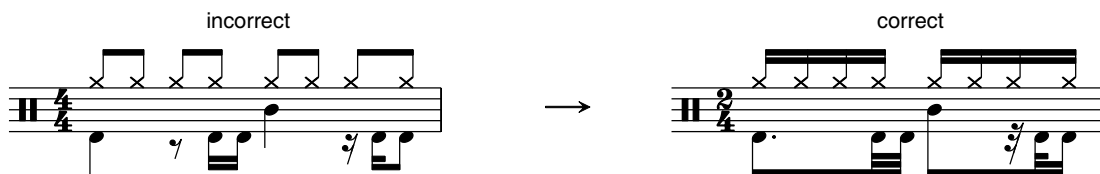
Rhythmic notation must also correctly represent the meter, i.e. the structure of its strong and weak beats. The following notations should therefore be avoided:

Fig. 179 Meter notation

In an 8-beat measure, the 3rd and 7th beats are strong, not weak. The S.D. expresses in fact the 2nd and 4th (weak) beats of a 4 beats measure.

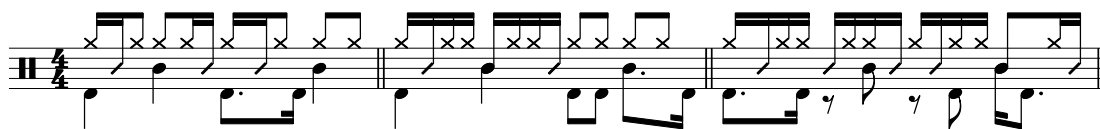


Here too, the S.D. expresses a weak beat (2nd beat of a 2 beats measure) and not a strong beat (3rd beat of the 4 beats measure).



The ghost s.d. has the same function as the Ride cymbals, i.e. to express the rhythmic background. The s.d. can thus fulfill two distinct musical functions, depending on the intensity of its strike. This sign should therefore be linked to one or other of the two voices (or even to both) in order to represent the rhythmic flow as clearly as possible.

Fig. 180 Rhythmic background notation



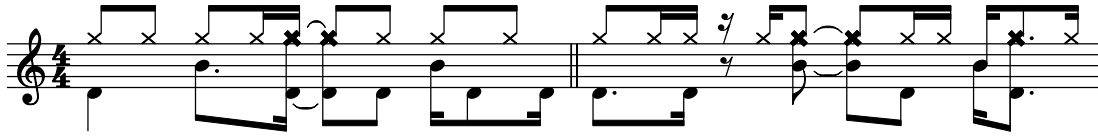
Development of the rhythmic background by the ghost S.D. The expression of the meter remains very readable.

The 2nd beat S.D. is linked to the two voices in such a way that their respective rhythmic flows are well represented.

The expression of the meter remains readable despite the complexity of the H.H. and ghost S.D. background.

Crash cymbals are most often “weighted” with a B.D. (or a S.N.), the extreme high and the extreme low being joined together in a single sound. To note this characteristic, the two elements can be linked in the score.

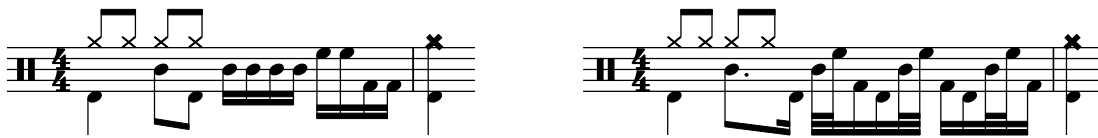
Fig. 181 Crash/B.D. (or S.N.) notation



The breaks are notated, like the B.D. and S.D. rhythms, with stems down, whatever the height of the notes on the staff.

Fig. 182 Breaks notation

It seems unnecessary to us to note rests on the voice of the H.H. during the breaks, as this H.H. must necessarily stop because it is impossible to play.



E - Other miscellaneous indications

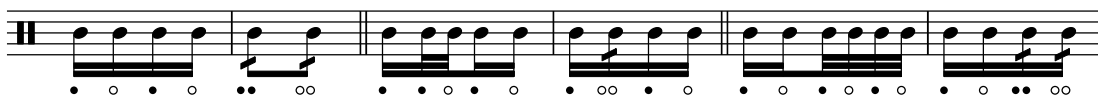
The grace notes are represented with the standard notation.

Fig. 183 Grace notes notation



The tremolo notation is used here for rhythmic divisions that are performed in a roll, i.e. two consecutive strokes with the same hand. The standard rhythmic notation then represents the fingering structure (the alternation of the hands), the tremolo expressing the subdivision by the same hand.

Fig. 184 Tremolo notation



Rhythmic abbreviations are used in the more or less free and improvised parts, noted by the Fill or Solo indications.

Fig. 185 Improved parts notation



The rhythm is defined and imposed here, but interpreted freely with the different elements of the drum set.

The rhythm is free on the 4 beats, with the other instruments continuing to play.

Like the previous situation, but here the Drums are alone, without the other instruments.

Fingerings are sometimes necessary, in difficult parts where a precise fingering is required for a correct execution, or most often in the Drumming methods. Instead of the frequent R (for Right) and L (for Left) signs, which only concern right-handed players, we prefer any pair of simple and universal signs. It is sufficient to assign the two signs to the “strong hand” (the one that leads the rhythm, i.e. the right hand for right-handed players) and to the “weak hand”, i.e. the other hand.

Fig. 186 Fingerings notation



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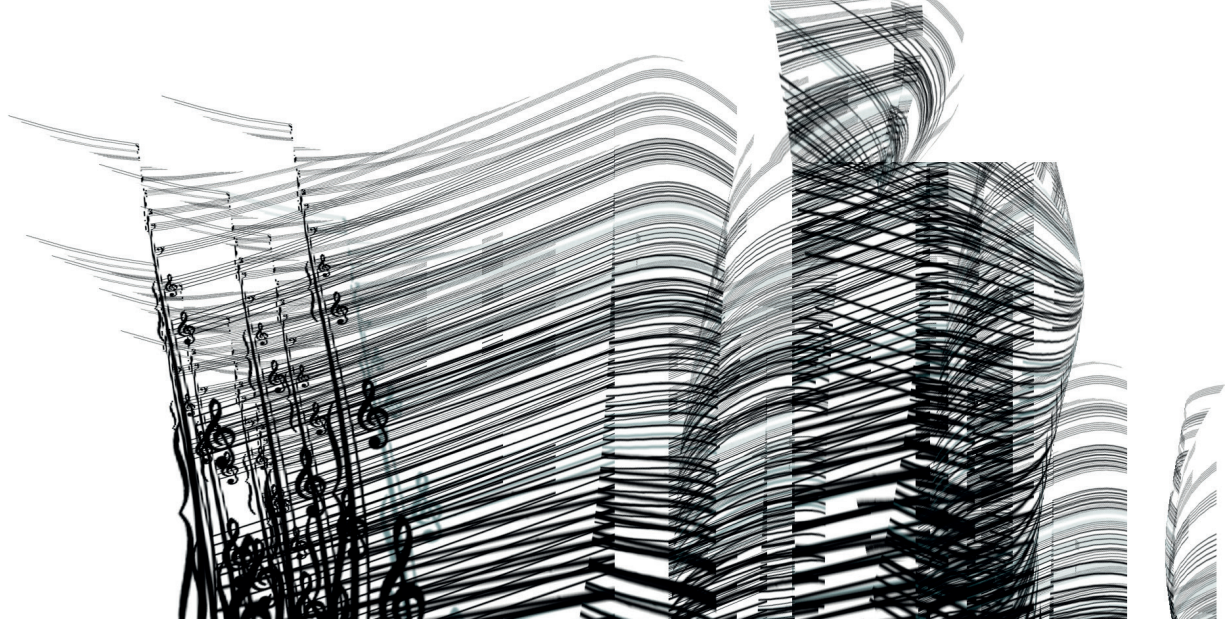
Rhythm notation

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