

Non-staff and other non-common notations for music

MUSIC 253/CS 275A

STANFORD UNIVERSITY



Common Western Notation (CMN)

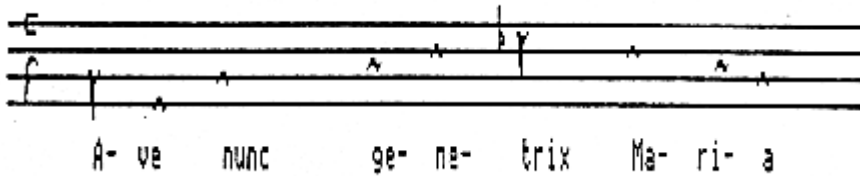
- References **specific** pitches and **relative** durations
- Assumes **regularity of meter**
- Has numerous **graphical** conventions
- Is **flexible** and **extensible** (up to a point)
- Potential includes hundreds (or thousands) or **graphical objects**
- Has numerous **organizational** conventions (scores, parts, etc.)
- **Meaning** of given object often **conferred contextually**

Other representations of music

Western non-common

- **A. Neumes:** specifies relative pitches, often in *patterned* groups associated with particular words or syllables. **Many scripts.**
- **B. Mensural notation:** differentiates multiple *organizational hierarchies* for meter and duration. **Many scripts.**
- **C. Tablature:** pitch and note onset information tied to *gestural* info. **Many dialects.**
- **D. Music since 1950:** arbitrary requirements for *irregular* meter, unusual tunings, unusual gestures. **Arbitrary notations.**
- **E. Braille MN:** tactile output of binary representation. **Many organizational methods. Many national dialects.**

Neumes



From the *Carmina Burana*

(Bavarian State Library [Hss Cgm 4660](https://nbn-resolving.org/urn:nbn:de:hbz:5:1-63868-p0011-9), Munich)

<http://daten.digital-sammlungen.de/~db/0008/bsb00085130/images/index.html?id=00085130&groesser=&fip=eayaxseayafsdrrxsxdsydxdsydyztsxsfsdr&no=1&seite=191>

- *Staves*: usually 4-line
- *Notes*: shapes not standardized
- *Durations*: not explicit
- *Lyrics* (lang.): mainly Latin
- *Lyrics* (script): special fonts, diacriticals

Mensural notation

Metrical hierarchies

Missa Alleluia
1. Kyrie
Pierre de la Rue

Discantus
Cantus
Tenor
Bassus1
Bassus2

Josquin: perfect

Dufay: imperfect

Hic iocundus sum it mundus

Requiem
1 Introit

Discantus
Contratenor
Tenor

Ockeghem: Cut

Cantus
Contratenor
Tenor

Mensuration signs

Measurement, grouping

Metrical hierarchies

Mensuration signs

Tempus	Prolatio	Sign	Semibreves	Minims	Modern		
					1:4	1:2	1:1
perfectum	maior	⊙	ooo		9/8	9/4	9/2
perfectum	minor	○	ooo		3/4	3/2	3/1
imperfectum	maior	⊕	oo		6/8	6/4	6/2
imperfectum	minor	⊖	oo		2/4	2/2	2/1

Fretted-instrument tablatures



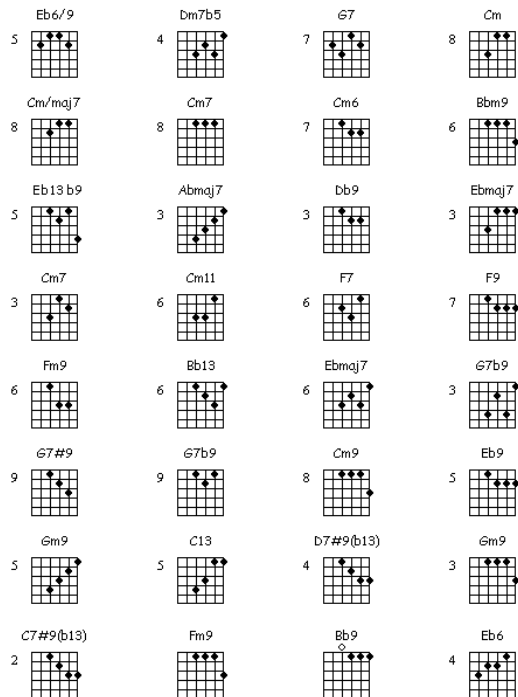
Six-string grid
Duration separated
Many graphical dialects



Lute

Tablatures can take the form of...

- Pictographs
- Numeric codes
- Other graphs



www.jazzguitar.be

Guitar (correctly notated with correct pitch names)

E1 A1 D2 G2 B2 E3

T
A
B

6 strings

T
A
B

7 strings

Bergeronette

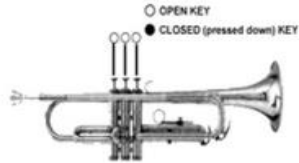
Borjon de Scellery, Traité de la Musette

Musette tablature

http://en.wikipedia.org/wiki/List_of_guitar_tablature_software

<http://en.wikibooks.org/wiki/Guitar/Tablature>

Trumpet tablature



F#: G# ●●●	G ●●●	G#: A# ○●●	A ●●○
A#: B# ●○○	B ○○○	C ○○○	C#: D# ●●●
D ●●●	D#: E# ○○●	E ●○○	F ●○○
F#: G# ○○○	G ○○○	G#: A# ○○●	A ●●○



Anatolian folk instruments



Yang qin (zither)



Map showing major sites, cities, and relative locations ancient sites. From *Music in the Age of Confucius*, page 115.

Neolithic Period ca.7000- 2000 B.C.

Bronze Age ca.2000-500B.C.

Shang dynasty ca. 1600-1050 B.C.

Zhou dynasty 1050-221 B.C.

Western Zhou 1050-771 B.C.

Eastern Zhou 771-221 B.C.

Warring States Period 480-221 B.C.

Qin dynasty 221-206 B.C.

Han dynasty 206 B.C.-A.D. 220

Western Jin dynasty A.D. 265-316

Tang dynasty A.D. 618-907

Song dynasty A.D. 960-1279

Northern Song A.D. 960-1127



Zhu, 5th cent. BCE



Recent music

- Articulation marks
- Compound meters
 - Polymeters
 - Quarter-tones
- Off-staff presentations

Music Theory Spectrum Volume 16, Number 1, Spring 1994
 Peter H. Smith, "Brahms and Schenker: A Mutual Response to Sonata Form"
 Example 12. Brahms, C-minor String Quartet, Op. 51 No. 1, i; Tonal Structure

31 75 136 143 173 216

I III V I

First Group Second Group Dev First Group Second Group Coda

6/8 3/4 6/16

sf *pp*

Systems of arbitrary complexity

Hyo-Shin Na's "Rain Study"

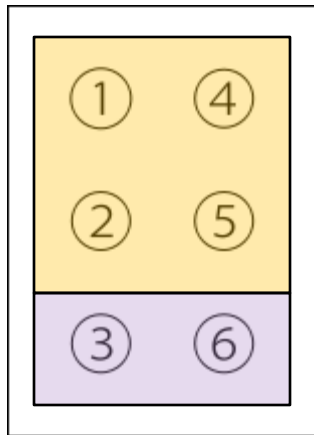


Typeset in SCORE by Craig Sapp (c. 2008)

Braille music notation

Requires impact printing (raised “cells” of information)

Two chapters on Braille MN in *Beyond MIDI*



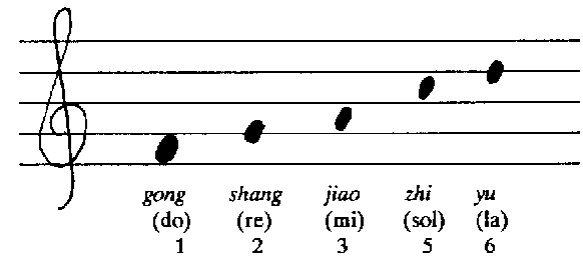
Cells 1, 2, 4, 5: “data” bits
Cells 3, 6: switches

Notes:	Octave Marks:
8th, 128th	<1st
quarter, 64th	1st
half, 32nd	2nd
Whole, 16th	3rd
	4th
	5th
	6th
	7th
	>7th
	RH: fing: 1
	2
	3
	4
	5
	LH
	Intvis: 2nd
	3rd
	4th
	5th
	6th
	7th
	8th
4 Meas. rest	Dim.
Double Bar	Rallentando
Dot	Ritardando
Music Hyphen	Ritenuato
Triplet	Staccato
Repeat sign	Staccatissimo
Slur	Tenuto
Tie	Tenuto-staccato
Chord Tie	Accent
Bracket Slur (beginning)	Martellato
Bracket Slur (end)	Swell
Word sign	Fermata on a note
Word apostrophe	Fermata between notes
Crescendo (hairpin)	Fermata over a bar line
Cresc.	Measure in-accord
Dim. (shape)	Part-measure in-accord
Forte	Measure division sign
Fortissimo	Flat
fff	Sharp
Mezzo-forte	Natural
Piano	
Pianissimo	
Mezzo-piano	

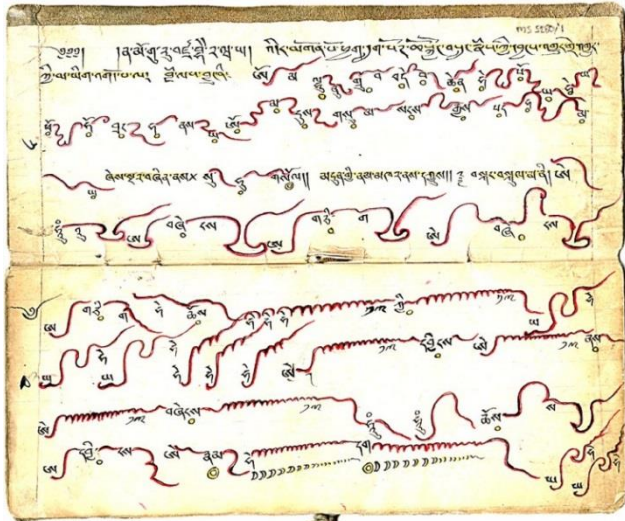
Note: Articulation marks (staccato, fermata, etc.) are shown as applied to a quarter note C (♩ C).

Non-Western music

- Tuning systems unpredictable
 - Ambiguities of tuning, temperament, scale degrees
- Non-Western instruments (gesture)
 - String
 - Wind
 - Percussion
 - Tuned percussion
- Different understandings of pitch and duration



Other special-needs repertoires



MS 5280/1
Yang chants with Tibetan Yang-Yig graphic music notation. Tibet, 19th c.

Tibetan chant

Cheironomic notation

Τῷ Σαββάτῳ ἑσπέρας. ᾠὴ Πα.

Κυριε εε κεκραξαα προ ο ος σε ε ρ ει
 σε του σο ο ον μου ρ ει σα α του ου σο
 ον μου ου Κυ υ υ ρι ι ι ι ε ρ Κυ ρι ε ε

Greek Orthodox chant

A - men Lord I call to You, to . . .

Ἄ - μὴν Κύ - ρι - ε ε - κέ - κρα - ξα πρὸς
 A - min Ki - ri - e e - ke - kra - xa pros

You O hear me O Lord O hear

Σε - ελ - σα - κου - σο - - ον μου ελ - σα - κου -
 Se - i - sa - ku - so - - on mu i - sa - ku -

Combinations of the above

Δείγμα του πῶς γράφονται τὰ κείμενα μετά μουσικῆς εἰς
BRAILLE. Ἐκ τοῦ Ἀναστασιματαρίου Ἰωάννου τοῦ πρωτοψ.

The image displays a sample of Greek Orthodox chant notation in Braille. It consists of five lines of Braille characters. The first line contains the title 'ΗΧΟΣ ΠΑ' (HOS PA) in Braille. The subsequent lines contain the musical notation for the chant, which includes various rhythmic values (such as quarter, eighth, and sixteenth notes) and rests, all represented by Braille symbols. The notation is arranged in a way that corresponds to the Greek text of the chant, which is not explicitly written out but implied by the context.

Greek Orthodox chant in Braille music notation

SCORE for special notations

Has extensive drawing capabilities

- Anticipated PostScript in use of splines

Has a few “palettes” for special characters

- Chant
- Mensural notation
- Tablatures (harp, trumpet, drum, guitar)
- Large-print notation (for plotter) [no Braille MN]

Legacy of large-print editions

Score: Maximum user control

Comes at price of parametric manipulation!