Guidance for engravers/music-setters to produce scores which are accessibility-friendly, especially in braille

# Guidance from the DAISY Music Braille Project

<https://daisy.org/activities/projects/music-braille/>

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# Document Purpose

These guidelines are for engravers (or music setters) who produce scores using music notation software. Following these guidelines, engravers can export the scores as MusicXML files for agencies who will then convert those files into music braille and other accessible formats, such as modified stave notation (accessible large print), talking scores, and scores suitable for exploring with screen readers with braille, sound and speech output.

The visual result will mostly be no different from the original print scores (unless noted below), but the file itself will now be correctly encoded to enable accurate and effective conversion into an accessible format.

This document has three sections: General Guidance (applicable to all engravers), Sibelius-Specific Guidance, and Musescore-Specific Guidance.

# Feedback welcome please

We can provide sample files and feedback whilst you learn how to apply the guidance, and will be happy to hear your experiences to make sure we’ve included everything you need to be confident when you apply the guidance in real cases.

Please email your feedback or questions to the main author at hhpcomposer@gmail.com.

# General Guidance for all engravers

G1. Keep the original layout, including pagination, bars per system, systems per page, instrument combinations etc as the original. Instrument names and abbreviations should be in the original language. This will help blind musicians to communicate with their sighted teachers who just read the original books.

G2. In ensemble scores, especially orchestral scores, if not requested by the transcriber or end user, don’t split a staff with combined instruments (including string divisi) into two or more staves; also don’t combine separated staves with same type of instruments. If splitting or combination is requested, do include necessary information (articulations, slurs, dynamics and texts) in every individual staff, or avoid duplication of elements in combined staff (unless it’s written as multiple voices instead of chords).

G3. Ensure all texts, marks, articulations and symbols are entered and at their correct position (thus make their in correct property (system texts, staff texts, metronome text, lyrics, chord, symbol, articulation etc), and attach them to the correct notes) in correct voices. Don't put an object on wrong place or on a place then drag to another place, except for the cases of G4, G9, S9 and S10.

G4. When multiple staff texts appear, first enter the upmost one, then lower ones. When this sequence produces wrong position, drag the problematic piece of text to the right place. This process ensures the MusicXML exporter put texts in correct sequence.

G5. Ensure all lyrics are correctly worded and hyphenated, so that braille software can group words correctly. Ensure all notes are slurred to match lyric localisation, so that lyrics can be associated to correct notes.

G6. Use default music and text fonts, unless there are certain symbols really require special fonts. Default fonts will get the best MusicXML output.

G7. Try to enter all symbols and lines as normal way, thus use the ones from the software as appropriately as possible, avoiding heavy drawing or customization, or even graphic import. If there are things do need customization, try to annotate them as ‘NB’ texts, so we know what to do in braille. Always try to use standard glissando lines or slides in glissando passages, not other kind of lines. Always use standard breath marks instead of literary comma.

G8. Put the beginning and end of hairpin at the precise locations. Don't drag after input. If entering an ottava line (8va or 8vb), please first select all notes applied to this line, and then create the line. This will ensure all notes to be enclosed in the line. The same rules apply to all other line objects.

G9. In keyboard or harp music, if a dynamic or hairpin or text is written between two staves, unless the upper staff is completely empty (full measure rest) in this measure, please input the dynamic, hairpin or text on the upper staff and drag to the middle.

G10. In keyboard music, when there's a passage with hand alternations, always apply staff changes (cross-staff) in the same voice during the whole passage. This will have the passage put in correct braille staff, and all slurs will be correctly exported.

G11. If a measure contains partial voices or have nothing on one hand in keyboard music (this staff is reserved for alternation of hands from the other staff), try to clean hidden rests after input. E.g., in Sibelius, after entering a partial voice, the rest filling the remaining beats can be deleted twice to completely remove from the score.

G12. If a glissando line has no beginning and/or ending notes in print, enter invisible grace note(s) for the missing one(s), so that the glissando can have reference pitches for braille transcription, but the original rest(s) will not be occupied by such added note(s).

G13. For complicated scores with varied instrument changes (for example, clarinet in Bb changes to in A or Eb) and combinations (e.g., clarinets 1.2.3, clarinets 1.2., clarinet 1., clarinet 2, violin I, Violin I Div. staves 1 & 2 etc., etc), try to avoid instrument changes. For braille music transcription, it's better to keep every kind of combination as one staff, so that the software can generate correct abbreviations according to MusicXML’s part list. Before engraving, go through the whole score, and create all available combinations, each as one staff with correct name and/or abbreviation, then hide unused staves during engraving.

G14. Avoid hidden auxiliary playing notes, articulations, dynamics, pedals) used to render playback, unless requested. These may be exported into MusicXML under certain software such as MuseScore, and will make the braille very dirty.

G15. For scores with unusual accidental rules, e.g., accidentals apply to only the current notes, or accidental restated on tied note but not rstate in other same notes in the same measure, etc, please choose different accidental settings in the engraving rules or available options in the notation software; otherwise, apply correct accidentals to appropriate notes. Some kinds of special accidental rules may look normal visuall,y when entering using incorrect settings, but will play and export in incorrect pitches, bringing difficulties to braille transcription.

G16. In piano score or other scores with multiple voices, If there are different voices playing the same note, but only one of them has an accidental not belonging to the key, please check if the same notes in other voices after this note play correctly. In most cases, they are ok. If not, please add appropriate accidentals. Also, such a note crossed from another staff MUST add an accidental, because it internally belongs to another staff, and will not share the accidental of a different staff.

G17. In orchestral score, if a dynamic, hairpin or text applies to a group of staves (e.g., “pizz.” And “sff” For both staves of violin I, printed between two divisi staves), please include such indication(s) on both staves. In braille we need them on both staves. This case is often seen in early-mid 20th century scores such as works by Stravinsky.

# Guidance specifically for Sibelius users

S1. Generally, all are the same as the general rules, and the engravers should follow all notation operations in the Sibelius Reference Guide, and train themselves with the Sibelius Tutorial installed along with Sibelius, which will maximize the accuracy and readability of the result files. Following these rules will produce fairly friendly scores for braille transcription.

S2. Make sure the engravers must switch their Sibelius to English language, so that the exported symbols and lines information is correct.

S3. If using English keyboard layouts, it’s better to enter accent letters using Sibelius' built-in accent letters from the context menu in text entry mode. This will ease the input, in case one can't remember all alt numbers for such letters.

S4. Don't use Opus text fonts to input symbols as texts. They will be exported as letters instead of symbols. Use available symbols from the articulations palette (various keypad layers) or symbols/lines gallery.

S5. When text is combined with dynamic marks, e.g., “sempre f”, “p cresc.”, it’s better to use one piece of expression text, so that it can be converted as one string in braille.

S6. If a chord has fingerings for multiple notes, enter them one by one. Don’t input them in a single fingering text session and use returns to place them vertically. This will confuse the MusicXML export. When different voice has fingerings, do input them by attaching them to correct notes.

S7. If an ornament has accidental(s), please use accidentals in the Symbols gallery. Don't try to create composite ornament (symbols or lines with accidentals attached), which will currently not be able to export correctly. Also don’t use text entry to input accidentals, which will be texts instead of symbols.

S8. If creating special symbols or lines which are not available in Sibelius, please make them correct English names in the creation dialog, so that Dolet can export the names for the braille conversion software to pick up.

S9. For piano music with hand alternations, there’s a known limitation when meeting ottava lines in another staff in Sibelius. This kind of ottava line is placed independently, and doesn’t affect cross-staff notes which belong to another voice internally, so both the playback and braille are incorrect. Please see the attached ottava.sib file for a temporary workaround (bar 2), which will generate correct transcription result (the ottava lines are input separately to the cross-staff notes, and they are not able to be switched to another staff, which looks weird). When Sibelius team fixes the problem, we should use the standard way (bar 1).

S10. When passage with hand alternations meets extra accidentals and pedals in another staff, don’t visually put them on it, but attach them to the correct notes by keyboard selection. This looks a bit different from the original, but will generat correct braille, only this way.

S11. For unmeasured cadenza, don't enter fake time signatures which will export in braille. Instead, add an irregular bar using the add bar function in the Home tab, calculate and enter the appropriate length for this bar (see the reference guide). If system breaks are met, either use a whole bar of the whole passage and break without bar numbers after input, or enter every line as a single irregular bar, applying correct accidentals for playback and braille output, and then hide them from print if needed. Also, measure numbering of such continuation measures should be excepted.

S12. When a score has transposed instruments, and is notated using transposed pitches, please always turn “transposing scores” (in the Instruments group in the Home tab) on, so that the notated pitches can be played in correct sounding pitches. Always use instrument staves with correct transposition.

S13. In orchestral scores, if there are unusual transposing instruments which are not available in Sibelius, please create them in the Edit Instruments dialog with correct properties, so that the transposition output is correct for both braille transcription and midi playback.

S14. For contemporary ensemble scores without key signatures, input an Atonal (open) key signature at the beginning. This is important especially when transposed instruments are used, because they will not show unwanted key signatures this way.

S15. If there are special time signatures like 2/4+3/4, 2/4=12/16 etc, please don't enter into normal time signature edit box. Instead, enter a hidden time signature with correct beat amount, then write the special time signatures as texts using either standard numbers/punctuations or the time signature text style, which will generate special codes which can be recognized as texts. Sibelius doesn't export such special time signatures correctly from the normal time property, so we should use the text style instead. However, time signatures such as 3+2+3/8 can be correctly exported.

S16. When the engraver needs to export the Sibelius file into MusicXML, it’s better to use the latest version of Sibelius and Dolet plugin (Sibelius 2022.x + Dolet 8 or later). This will enable maximum amount and accuracy of musical elements’ export.

# Guidance specifically for Musescore users

M1. All General rules apply to Musescore engravers, except for G13, see below. The engraver should read Musescore's online handbook to get familiar with all required operations.

M2. Enter most of symbols and lines from the normal palettes, use the Advanced workspace to get more symbols. Only when no appropriate signs are available from the palettes can the engraver press Z to choose objects from Symbols list. These symbols are not easy to export to MusicXML. Adding some symbols to a customized palette may be better, but not tested.

M3. When text is combined with dynamic marks, e.g., “sempre f”, “p cresc.”, it’s better to use one piece of dynamic text (by inputting the dynamic first, then in edit mode input other texts), so that it can be converted as one string in braille.

M4. If a Laissez Vibrer is met, use the available one from the articulations palette. Don't use hidden note or chord for a tie for this. This kind of l.v. tie only apply one curve on a note or chord, but when exporting to MusicXML, if it’s a chord, every note will be applied with a let-ring tie, so will be correctly converted in braille.

M5. If a hairpin begins or ends not at the beginning or end of a note, please don't use mouse to drag the object. Instead, use a new voice with hidden rests to place it to the precise position.

M6. For a trill line with accidental, please first select the trill line and then add an accidental, so that it can be attached to the line and exported as a standard trill line with accidental.

M7. If a two-note chord has two trill marks, one for each note, input the first as normal, and the second as a symbol, unless Musescore allows us to input it normally.

M8. The ottava line limitation of S7 also applies to Musescore. See attached ottava.mscz file. The long text line is an customed ottava line for chords crossed from left hand, but not played. When making braille friendly scores, please replace it with individual ottava lines which only apply to crossed chords, shown here as hidden lines.

M9. If there are multiple articulations on a note, e.g., a tenuto with an accent, please enter individual articulations instead of the combined one available in the palette. The only exception is the "loure" (tenuto-staccato), which can be correctly exported as a detache or portato.

M10. For unmeasured cadenza, especially the ones spanning several systems, the Bar Operation section of the handbook has detailed guide for how to alter measure length and add uncounted measures in order to produce such passages with correct result.

M11. For way of inputting figured bass, please study the attached bsgbass.mscz, which is an encyclopedia of figured bass.

M12. For contemporary ensemble scores without key signatures, input an Atonal (open) key signature at the beginning. This is important especially when transposed instruments are used, because they will not show unwanted key signatures this way.

M13. When a transposed instrument has different type of key signature which is not able to add through ctrl+click on the key signature palette, the following way helps. The example is the beginning of Copland’s 3rd symphony, where the music is in E major, while the B flat clarinets use G flat major instead of F sharp major. There’s no F flat major in the palette, while the G flat major will yield an A flat major (because of the transposition). The solution is to use Musescore version 3.5 or higher, select the first measure where the key locates, and right-click to choose staff/part properties, turn the radio button of “preferred sharps or flats for transposed key signatures” to flats. The key signature should change to the correct one automatically. But if there are key signatures in the opposite behavior, use a hidden instrument change, changing to the same instrument, but with different setting of preferred accidentals. The instrument name and abbreviation should be the same as previous passage at the changing point.

M14. If a multistaff score has different time signatures simultaneously, they can be input individually by ctrl+click the time signatures to enter it in the selected staff. If Musescore reports bar length problem when opening the score again (so please create one or two measures then close and open it), please delete the problematic passage, and use another order to input time signatures. This is a known bug of Musescore. Usually a different order may simply solve this problem.

M15. For a tie crossing voices, don’t use any fake slurs or notes. Musescore can connect ties between voices within the same staff automatically.

M16. For a tie from a staff to another, don’t use hidden notes or voices. Musescore can connect notes on the same staff, no matter which voices they are in. So please first cross the notes wanting to tie to the other staff, then add ties, and then cross back to the original staff.

M17. For orchestral scores with complicated instrument combinations and changes of wind and brass instruments in different keys, there are two ways to make it: 1. Follow G13; and 2. Use instrument changes, including changing to the same instrument in order to input different part names/abbreviations. Musescore’s instrument changes are more friendly than other software, so this way can save lots of staves and computer resources on big scores.