Unicode request for digits with slashes used in figured bass

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2023 November 19

This request is for the digits with slashes that are used in figured-bass music notation in Baroque and neo-Baroque compositions.

Thanks to the International Music Score Library Project (https://imslp.org) for facilitating access to public-domain music scores.

Characters

Because the form of the "slash" varies between digits, an over-striking character such as U+20E5 COMBINING REVERSE SOLIDUS OVERLAY is not adequate for publication. The final two symbols are distinguished by the slash being placed lower than in the more common '5' and '7' symbols they contrast with.

2̸   1D1F7 MUSICAL SYMBOL DIGIT TWO WITH SLASH.
      Figures 1, 4, 7, 10, 12–14, 16, 20, 22, 35, 38, 44.

4̸   1D1F8 MUSICAL SYMBOL DIGIT FOUR WITH SLASH.
      Figures 1–2, 4–8, 12, 14, 16, 19–22, 24–25, 33, 37–38, 44, 50.

5̸   1D1F9 MUSICAL SYMBOL DIGIT FIVE WITH SLASH.
      Figures 1, 9, 11–14, 16–18, 23–25, 33, 39, 44–45, 48, 50.

6̸   1D1FA MUSICAL SYMBOL DIGIT SIX WITH SLASH.
      Figures 1–2, 5–8, 10–16, 18–19, 25, 29, 31, 33, 35, 40, 46–48, 50.

7̸   1D1FB MUSICAL SYMBOL DIGIT SEVEN WITH SLASH.
      Figures 2–3, 11–12, 14, 18, 35–36, 48, 50.

9̸   1D1FC MUSICAL SYMBOL DIGIT NINE WITH SLASH.
      Figures 10, 12, 14, 25, 39, 41, 50.

5̸   1D1FD MUSICAL SYMBOL DIGIT FIVE WITH LOW SLASH.
      Figures 12–14, 26–28, 30–32, 34, 40, 42–47.

7̸   1D1FE MUSICAL SYMBOL DIGIT SEVEN WITH LOW SLASH.
      Figures 14, 30, 40, 42, 47–48, 50.

Properties

1D1F7;MUSICAL SYMBOL DIGIT TWO WITH SLASH;So;0;L;;;;;N;;;;;
1D1F8;MUSICAL SYMBOL DIGIT FOUR WITH SLASH;So;0;L;;;;;N;;;;;
1D1F9;MUSICAL SYMBOL DIGIT FIVE WITH SLASH;So;0;L;;;;;N;;;;;
1D1FA;MUSICAL SYMBOL DIGIT SIX WITH SLASH;So;0;L;;;;;N;;;;;
1D1FB;MUSICAL SYMBOL DIGIT SEVEN WITH SLASH;So;0;L;;;;;N;;;;;
1D1FC;MUSICAL SYMBOL DIGIT NINE WITH SLASH;So;0;L;;;;;N;;;;;
1D1FD;MUSICAL SYMBOL DIGIT FIVE WITH LOW SLASH;So;0;L;;;;;N;;;;;
1D1FE;MUSICAL SYMBOL DIGIT SEVEN WITH LOW SLASH;So;0;L;;;;;N;;;;;

Annotations

1D1F7 MUSICAL SYMBOL DIGIT TWO WITH SLASH
        = raised 2nd
1D1F8 MUSICAL SYMBOL DIGIT FOUR WITH SLASH
        = raised 4th
1D1F9 MUSICAL SYMBOL DIGIT FIVE WITH SLASH
        = raised 5th
1D1FA MUSICAL SYMBOL DIGIT SIX WITH SLASH
        = raised 6th
1D1FB MUSICAL SYMBOL DIGIT SEVEN WITH SLASH
        = raised 7th
1D1FC MUSICAL SYMBOL DIGIT NINE WITH SLASH
        = raised 9th
1D1FD MUSICAL SYMBOL DIGIT FIVE WITH LOW SLASH
        = diminished 5th
1D1FE MUSICAL SYMBOL DIGIT SEVEN WITH LOW SLASH
        = lowered 7th.
        Not appropriate for ⟨7⟩, the barred form of the digit 7 used in much of Europe.

Chart

Greyed-out cells are already assigned or (light grey) are requested in separate proposals.

Musical Symbols

1D100   **1D1FF**

	1D10	1D11	1D12	1D13	1D14	1D15	1D16	1D17	1D18	1D19	1D1A	1D1B	1D1C	1D1D	1D1E	1D1F
0	ǀ	⁀	𝄞	♯			♪			𝑚						
1	‖	⌣	𝄡	♯			♪			𝒇						♯
2	‖	'	𝄢	♯			♪			<	𝐜			♭		♯
3	‖	⫽	𝄣	♭	×		♪			>						
4	⁞	{	𝄤	𝄴	+		♪			♪						
5	ǀ	(	‖	𝄵			ǀ			♪						
6	‖:	—	‖	8va		( )			𝓉𝓇							
7	:‖	=		8vb		o										𝅶
8	⁚	≡		15ma		•									(	𝅷
9	D.S.	≣	—	15mb												
A	D.C.															
B	%		𝄫					>								
C			𝄪					.	𝑟						♯	
D			♭					_	𝑠							
E		𝄞	♮					.	𝑧		Ped.					
F		𝄞	♮						𝑝						♯	

Background

In the Baroque period of classical music (c. 1600–1750), it was almost universal to have a *basso continuo* part, which supplied a bassline and a chord progression. Usually, this would be notated as a single stave for the bassline, with the chord progression being indicated by numbers (the so-called "figured bass"). The practice survived for a time beyond the Baroque period, especially in sacred music (which often in the following Classical period retained a tendency towards archaicism). While it is not generally used in music composed today except for neo-Baroque compositions, reading and realising figured bass is still commonly taught to music students in the present day, and it is preserved in modern editions of Baroque music.

The numbers indicate intervals above the bass note, with the defaults being applied according to the key signature. For example, in the absence of a key signature, a C in the bass with the figures 6 and 4 stacked below it indicates the chord C-F-A (F being a fourth above C, and A being a sixth). But if the key signature has three flats (B♭, E♭, and A♭), then this means C-F-A♭, as the key signature turns the "default" sixth above C into an A♭ rather than an A♮. (Some common combinations of numbers are often abbreviated, e.g. 6 on its own usually means 6/3, and 7 on its own usually means 7/5/3, but this is not relevant for the proposal.) Normally, the choice of octaves is left up to the player, so numbers above 9 are uncommon.

In order to denote chromatic alterations, accidentals can be placed beside the figures. For example, a C in the bass with "♭7" marked would imply that a B♭ is to be present in the chord, rather than a B♮. The number 3 is often left off as understood: for instance, a C with "♭" marked is understood as requiring an E♭. There is some variation regarding whether the accidental should come before or after the figure, e.g. "♭7" or "7♭", but the meaning is the same either way. (Historically, both forms might appear in the same work, as seen for example in Fig. 24.)

However, there is another figure convention used to express relative alterations, and that has survived into present-day teaching and editions: the digits 2, 4, 5, 6, 7, and 9 can all have a slash placed through them to express raising the expected note by one semitone (see Figs. 5 and 6). This is a relative adjustment: if the default sixth above C is A♭, then "6-slash" means A♮. But if the default sixth above C is A, then "6-slash" means A♯. The 9-slash is quite rare, but an example appears in No. 29 of J. S. Bach's *St. Matthew Passion* in Fig. 10. In general, the slash is a backslash (going from top left to bottom right), though in the case of digits with horizontal strokes (i.e. 2, 4, 5, 7) it frequently crosses that stroke vertically, something that may be approximated typographically as a plus sign after the digit (e.g. "4+" for "4+"). We

have found one modern instance of a forward slash being used in this capacity, on a 7 (Fig. 11); this is not uncommon historically, but seems to have become rarer since then.

These symbols are included in the SMuFL standard under "Figured bass" and "Figured bass extended," being assigned code points in the Private Use Area. (See Fig. 14.)

In historical sources, the situation is much more complicated. Slashes may be used to signify raising *or* lowering of a figure, depending on where exactly they are placed; other symbols that have been used are drawing an accidental *through* the digit, slashes with hooks (to distinguish raising from lowering – also presumably because these would look similar to drawing a flat through the digit), or even double-slashes. Slashes on the digits 1, 3, and 8 can also be found, albeit very rarely: slash-3 never came into general use because it is quicker to write a bare accidental, and slash-1 or slash-8 would require a quite particular circumstance to be needed. (We have yet to encounter a slash-0, which would be unnecessary on two grounds: firstly it would require explicitly indicating a compound interval, and secondly it would be equivalent to the unnecessary slash-3.) For a detailed discussion, see chapter 23 of Arnold (1965). The most relevant parts of this chapter have been reproduced in the figures.

Many of these additional historical symbols do not survive in modern practice, and in the absence of a demonstrated modern need we do not propose them, with two exceptions regarding the digits 5 and 7:

- A slash through the bowl (or, in some modern sources, the entirety) of a 5 is often used to mark the diminished fifth, contrasting with a slash through the top stroke for the raised fifth.
- A slash through the descender of a 7 is often used to mark the diminished seventh, contrasting to a slash through the top stroke for the raised seventh.

These two additional symbols may be found in SMuFL, and we propose them here.

References

F. T. Arnold (1965), *The Art of Accompaniment from a Thorough-Bass as Practiced in the XVIIth & XVIIIth Centuries.* Dover Publications, New York.

Figures

The following figures provide evidence for the symbols in context, as well as for the range of glyph variation. Figures 1 to 15 show current usage; figures 16 through 32 show historical examples, which may or may not be in accordance with standard practice; and figures 33 through 51 are from Arnold (1965).

Fig. 1. Excerpts from J. S. Bach, Violin Sonata in E minor, BWV 1023 (composed 1714–1717). Bärenreiter Verlag, Kassel (1958), ed. Günter Haußwald. Taken from pp. 75, 78. Digits 2, 4, 5, and 6 with slash. (The digit 2 with a slash sometimes resembles the Jupiter symbol, ♃; the last excerpt shows two possible forms of it.)

Fig. 2. Ibid (p. 79), but also with a digit 7 with slash (extreme upper right, extracteds below).
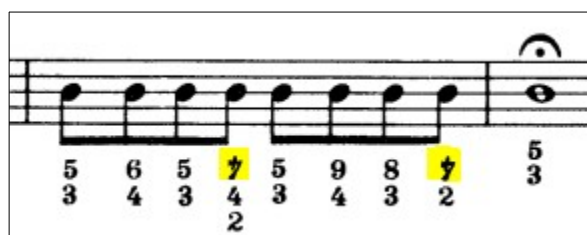
Fig. 3. W. A. Mozart, Missa brevis in G, KV 49/47d (composed 1768). Bärenreiter Verlag, Kassel (1968), ed. Walter Senn, p. 3. Digit 7 with a slash (clearer than Fig. 2).

Fig. 4. Ibid, p. 9, with a form of slash digit 2 showing a backward slash (unlike the examples seen in Fig. 1).

Fig. 5. Walter Piston, *Harmony*, Victor Gollancz Ltd. (1959), p. 147. A modern textbook asking students to realise figured bass. Note that here the slash through the 4 is a backslash, whereas the slash through the 6 is vertical.

1. An accidental next to an arabic numeral in the figured bass could be used to raise or lower a note.

2. An accidental by itself always referred to the 3rd above the bass and could be used to alter that note.

3. A slash or plus sign in connection with an arabic numeral meant to raise that note.

Fig. 6. Stefan Kostka, Dorothy Payne, and Byron Almén, *Tonal Harmony with an Introduction to Twentieth-Century Music* (7th ed., 2013). McGraw-Hill, p. 44. An explanation of slashes and plus signs in figured bass, showing the numbers 4 and 6 with slashes.

Fig. 7. J. S. Bach, *Herz und Mund und Tat und Leben*, BWV 147 (composed 1723). Breitkopf & Härtel, Leipzig (1884), ed. Paul Waldersee, reprinted by E. F. Kalmus (n.d.), p. 205. Digits 2, 4, and 6 with slashes.

Fig. 8. W. A. Mozart, Requiem, KV 626 (composed 1791). Ernst Eulenberg, Leipzig (1932), ed. Friedrich Blume, p. 13. Digits 4 and 6 with slashes.

Fig. 9. W. A. Mozart, Piano Concerto, KV 415/387b (composed 1783). Bärenreiter Verlag, Kassel (1976), ed. Christoph Wolff, p. 128. Digit 5 with a slash (also, an example of figured bass appearing above rather than below the staff). Unlike Fig. 1, in this case the slash is vertical.
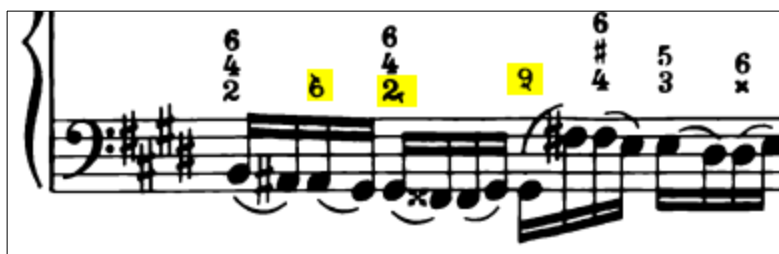
Fig. 10. J. S. Bach, St. Matthew Passion, BWV 244 (composed 1727). Bärenreiter Verlag, Kassel (1972), ed. Alfred Dürr and Max Schneider, p. 135. The rightmost highlighted figure is the rather rare 9-slash.
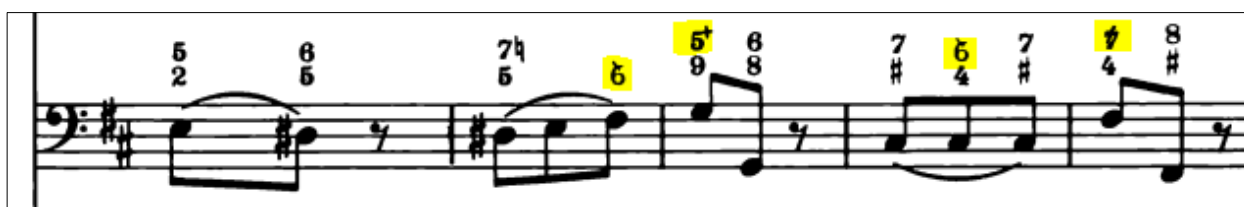
Fig. 11. Ibid, p. 148. The rightmost figure is a 7-slash with a forward slash, which is unusual in modern editions. (It still represents a raised seventh, i.e. E♯.)

Figures can be raised or lowered by writing accidentals immediately to the right or left of them. The accidental either cancels something in the key signature or provides a chromatic alteration not normally part of the key.

A shorthand for *raising* a figure is to write a slash through it. Every figure except for 3 can be slashed as shown below (3 is raised by substituting a ♯ or ♮ for it, depending on the key signature):

2   4   5   6   7   9

Sometimes a + is used instead of the slash, giving 2+, 4+, 5+, 6+, 7+, 9+.

One exception to the slash convention is that a *lowered fifth* is written with this backslash: 5

A horizontal line written after a figure (e.g. 6 —) indicates that all upper voices are to be sustained while the bass note changes.

Fig. 12. Figured bass reference chart from the Toronto Continuo Collective (www.continuo.ca/files/Figured%20bass%20chart.pdf), showing slashes through 2, 4, 5, 6, 7, and 9. A 5 with a backslash through the whole figure is given to mean a lowered 5th.

Table 1: Figured-Bass Symbols and Their Typical Realizations

Figures	Realization	Figures	Realization
No figures	$\begin{smallmatrix}8\\5\\3\end{smallmatrix}$	5̸	$\begin{smallmatrix}8\\\sharp5\\3\end{smallmatrix}$ Raise 5 $\frac{1}{2}$-step
Tasto Solo	0 (bass alone, upper voices silent)	5̸	$\begin{smallmatrix}6\\5\\3\end{smallmatrix}$ indicates dim. 5th
—	Upper voices stay stationary as bass moves	$\begin{smallmatrix}5\\3\end{smallmatrix}$	$\begin{smallmatrix}8\\5\\3\end{smallmatrix}$
♯	$\begin{smallmatrix}8\\5\\\sharp3\end{smallmatrix}$ Raise 3 by a $\frac{1}{2}$-step (not necessarily a sharp)	$\begin{smallmatrix}5\\4\end{smallmatrix}$	$\begin{smallmatrix}8\\5\\4\end{smallmatrix}$ (Usu. 4 3)
♭	$\begin{smallmatrix}8\\5\\\flat3\end{smallmatrix}$ Lower 3 by a $\frac{1}{2}$-step (not necessarily a flat)	6	$\begin{smallmatrix}(8)\\6\\3\end{smallmatrix}$
♮	$\begin{smallmatrix}8\\5\\\natural3\end{smallmatrix}$ Make 3 natural regardless of key signature	6̸ or 6̸	$\begin{smallmatrix}(8)\\\sharp6\\3\end{smallmatrix}$ (Raise 6 $\frac{1}{2}$-step)
2	$\begin{smallmatrix}6\\4\\2\end{smallmatrix}$	$\begin{smallmatrix}6\\3\end{smallmatrix}$	$\begin{smallmatrix}(8)\\6\\3\end{smallmatrix}$
♯2	$\begin{smallmatrix}6\\4\\\sharp2\end{smallmatrix}$ Raise 2 by a $\frac{1}{2}$-step (not necessarily a sharp)	$\begin{smallmatrix}6\\4\end{smallmatrix}$	$\begin{smallmatrix}8\\6\\4\end{smallmatrix}$
♭2	$\begin{smallmatrix}6\\4\\\flat2\end{smallmatrix}$ Lower 2 by a $\frac{1}{2}$-step (not necessarily a flat)	$\begin{smallmatrix}6\\4\\2\end{smallmatrix}$	$\begin{smallmatrix}6\\4\\2\end{smallmatrix}$
♮2	$\begin{smallmatrix}6\\4\\\natural2\end{smallmatrix}$ Make 2 natural regardless of key signature	$\begin{smallmatrix}6\\4\\3\end{smallmatrix}$	$\begin{smallmatrix}6\\4\\3\end{smallmatrix}$
2+	$\begin{smallmatrix}6\\4\\\sharp2\end{smallmatrix}$ (Usu. dim. 7th chord) Raise 2 by $\frac{1}{2}$-step	$\begin{smallmatrix}6\\5\end{smallmatrix}$	$\begin{smallmatrix}6\\3\end{smallmatrix}$

Fig. 13. "Figured Bass Symbols", by Robert T. Kelley (robertkelleyphd.com/home/FiguredBass1.pdf). Shows 5 with the diminishing slash as well as the normal 5-slash, and two variants of the 6-slash.

Fig. 14. The proposed symbols as encoded in the Standard Music Font Layout (SMuFL)

standard (w3c.github.io/smufl/latest/tables/figured-bass.html and w3c.github.io/smufl/latest/tables/figured-bass-supplement.html),

which uses Private Use Area codepoints for music font mapping. SMuFL and Unicode have different attitudes towards unification of glyphs, as seen from the fact that the digits 0–9 are re-encoded here to serve as figured bass digits (they are encoded again elsewhere as time signature digits, tuplet digits, fingering digits, and Italian and Spanish Renaissance lute tablature digits).

We do not propose separate characters for the two allographs of the normal 5-slash. However, we do propose the forms of 5-slash and 7-slash that are semantically distinct.

(The diminished 7th at U+ECC0 in the supplementary figure is unifiable with U+EA5F; both are lowered 7ths. The difference between raising and lowering 7ths has to do with which stroke of the 7 the slash passes through, rather than the angle of the slash. This same pattern can be seen with the diminishing 5-slash, where the angle similarly does not change the meaning.)

Fig. 15. Entry on alterations to figured bass from *Teoría*, a music theory website by José Rodríguez Alvira (www.teoria.com/en/reference/a/alterations.php). No distinction is made between forward and backward slashes, which are both used for raising a note by a semitone. Note also the rare 3-slash, which we are not proposing: it is strictly redundant and is not in SMuFL.

The procedures we follow in this book are fairly standard:

1. Key signatures apply to figures as well as to notes.
2. Modifications of key signatures (accidentals) are indicated by the appropriate sign (♭, ♮, ♯, ♭♭, and so on) next to the figure.
3. An accidental standing alone (not next to a figure) always affects the 3rd above the bass.
4. Sometimes the raising of a tone is indicated by a slash through the figure (6̷) or a little vertical line (4̷, 2̷, or 5̷) rather than by a ♯ or ♮.
5. Figures do not specify the arrangement of the upper voices. Thus, a $\frac{6}{4}$ chord can be played with either the 6th or the 4th on top; the choice is the accompanist's.

Fig. 16. Edward Aldwell, Carl Schachter, and Allen Cadwallader, *Harmony and Voice Leading* (4th ed., 2011) Schirmer, Cengage Learning, p. 52. 2-slash, 4-slash, 5-slash, and 6-slash.

The next group of examples is taken from historical publication

Fig. 17. C. P. E. Bach, *Versuch über die wahre Art das Clavier zu spielen*. 2nd edition, Part II (Berlin, 1762). p. 17. 5-slash, with an explanation that the slash through a figure raises the note by a half-step (*Ein Strich durch die Ziffer ... erhöht das Intervall um einen halben Ton*).

Fig. 18. Ibid, p. 19. 5-slash, 6-slash, and 7-slash (this one giving a left-to-right slash).

Fig. 19. Ibid, p. 28. 4-slash and 6-slash.

Fig. 20. Ibid, p. 41. 2-slash and 4-slash.

Neuntes Capitel.

Vom Secundenaccord.

Erster Abschnitt.

§. I.

Dieser Accord bestehet aus der Secunde, Quarte und
Sexte.

§. 2. Die Signaturen davon sind: 2, 4, 4♮, (dieses ♮
ist hier erhöhend,) $\frac{4}{2}$ und $\frac{6}{4}$.

§. 3. Es kommen bey unserer Aufgabe die grosse und
kleine Sexte, die übermäßige und reine Quarte, die grosse,
kleine und übermäßige Secunde vor.

§. 4. Die Dissonanz liegt hier im Basse, und kommt in
der Bindung (a), und im Durchgange (b) vor, geht aber
allezeit nachher herunter. Die Octave davon darf daher in
der rechten Hand, als eine Mittelstimme, nicht gegriffen werden,

Bachs Versuch. 2. Theil.   N   ob

Fig. 21. Ibid, p. 97. 4-slash used in-text (rather than inside a score).

Fig. 22. Ibid, p. 103. A 4 with a *double* slash, in text and in examples (d). With that said, modern practice would write 4-single-slash here: for example, in the first example of (d) the key signature already would give F♯ as the default fourth, so raising it to F𝄪 would only require one slash. (For an example of such in modern practice, see p. 132 of the Bärenreiter edition of the St Matthew Passion of J. S. Bach: a 6-slash is used below an A♯ in E major, to mean F𝄪 instead of F♯.) The normal 2-slash and 4-slash are also shown.

Fig. 23. Ibid, p. 108. 1-slash (with a forward slash). An 8-slash could have been used for the second (b) on the top line, but C. P. E. Bach chose to write ♯8 instead (using an x-shaped form for the sharp that was common then). This character is not being proposed as it is very rare and is not in SMuFL.

Höhe zu gehen. Wenn bey einem vorhergegangenen Secunden-accord die Quarte rein ist, so pflegt hernach bey der Septime die falsche Quinte mit angedeutet zu seyn (m), und wenn bey dieser reinen Quarte die Sexte klein ist, so pflegt die vermin-derte Septime mit der falschen Quinte darauf zu folgen (n). Bey (o) ist die Octave, wegen der vorhergegangenen Ziffern, nothwendig. Bey (p) accompagnirt man dreystimmig, weil die Modulation der Hauptstimme die vierte Stimme nicht wohl ver-trägt. Die Auflösungen müssen hier nicht eher und nicht später, als es nöthig ist, vor sich gehen. Bey (q) muß man zur ersten Grundnote die Octave zur fünften Stimme nehmen, damit die Septime vorbereitet sey. Man behält bey dieser letztern entwe-der $\frac{3}{7}$, oder $\frac{8}{7}$, und die Septime gehet mit der übermäßigen Quinte hernach in den Einklang zusammen:

Fig. 24. Ibid, p. 118. An example of a figure (here, 5-slash) being used in plaintext, away from musical notation.

Fig. 25. Ibid, p. 334. Figures 4, 5, 6, and 9 with slashes.
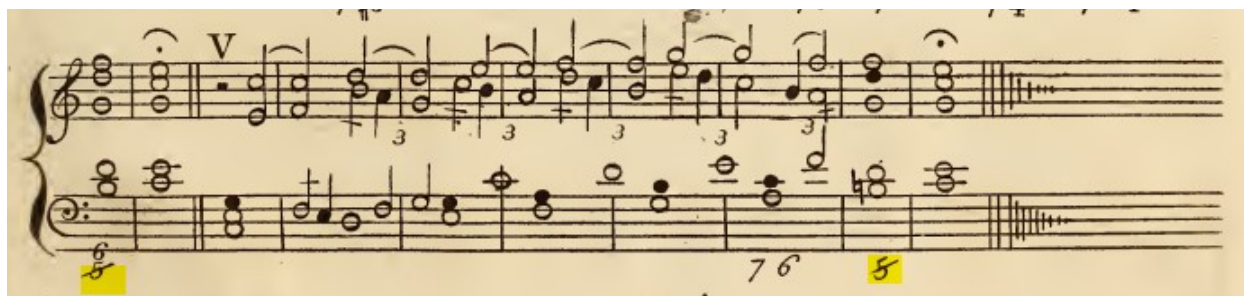
Fig. 26. Francesco Geminiani (1687–1762), The Art of Accompaniment, Op. 11. John Johnson, London, n.d. p. 27. The diminishing 5-slash through the body of the 5.

Le 2 marque la Seconde.
Le 3 marque la Tierce.
Le 3♭ marque la Tierce mineure.
Le ♭ fans 3 marque aufli la Tierce mineure.
Le 3✘ marque la Tierce majeure.
Le ✘ fans 3 marque aufli la Tierce majeure.
Le 4 marque la Quarte.
Le 4✘ ou ✘4 marque le Triton.
Le ✘ coupé d'une ligne oblique, marque aufli le Triton.
Le 5 marque la Quinte.

Le 5♭ ou ♭5 marque la fauffe-Quinte.
Le ✘ coupé marque aufli la fauffe-Quinte.
Le ✘5 marque la Quinte fuperfluë.
Le 5✘ marque aufli la Quinte fuperfluë.
Quand le 5✘ fuit la fauffe-Quinte, il ne marque alors
que la Quinte jufte.
Le 6 marque la Sixiéme.
Le 6♭ ou ♭6 marque la Sixiéme mineure.
Le 6✘ ou ✘6 marque la Sixiéme majeure.
Le 7 marque la Septiéme.
Le 7♭ ou ♭7 marque la Septiéme mineure, & la
Septiéme diminuée: car il n'y a point de marque parti-
culiére pour celle-ci, c'eft à l'Accompagnateur à la difcerner.
Le 7✘ ou ✘7 marque la Septiéme majeure.
Le 8 marque l'Octave.
Le 9 marque la Neuviéme majeure ou mineure.
Il y a fix Remarques à faire fur les Chiffres dont nous
venons de parler.

Fig. 27. Michel de Saint-Lambert, *Nouveau traité de l'accompagnement*. Christophe Ballard, Paris, 1707. p. 11. The 4-slash (through the body of the 4) used for an augmented fourth (*Triton*), thus raising it from the normal; and the diminishing 5-slash for a diminished fifth (*fausse-Quinte*), thus lowering it from the normal.
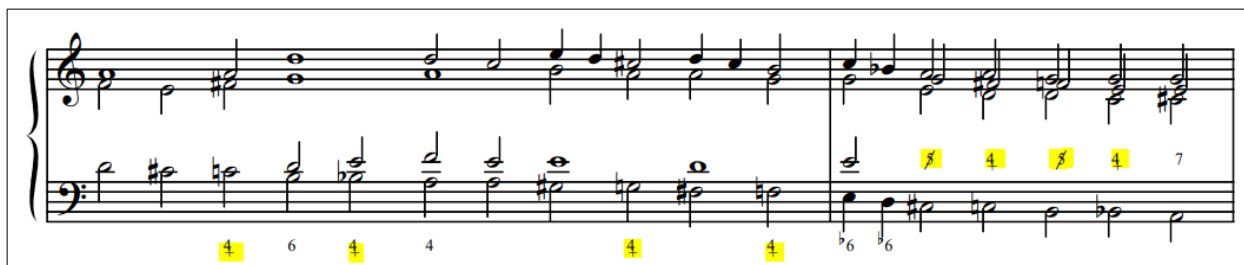
Fig. 28. Guillaume-Gabriel Nivers, *L'Art d'Accompagner sur la Basse Continue Pour l'Orgue et le Clavecin*, 1689; modern faithful re-typeset by Robert T. Kelley, 2001 (https://www.robertkelleyphd.com/home/nivers.pdf). Here 4-slash (with a slash through the *bottom* stroke, not the *right* stroke) is used for an augmented fourth, and 5-slash for a diminished fifth.
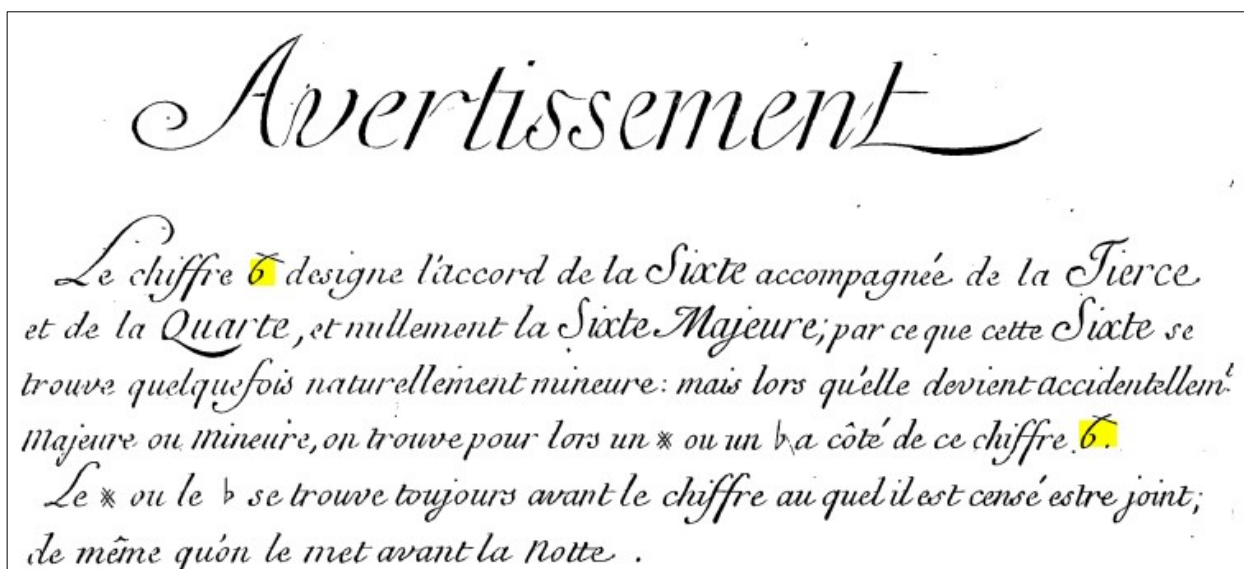
Fig. 29. Jean-Marie Leclair (1697–1764), *Premier livre de sonates a violon seul avec la basse continue*. Boivin, Paris, 1723. An unusual meaning for 6-slash as an abbreviation for 6/4/3. (Leclair's preface specifically states that this is *not* a major sixth, showing that that meaning was becoming common enough to need explanation.) See Thérèse de Goede, Lucy Robinson (2008) Figured Bass in Forqueray [with Reply]. *Early Music* 36 (1), pp. 168–172.

Fig. 30. Leclair, *Seconde livre de sonates pour le violon et pour la flûte traversière avec la basse continue.* The author, Boivin, Leclerc, Paris, n.d. (1728), p. 11. The diminishing 7-slash (with the slash cutting across the bottom stroke) and the diminishing 5-slash.

Fig. 31. Antoine Forqueray (1671–1745), *Pièces de viole.* Antoine Forqueray, Paris, 1747. 6-slash the diminishing 5-slash, and the augmenting 4-slash (as in Fig. 27, Saint-Lambert) in *La Portugaise.* Regarding the presence of an *accidental* before one of the 6-slashes, see Fig. 28: these 6-slashes are *not* raised 6ths, but are rather abbreviations for the combination 6/4/3.

Fig. 32. Jacques-Martin Hotteterre (1673–1763), *L'art de préluder.* The author and Foucault, Paris, 1719. More examples of the diminishing 5-slash.

The last group of figures are taken from Arnold (1965)

VIII

THE AUGMENTED TRIAD

§ 1. The augmented Triad consists, besides the Bass, of the major Third and the augmented Fifth. The latter interval has a fixed progression of a semitone upwards and can under no circumstances be doubled.

The chord is figured ♯5 (5♯), 5̸, ♮5 (5♮).

§ 2. Its seat is, primarily, on the third degree of the minor scale. Here it occurs most frequently as a retardation of the chord of the Sixth. The augmented Fifth must then be prepared. In four-part harmony either the Third may be doubled (Ex. 1 *b*) or the Bass (*c* and *d*); but the Octave of the Bass must not appear in the upper part (*bb*) if it can be avoided:[1]

Fig. 33. Arnold (1965: 512). 4-slash, 5-slash, and 6-slash, of which 5-slash also appears in plain text. In this case the slash is a backslash through the horizontal stroke of the 5.

In figuring a ⁶₅ chord on the leading note the 6 is very commonly omitted, in which case the imperfect (diminished) Fifth, even though in accordance with the key-signature, is usually indicated by a ♭ (before or after the 5), or a stroke through the body (*not* the tail) of the figure: ♭5, 5♭, 5♭, 5̸ (ibid., § 5). In three-part harmony the Third is omitted.

Fig. 34. Arnold (1965: 602). The diminishing 5-slash, with an explicit statement of its difference from the normal one: this slash goes through the *body* of the figure, not the tail. (In this case, the slash goes in the same direction either way.)

Fig. 35. Arnold (1965: 657). 2-slash, 6-slash, and 7-slash.

Fig. 36. Arnold (1965: 675). 7-slash, also in plaintext.

Fig. 37. Arnold (1965: 688). 3-slash and 4-slash.

Ph. Em. Bach (*Versuch &c.*, Part II, Cap. 9, I, § 12) gives the following rule:
"Without further indication one takes a major 6th with an augmented 4th (*a*), and a minor 6th with a minor 2nd (*b*); an augmented 4th with an augmented 2nd (*c*), and with an augmented 4th, indicated by a double sharp (4‡), a major 2nd and major 6th (*d*). The eye is then not bewildered with too many figures."
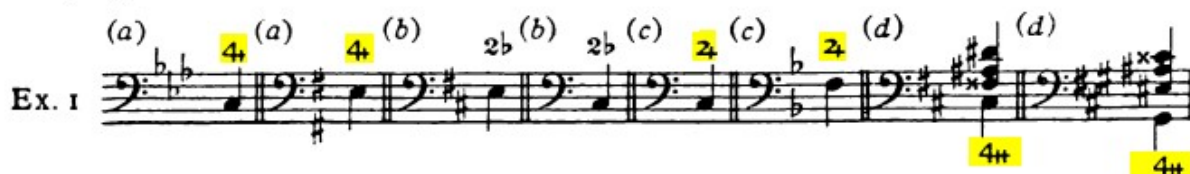
Fig. 38. Arnold (1965: 804). A reproduction of C. P. E. Bach's use of 4-double-slash (Fig. 22).
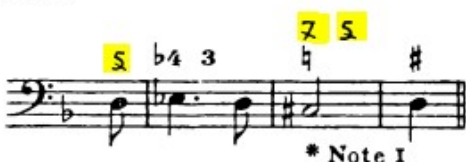
Fig. 39. Arnold (1965: 804). 9-slash and 5-slash.

(*b*) In chords of the diminished 7th in which the Bass and 3rd are accidentally sharpened:

Ex. 3   Leclair, *Sonatas for Violin and Bass*, Bk. IV, Sonata 10, Andante.

Leclair, however, regularly figures the 3rd in contradiction of a previous accidental:

Ex. 4   Ibid., Bk. II, Sonata 12, Allegro (finale), 2nd section.

* Note 1

¹ For the figuring 7 5 see iii, § 2, Ex. 4.

or where the retention of the sharpened 3rd in the following chord makes it desirable in the interests of clearness:

Ex. 5   Ibid., Bk. I, Sonata 12, Largo, 1st section *ad fin.*

* Note 2

rather than:

* Note 3

² Here, as throughout Bk. I of Leclair's Violin Sonatas, 6 = $\frac{6}{4}$ (Ch. xxiii, §§ 8, 9).

³ N.B.—In the seventeenth and eighteenth centuries an accidental was regularly assumed to be contradicted unless it was repeated, therefore:

Fig. 40. Arnold (1965: 804–805). Le Clair's use of the diminishing 5-slash and 7-slash (as well as a 6-slash). As in Fig. 30, the diminishing 7-slash runs through the sloping stroke of the 7, although this modern edition differs from Fig. 30 in having a backslash.

Fig. 41. Arnold (1965: 806). 9-slash in text, with a different stroke angle compared to Fig. 50.

N.B.—The same progression is also frequently figured **7** 6, ♭7 6. The **5** ♭5, *always* being included in the chord of the diminished 7th (even in 3-part harmony), is bound to remain until resolved; therefore in **7** 6, ♭7 6, the 6 cannot be taken otherwise than as $\frac{6}{5}$, ♭$\frac{6}{5}$.

Leclair, Bk. 4 of *Sonatas for Violin and Bass*, Sonata II, Andante, 2nd section, bars 20–2.

Fig. 42. Arnold (1965: 818). More on Leclair's use of the diminishing 5-slash and 7-slash. (On why the 7-slash is receiving an alteration, see Fig. 48.)

Leclair, *Sonatas for Violin and Bass*, Book II, Sonata XII, Allegro ma non troppo, bar 39.

Fig. 43. Arnold (1965: 821). A diminishing 5-slash passing through the body of the 5 (rather than just the bottom stroke).

XXIII

VARIETIES OF FIGURING

1. § 1. For 1 as an alternative to 8 see s.v. 8, § 12, and 10, 11, 12, 13, 14, § 15.

2. § 2. 2 and 2 are equivalent to ♯2, and are also used instead of ♮2 to indicate the contradiction of a ♭.[1]

3. § 3. Instead of ♯3 ♮3 ♭3 we commonly find ♯ ♮ ♭, omitting the figure.[2] In the older figured Basses ♯ and ♭ were used to indicate a major and minor 3rd respectively, even when the 3rd became major by the contradiction of a flat, and minor by the contradiction of a sharp. Niedt, *Musicalische Handleitung*, Hamburg, 1700, Cap. VIII, Regula 3, gives the following Ex.:
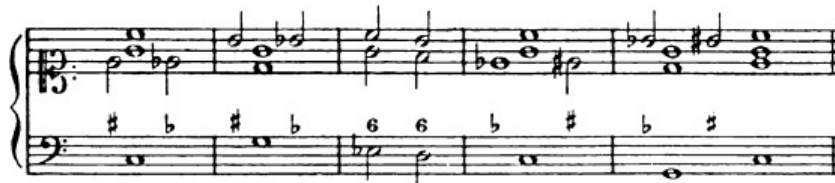
4. § 4. An augmented 4th is indicated, either by ♯4, ×4, or 4 when augmented by the addition of a sharp, and (except in the earlier Basses) by ♮4 or 4 when augmented by the contradiction of a flat—or by 4 in *both* cases.

N.B.—The figuring 4 (♯4 ×4) is sometimes found even when the augmentation of the interval is not accidental, or where it is due to the accidental lowering of the Bass, as in the Ex. given below.[3]

In all works printed by Roger of Amsterdam we find 4 = ♭4. This must not be confused with 4.

5. § 5. Common uses. (1) 5, 5, ♭5, 5♭, 5 are used in all keys to indicate a diminished Fifth, very often irrespective of whether the latter be diatonic

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[1] N.B.—It is purely a matter of convenience whether the accidental is placed before or after the figure to which it belongs. In the case of double figures the accidental is sometimes found before the one figure and after the other, as $^{♭7}_{5♭}$.

[2] This is probably the reason why, in the case of 3, a stroke through the figure (3 or 3) to indicate the raising of the interval never came into general use. Schröter, however, in the Ex. given below, *General-Bass*, 1772, § 214, uses 3 to indicate an *augmented* 3rd:

Fig. 44. Arnold (1965: 862). Slashes through 2, 3, 4, and 5. The 2-slash has the same meaning whether the slash passes through the body or the bottom stroke of the 2, but the latter is more common in modern editions. Additionally illustrates a historical convention that we do not propose: the use of a *hooked* slash (on 4 or 5) to denote lowering instead of raising. (It might be related to the convention of drawing a flat *through* the figure, which looks similar.)

(2) 5♯ is used by some composers instead of ♯5 to indicate a 5 accidentally sharpened.

   N.B.—5♯ must not be confused with 5♯ = ♭5.

§ 6. Exceptional uses. Normally, as we have seen in the preceding section, a stroke through the *body* of the 5 (5̶) flattens, while a stroke through the top (5♯) sharpens. But exceptional uses occur.

   In two different works, printed by different publishers—an important factor in the matter of details of figuring—C. F. Abel, a celebrated player on the Viol da Gamba and composer in the eighteenth century, used the figuring 5̶ in two quite different senses, both entirely at variance with the ordinary practice.

Fig. 45. Arnold (1965: 866): a statement of the normal practice – "a stroke through the *body* of the 5 flattens, while a stroke through the top sharpens".

(a) In his *Six Sonatas for two Violins, or a German Flute and Violin, with a Thoroughbass for the Harpsichord*, Opera III, London, printed for the author, Abel uses 5̷, alternating indiscriminately with $\frac{6}{5}$, to indicate a $\frac{6}{5}$ chord whether the 5th be diminished or *perfect*.

Thus he uses it repeatedly for a $\frac{6}{5}$ on the Subdominant.

Note.—Where the 5th is flattened accidentally, or by the contradiction of a preceding accidental, Abel uses 5♮ in sharp keys and 5♭ in flat keys.

(b) In his *Troi (sic) Trios pour le Violon, Violoncelle et Basso*, Amsterdam, chez S. Markordt (no date or opus-number), Abel uses 5̷ to indicate a 5th accidentally *sharpened* !

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6. § 7. Normal uses. A stroke through the figure (6̷) denotes the rise [1] of a semitone, otherwise indicated by ♯ ♮ [2] (prefixed to, or following the figure), and changes:

(1) a minor into a major 6th:

Ex. 1

Ph. Em. Bach, *Versuch &c.*, Part II, Ch. 7, I, § 6.

[1] N.B.—6̷ must not be confused with 6' = ♭6.
[2] Some composers, e.g. Mattheson, *Organisten-Probe*, use 6̷ irrespective of whether the interval is raised by the addition of a sharp or the contradiction of a flat, others use 6̷ in the former case only, and ♮6 in the latter.

Fig. 46. Arnold (1965: 867): Carl Friedrich Abel's (1723–1787) very unusual use of 5-slash (using the usual diminishing 5-slash either as an abbreviation for 6/5, or as if it was a raising 5-slash), and the normal use of 6-slash (raising, contrasting with the lowering 6-hook-slash).

Fig. 47. Arnold (1965: 868). Leclair's diminishing 5-slash and 7-slash, as well as his use of 6-slash to mean 6/4/3. Note that the diminishing 5-slash sometimes appears with a forward slash, and sometimes with a backslash; what distinguishes it as a diminishing 5-slash is that the slash passes through the bowl of the 5.

7. § 10. Instead of ♯ ♭ ♮ placed next the figure (♯7, ♭7, ♮7 or 7♯, 7♭, 7♮) some composers use a stroke, which, as in the case of 5, denotes either the raising or lowering of the interval according to its position.

According to a common usage a stroke through the top of the figure (7̸) indicates the raising of the interval by a semitone, while a stroke through the tail (7̸) indicates that it is lowered to the same extent, irrespective of whether the alteration is 'accidental' or in contradiction of an 'accidental'.‡ When ♭ is used, instead of being placed beside the figure (♭7 or 7♭), it is sometimes drawn through the top (7̸); in the case therefore of some of the older publishers, e.g. Roger of Amsterdam, who use ⌐ instead of ♭, it is necessary to distinguish carefully between 7̸ = ♭7 and 7̸ = ♯7 ♮7, as also between 5̷ = ♭5 and 5̷ = ♯5, 6̷ = ♭6, and 6̄ = ♯6.

In the case of a diminished 7th (even when diatonic, as ♭b over ♯c when there is a flat in the signature) some composers *invariably* use ♭7, 7♭ or 7̸, while others use ♮7, 7♮ (instead of ♭7, 7♭) when the 7th is diminished by the contradiction of a sharp, and plain unqualified 7 when it is diatonic.

Here, as in other cases, great inconsistency prevails. An examination of the diminished 7ths in the Violin Sonatas of Leclair shows that the composer

‡ Some composers on the other hand use 7̸ = ♯7, 7̸ = ♭7, but ♮7 when the 7th is sharpened by the contradiction of a flat or vice versâ. Cf. § 6, note 2.

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almost always put a stroke through the tail of the figure to indicate a diminished 7th, and that he *intended* to put ♭ *as well* (♭7̸) when the 7th was '*accidentally*' diminished (by the contradiction of a sharp or otherwise); but he often forgot to prefix ♭ and used 7̸ alone. In the very few cases where he omitted the stroke, ♭7 is used, the diminution of the interval being accidental.

Fig. 48. Arnold (1965: 872–873). The difference between the raising and lowering 7-slashes, together with a discussion of some unusual historical practices.

8. § 12. It does not often occur that the figure 8 requires the addition of ♯, ♭, or ♮. Two cases, however, are possible in which it is necessary.

(1) A passing note in an upper part, over a stationary Bass:

Ex. 1

D. G. Türk, *Anweisung &c.*, Halle & Leipsic, 1791, Cap. 4, Abschnitt (section) 2, § 136.

N.B.—Schröter, *Deutliche Anweisung zum General-Bass &c.*, Halberstadt, 1772, Cap. 18, § 210, p. 109, gives ♯8 8̸ ♯1 1̸ as alternative figurings, in flat keys ♮8 and ♮1.

G. Ph. Telemann, *Singe-Spiel- und Generalbass-Übungen*, Hamburg, 1733/4, No. 29, says that 1̸ is very rarely used and that 8̸ is the ordinary figuring.

Fig. 49. Arnold (1965: 873). 1-slash and 8-slash.

9. § 13. In the use of the stroke 9 differs from 7. Whereas 7̸ and 7̵ represent ♯7 and ♭7 respectively, both 9̸ (as e.g. in Türk's *Generalbass*, 1791, § 25) and 9̲ (as e.g. in Roger's edition of Corelli's *Opera prima, seconda, terza,* and *quarta*) are both equivalent to ♯9, and, like 4̸, 5̸, 6̸, 7̸, may be used as the equivalent of ♮9 when the interval is raised by the contradiction of a flat. It would not, however, be safe to assert that a stroke through the tail of the figure was *never* used (as in the case of 7) to denote the flattening of the interval (cf. § 6 on the exceptional uses of 5). In playing from Basses printed by Roger of Amsterdam care must be taken not to confuse 9̲ (= ♯9) with 9̦ (= ♭9), the pointed flat ↓ being drawn through the tail of the figure, and not, as in the case of 5̸, 6̸, 7̸, through the head.

Fig. 50. Arnold (1965: 874). A discussion on 9-slash.

but *after* 2, 4, 5, 6, as in the figuring $\flat^7_{5\flat}$. The idea was probably to put it where there was most room; it was the practice in some Basses (e.g. in many of the publications of Estienne Roger of Amsterdam) to let the accidental *bisect* the nearest approach to an horizontal stroke presented by the figure in question, as 2♭, 4♭, 5♭, 6♭, ♮7 9 (the

♮ being used in the same way, but the ♯ generally replaced by a stroke through the figure); and it may well be that this practice helped to make it seem more natural, even to those who did not follow it—whether composers, printers, or engravers—to place the accidental on the same side of the figure as the said horizontal or obliquely curved stroke.

  ² In the seventeenth and eighteenth centuries an accidental was usually assumed to be contradicted unless it was repeated, but the practice of different composers varied greatly in this respect.

Fig. 51. Arnold (1965: 886). Flats *passing through* figures.

ISO/IEC JTC 1/SC 2/WG 2

<table>
<tr><td>

PROPOSAL SUMMARY FORM TO ACCOMPANY SUBMISSIONS
FOR ADDITIONS TO THE REPERTOIRE OF ISO/IEC 10646[1]
Please fill all the sections A, B and C below.
Please read Principles and Procedures Document (P & P) from std.dkuug.dk/JTC1/SC2/WG2/docs/principles.html for guidelines and details before filling this form.
Please ensure you are using the latest Form from std.dkuug.dk/JTC1/SC2/WG2/docs/summaryform.html.
See also std.dkuug.dk/JTC1/SC2/WG2/docs/roadmaps.html for latest *Roadmaps*.
</td></tr>
</table>

A. Administrative

1. **Title:** *Unicode request for numbers with slashes used in figured bass*
2. Requester's name: *Gavin Jared Bala, Kirk Miller*
3. Requester type (Member body/Liaison/Individual contribution): *individual*
4. Submission date: *2023 November 19*
5. Requester's reference (if applicable):
6. Choose one of the following:
   This is a complete proposal: *yes*
   (or) More information will be provided later:

B. Technical – General

1. Choose one of the following:
   a. This proposal is for a new script (set of characters): *no*
      Proposed name of script:
   b. The proposal is for addition of character(s) to an existing block: *yes*
      Name of the existing block: *Musical Symbols*
2. Number of characters in proposal: *8*
3. Proposed category (select one from below - see section 2.2 of P&P document):
   A-Contemporary   **x**   B.1-Specialized (small collection)   B.2-Specialized (large collection)
   C-Major extinct   D-Attested extinct   E-Minor extinct
   F-Archaic Hieroglyphic or Ideographic   G-Obscure or questionable usage symbols
4. Is a repertoire including character names provided? *yes*
      a. If YES, are the names in accordance with the "character naming guidelines" in Annex L of P&P document? *yes*
      b. Are the character shapes attached in a legible form suitable for review? *yes*
5. Fonts related:
      a. Who will provide the appropriate computerized font to the Project Editor of 10646 for publishing the standard?
      Kirk Miller
      b. Identify the party granting a license for use of the font by the editors (include address, e-mail, ftp-site, etc.):
      SIL (Gentium release)
6. References:
      a. Are references (to other character sets, dictionaries, descriptive texts etc.) provided? *yes*
      b. Are published examples of use (such as samples from newspapers, magazines, or other sources) of proposed characters attached? *yes*
7. Special encoding issues:
      Does the proposal address other aspects of character data processing (if applicable) such as input, presentation, sorting, searching, indexing, transliteration etc. (if yes please enclose information)? *no*

8. Additional Information:
Submitters are invited to provide any additional information about Properties of the proposed Character(s) or Script that will assist in correct understanding of and correct linguistic processing of the proposed character(s) or script. Examples of such properties are: Casing information, Numeric information, Currency information, Display behaviour information such as line breaks, widths etc., Combining behaviour, Spacing behaviour, Directional behaviour, Default Collation behaviour, relevance in Mark Up contexts, Compatibility equivalence and other Unicode normalization related information. See the Unicode standard at www.unicode.org for such information on other scripts. Also see Unicode Character Database

(www.unicode.org/reports/tr44/) and associated Unicode Technical Reports for information needed for consideration by the Unicode Technical Committee for inclusion in the Unicode Standard.

C. Technical - Justification

1. Has this proposal for addition of character(s) been submitted before? _no_
    If YES explain _____

2. Has contact been made to members of the user community (for example: National Body,
    user groups of the script or characters, other experts, etc.)? _yes_
        If YES, with whom? _____ *Author is a member of the user community.*
        If YES, available relevant documents: _____

3. Information on the user community for the proposed characters (for example:
    size, demographics, information technology use, or publishing use) is included? _____
    Reference: _____

4. The context of use for the proposed characters (type of use; common or rare) _music_
    Reference: _____

5. Are the proposed characters in current use by the user community? _yes_
    If YES, where? Reference: _____ *See figures* _____

6. After giving due considerations to the principles in the P&P document must the proposed characters be entirely
    in the BMP? _no_
            If YES, is a rationale provided? _____
            If YES, reference: _____

7. Should the proposed characters be kept together in a contiguous range (rather than being scattered)? _yes_

8. Can any of the proposed characters be considered a presentation form of an existing
    character or character sequence? _no_
        If YES, is a rationale for its inclusion provided? _____
        If YES, reference: _____

9. Can any of the proposed characters be encoded using a composed character sequence of either
    existing characters or other proposed characters? _no_
        If YES, is a rationale for its inclusion provided? _____
        If YES, reference: _____

10. Can any of the proposed character(s) be considered to be similar (in appearance or function)
    to, or could be confused with, an existing character? _no_
        If YES, is a rationale for its inclusion provided? _____
        If YES, reference: _____

11. Does the proposal include use of combining characters and/or use of composite sequences? _no_
    If YES, is a rationale for such use provided? _____
        If YES, reference: _____
    Is a list of composite sequences and their corresponding glyph images (graphic symbols) provided? ____
        If YES, reference: _____

12. Does the proposal contain characters with any special properties such as
    control function or similar semantics? _no_
    _____ If YES, describe in detail (include attachment if necessary) _____
    _____
    _____

13. Does the proposal contain any Ideographic compatibility characters? _no_
    If YES, are the equivalent corresponding unified ideographic characters identified? _____
        If YES, reference: _____