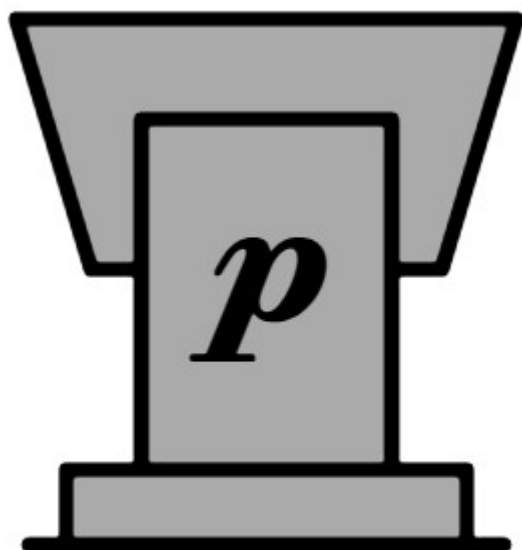# PODIUM

Guidebook v1.1

Overture

An e-reader for music scores.

100% browser-based: completely free, entirely open source, and totally unsupported!

No installation, no registration, no login, no file import. Just use it!

Built for Google Chrome, but runs (fingers crossed) in any modern desktop/tablet/smartphone browser.

Unique UI featuring a circular menu and multiple layouts.

Alternative to generic PDF viewers, customized for the layout and annotation of scores in PDF format.

Not a music library: works with PDF files stored locally or in the cloud.

Uses PDF annotations and embedded document metadata to store user edits.

...that runs on:

Touch screens devices (laptops, Chromebooks, tablets, smartphones) plus conventional desktops.

...with input devices:

S-Pen, Apple Pencil, USI styli, fingers and thumbs.

Mouse, track pad, computer keyboard, Bluetooth page turners.

...and practice tools:

Metronome, with experimental animated conducting hand.

On-screen piano keyboard, with functions for assisted tuning.

Review tool for instant replay of last 1 minute(configurable) of audio/video.
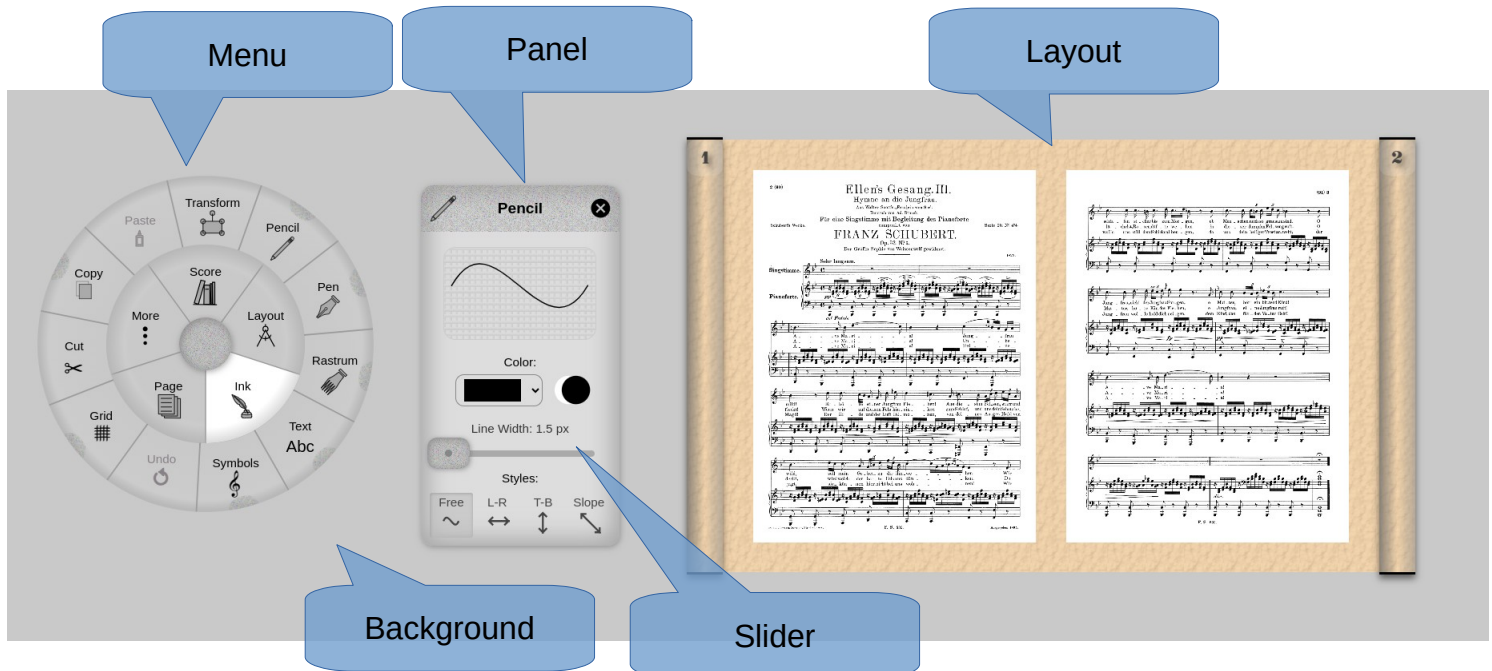
Stopwatch and clock.

...url:

https://studiop5.org/podium

Table of Contents

Interface Basics

Podium has four user interface elements:

- Background: supports multiple navigational gestures.
- Menu: 2 level, circular array of Cells.
- Panels: 26 individual panels, launched by dragging out from Menu Cells.
- Layouts: 4 score layout styles.

In the above picture, note the sandpaper-like texture in the inner circle of the Menu, in the Panel's header, and in the Panel's slider. Wherever this texture appears, touch-drag on it (or click-drag, for non-touch devices) to move the element. Layouts do not have such a texture: instead, they are positioned and sized automatically to maximize available screen usage. However, this does not mean you can't move or resize layouts:

> **Note**: The Layout, the Menu, and all Panels can be moved *and* resized by using a ***2-finger pinch pan-zoom*** *anywhere* on their surface***.*** In addition, a ***2-finger pinch-zoom*** on the Background will ***simultaneously*** resize the Menu, any on-screen Layout, and all on-screen Panels. For non-touch devices, move elements by holding down the ctrl key and left-dragging them with the mouse. To resize, click on the element, hold down the ctrl key, then rotate the mouse wheel.
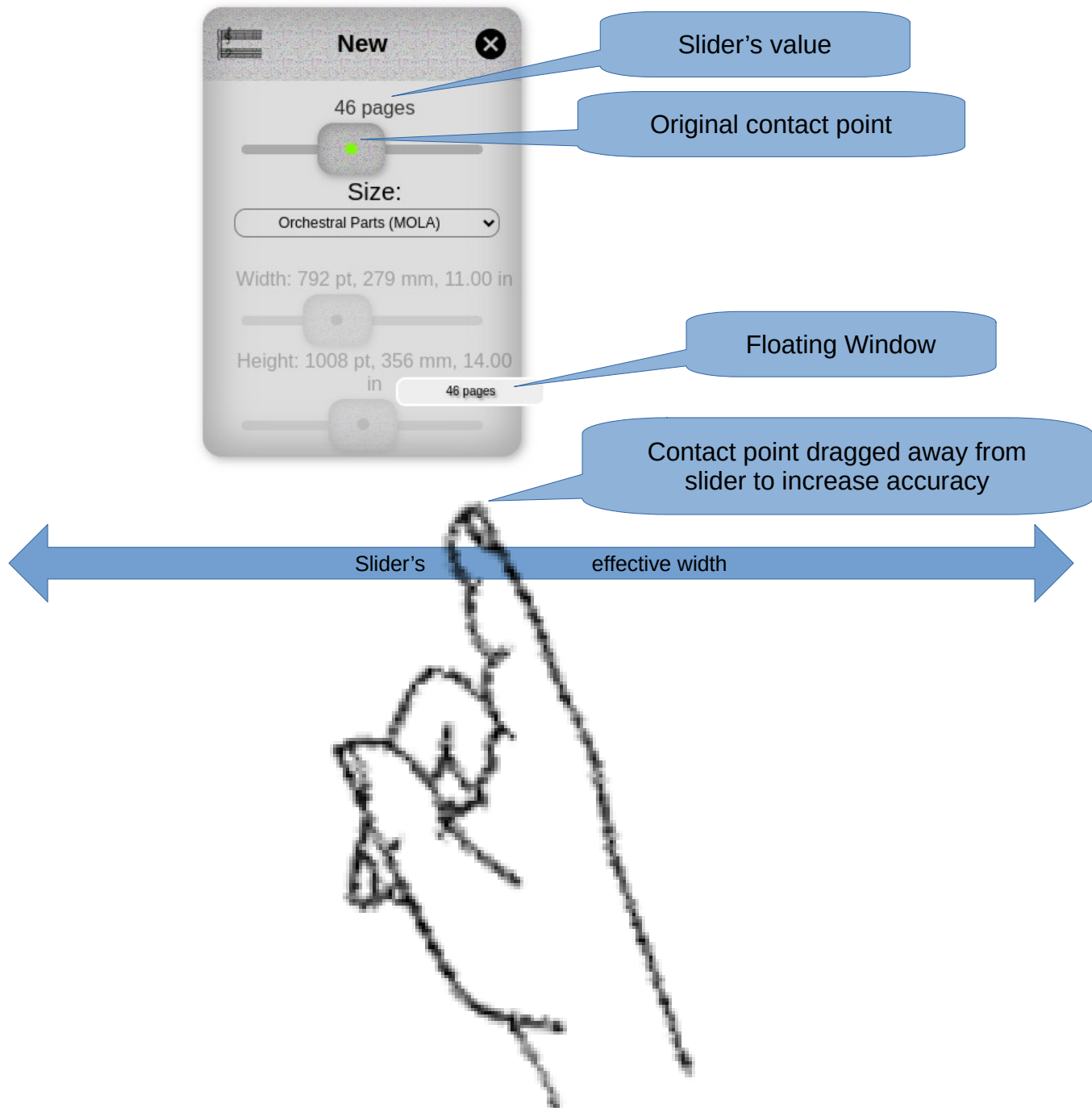
Additional gestures:

- Background:

  - Drag left→right to enter full-screen.
  - Drag right→left to exit full-screen.
  - Drag top→bottom to reset and center Menu.
  - Drag bottom→top to collapse and park Menu in upper left corner.
  - Long press anywhere to summon Menu to that location.

- Panels:

  Metaphorically, Panels *live* inside those Menu cells that have a small sandpaper-textured semicircle around their outer edge.

  - Open a Panel by *dragging out* from its corresponding Menu cell.
  - When open, *fling* (rapid touch→drag→release) from the Panel's header (the part with the sandpaper-like texture) to hide it, effectively returning it to the Menu.

  Note: You can *close* any Panel by tapping the *x* close button in its header. Alternatively, you can *hide* any Panel by simply flinging it from its header. For most Panels, you won't notice any difference between closing and hiding. However, those Panels that run dynamic code—the More Ring's Metronome, Stopwatch, Watch, and Review Panels—will continue to run in when hidden. The Metronome Panel, for example, will continue to make audible ticks when hidden, but will be completely silent when closed.
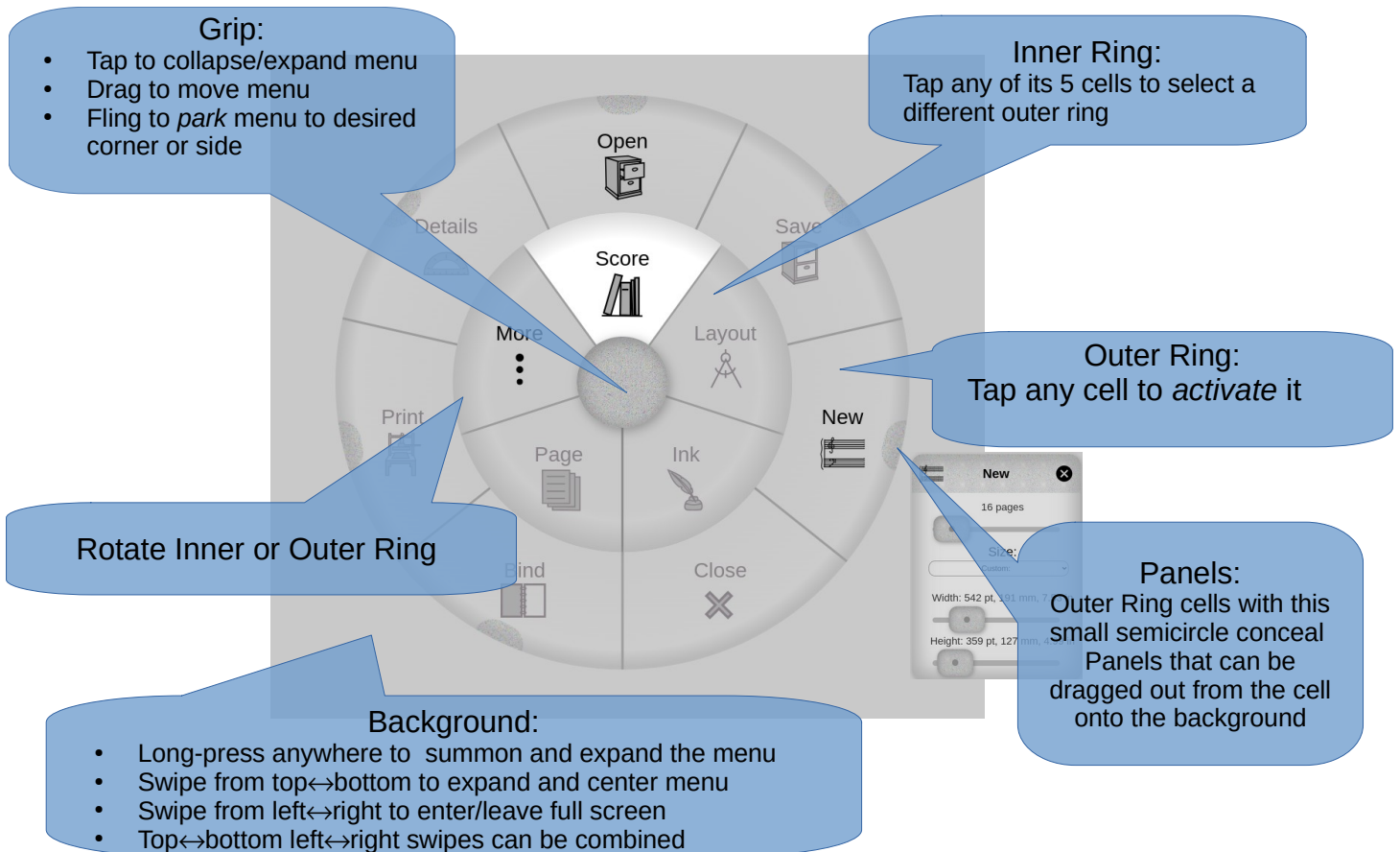
Sliders:

Podium's Panels make extensive use of *slider* widgets to adjust numeric values. To increase a slider's accuracy, first adjust the slider to its approximate value, and then, *without lifting your finger (or pointer, or mouse button,...),* drag up or down *away* from the slider. The further you drag, the more sensitive the left↔right slider motion becomes, effectively increasing the slider track's width to allow for precise adjustments.

Whenever you adjust a slider, a small Floating Window will appear that mirrors the slider's value. This window will follow your finger's point of contact, offset by sufficient distance so that you'll always be able to see the slider's current value, even if the slider widget itself is obscured by your hand:

New

46 pages

Size:

Orchestral Parts (MOLA)

Width: 792 pt, 279 mm, 11.00 in

Height: 1008 pt, 356 mm, 14.00 in

46 pages

Slider's value

Original contact point

Floating Window

Contact point dragged away from slider to increase accuracy

Slider's   effective width

Menu

When Podium is launched, it displays a circular menu against a gray background. The menu has several parts:

Grip:
- Tap to collapse/expand menu
- Drag to move menu
- Fling to *park* menu to desired corner or side

Inner Ring:
Tap any of its 5 cells to select a different outer ring

Open

Details   Save

Score

More   Layout

Outer Ring:
Tap any cell to *activate* it

Print   New

Rotate Inner or Outer Ring

Page   Ink

New
16 pages
Size:
Width: 542 pt, 191 mm,
Height: 359 pt, 127 mm,

Panels:
Outer Ring cells with this small semicircle conceal Panels that can be dragged out from the cell onto the background

Find   Close

Background:
- Long-press anywhere to summon and expand the menu
- Swipe from top↔bottom to expand and center menu
- Swipe from left↔right to enter/leave full screen
- Top↔bottom left↔right swipes can be combined

- Grip: drag to reposition the Menu. Tap (without dragging) to *collapse*, hiding the inner and outer rings so that only the Grip is visible. Tap again to expand. Fling (drag→quick release) towards any of the four corners or edges to park (i.e. move and collapse) there.

- Inner Ring: tap any cell to *activate* it, selecting the set of cells displayed in the outer ring. Only one inner ring cell at a time can be active. Activated cells are visually distinguished by their white background.

- Outer Ring: tap any cell to *activate* it, triggering its action. At most one cell of an outer ring can be active at a time.

- Cells in both inner and outer rings are grayed-out when unavailable. When Podium is launched, only the Score and More cells of the inner ring, together with the Open and New cells of the Score ring, are available.

- Both Inner and Outer Rings can be *rotated* by dragging them in a circular motion.

    Note: Its easier to use the menu when its cells are in a fixed, predictable location. However, sometimes its useful to rotate a ring to expose it cells when, for example, you've moved the menu to the top or side of the screen, and not all cells are visible.
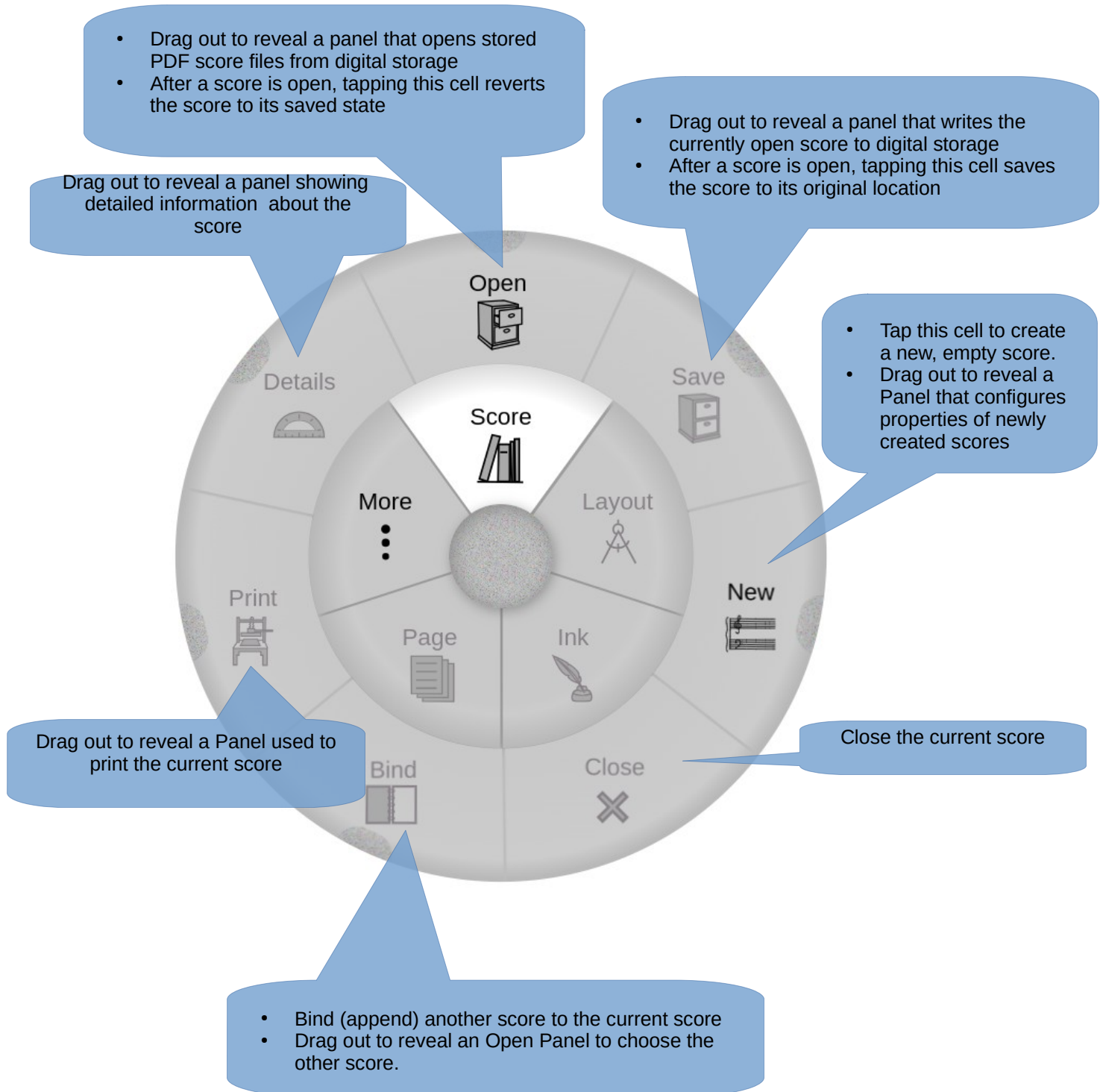
- Panels: several outer rings cells have a small semi-circle along their edge. These cells conceal an associated Panel. To reveal that panel, tap-drag out from the ring to the background.

    ᐧ Panels can be repositioned by dragging from their header (the top section with the sandpaper-like texture). Also, like all elements, panels can be moved or resized by a pinch pan-zoom from any point on their surface.
    ᐧ Close a Panel it by clicking its *x* close button. The Panel will be deleted from the interface.
    ᐧ Hide a Panel by flinging it from its header. Unlike a closed Panel, hidden Panels are hidden from view, but not deleted. Those panels that perform a continuous action will continue to run when hidden.

Score Ring

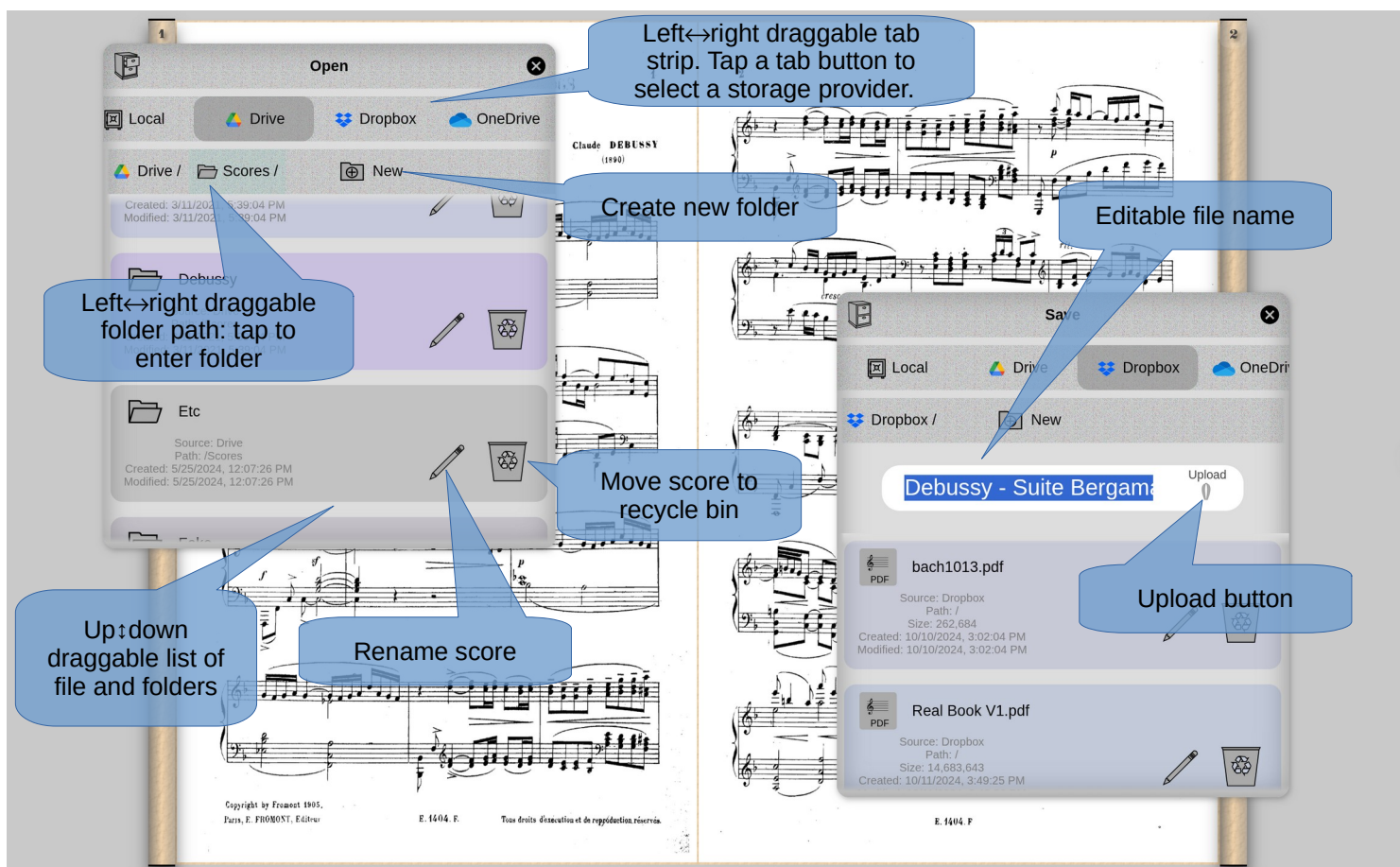Manage scores stored as PDF files.

Most of the Score Ring's cells are grayed out until a score is Opened, or until a New, empty score is created.

> **Note**: in Podium, only one score can be open at a time. When opening a score, if the current score has unsaved changes, those changes will be lost. For this reason, you'll be prompted to confirm.

- Drag out to reveal a panel that opens stored PDF score files from digital storage
- After a score is open, tapping this cell reverts the score to its saved state

Drag out to reveal a panel showing detailed information about the score

- Drag out to reveal a panel that writes the currently open score to digital storage
- After a score is open, tapping this cell saves the score to its original location

- Tap this cell to create a new, empty score.
- Drag out to reveal a Panel that configures properties of newly created scores

Open

Details

Score

Save

More

Layout

Print

Page

Ink

New

Bind

Close

Drag out to reveal a Panel used to print the current score

Close the current score

- Bind (append) another score to the current score
- Drag out to reveal an Open Panel to choose the other score.

Score Ring: Open, Save

Open and save PDF score files.

- Open/Save scores from locally attached storage or from the cloud storage services of Google Drive, Dropbox, or Microsoft OneDrive. Though these services require accounts, they all offer free subscription tiers.

- In either panel, tap any tab on the tab strip to open a service. Drag the strip left↔right to access other tabs.

- Each panel displays a scrolling list of PDF file and folder entries. Drag or fling that list up/down to scroll the contents. The list is alphabetical A-Z, with directories grouped after files.

- Tap a folder entry to repopulate the list with that folder's contents. Below the tab strip is the *Folder Path* strip: it shows the current folder path. Tap a folder name or icon to load the corresponding folder. Tap New to create a new folder.

- Tap a PDF score file in the Open Panel to download and display that score.

- The Save Panel has a widget for editing the file name. Inside the width there is an Upload button: tap it to save the current score, with the given name, to the selected folder.

- Each entry in the file/folder list has icons for renaming or deleting. There is no built-in copy/paste functionality: instead, open the file, save it to the desired location, then delete the original.

    Note: by design, Podium never actually *deletes* files: instead, it moves them to the storage provider's recycle bin. Log in to the provider to manage the recycle bin through its native interface.

- Browser security provides very limited access to local files. The Local tab simply hands off control to the device's built-in file manager widget. Unfortunately, it's impossible to pre-populate this widget.

- The Recent tab provides access to the 20 last visited PDF score files. This list is stored in the browser's local storage, so it will have unique contents for each device/browser combination.

- The Menu's Open and Save cells are tappable. With a score open, tapping the Open cell reloads the current file (i.e. "revert to saved"). Tapping the Close cell saves the current file, bypassing the Save panel.

Score Ring: New, Print, Details
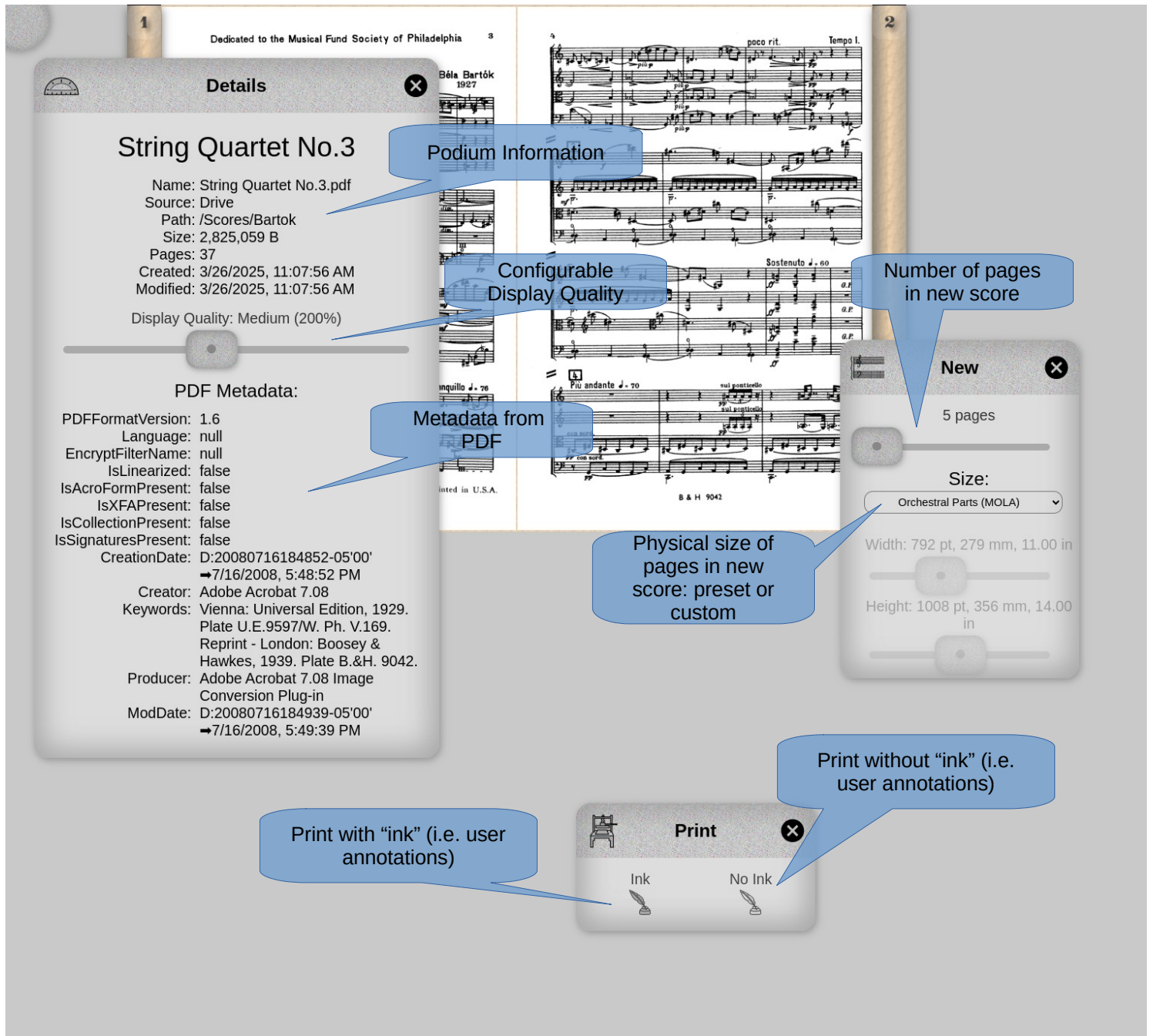
Details Panel:
- Displays metadata created by podium and from original PDF file, if any.
- Configurable display quality: higher quality uses more memory.

New Panel: Determines how the New Cell creates new, empty scores:
- Initial number of pages in score (add/remove pages later with the Page Ring)
- Physical size of each page: choose from presets, or create a custom size

Print Panel: In Podium, user-created annotations are called *Ink*.
- Ink: print with user-created annotations
- No Ink: print without user-created annotations

Layout Ring

Determine how scores are displayed.

Podium implements 4 layout schemes:

- Book: models a physical book with animated page flipping
- Horizontal: continuous horizontal scrolling
- Vertical: continuous vertical scrolling
- Table: all pages visible at once in a grid of thumbnails

The Screen cell toggles full screen mode. Alternatively, toggle full screen by swiping left↔right on the background.

By default, scores open with the last used layout on the current browser/platform or, if none, Book. The layout can be changed any time by tapping the desired cell. Whenever a score is saved, its last layout is stored as metadata in the PDF file, as well as in browser local storage.

> **Note**: In a Podium Layout, all pages must be the same size. Whenever a score file is opened, the maximum page width and height are first determined. Then, if any pages are smaller than this maximum, they are padded to the maximum with a grey border at the top and sides.
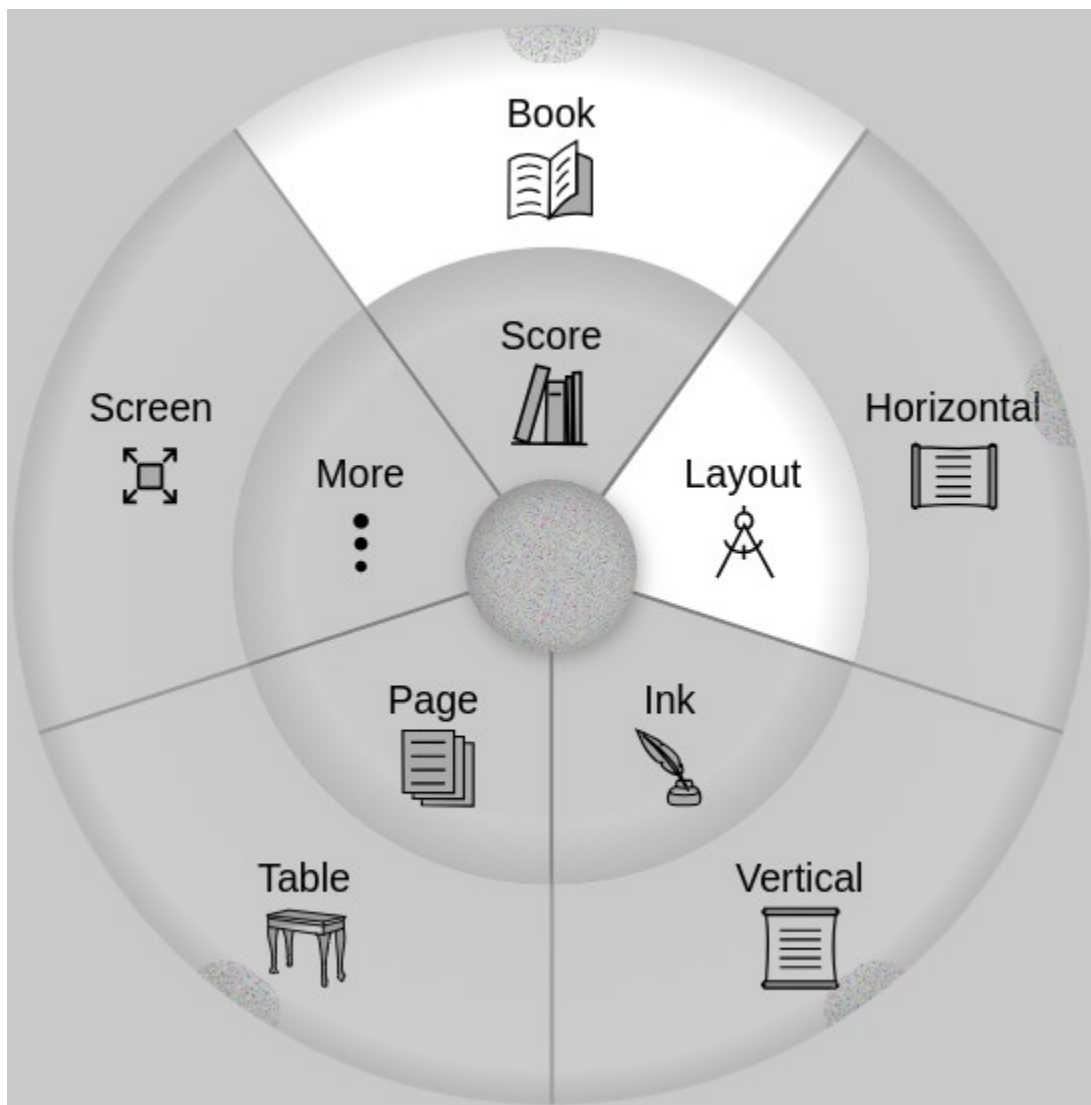
Layout Ring: Book

Simulate a physical book.
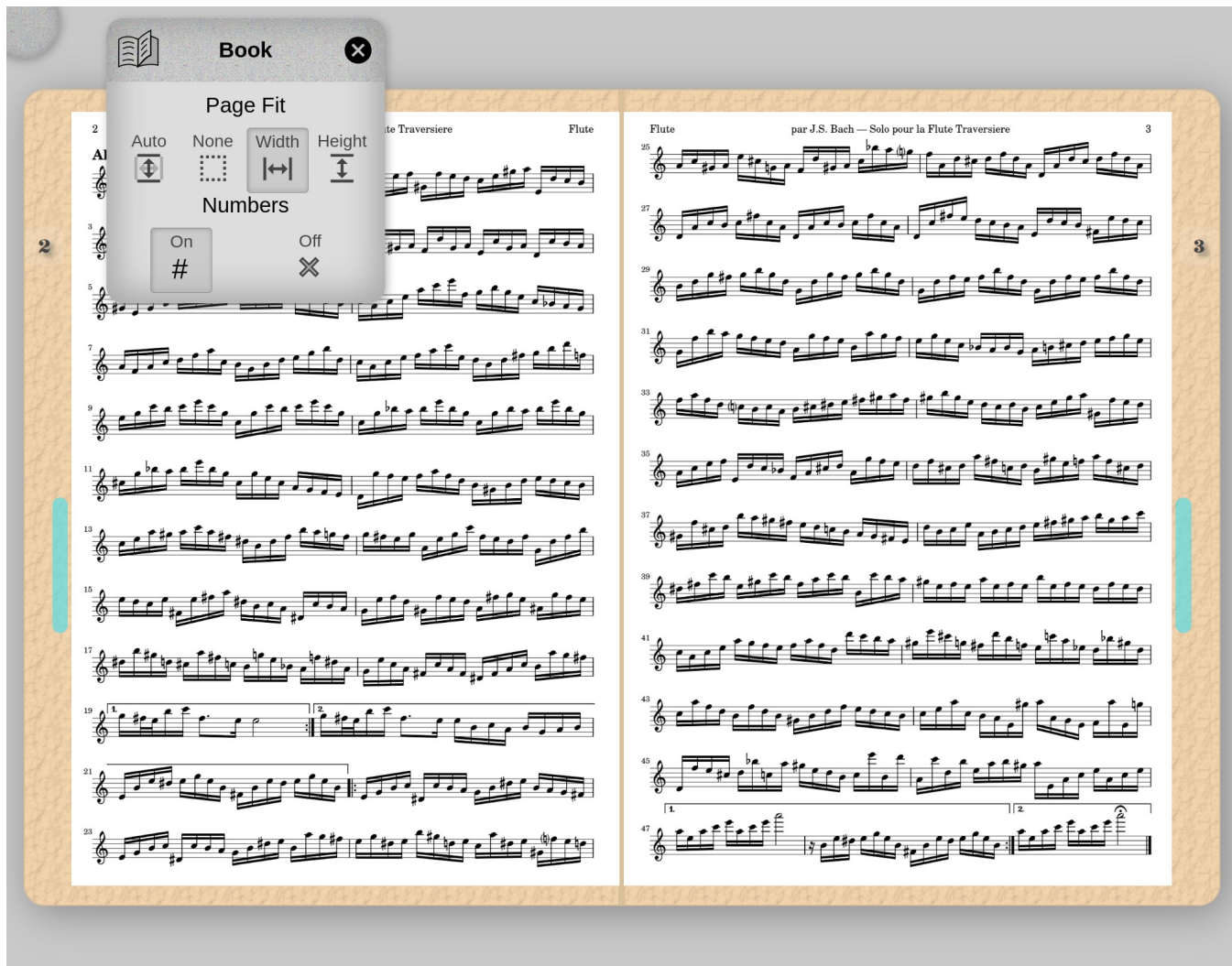
- Turn pages by flinging (i.e. touch→drag→release, all in one quick motion), or by more deliberate dragging. When dragging, if you release without dragging *past* the central spine, the dragged page will flop back to its original position.

- The Book Panel's buttons determine the score's initial sizing:
  - None: sized as indicated in pdf file. Podium maps pdf "points" 1:1 with "CSS pixels".
  - Width: sized to fit the width of the screen.
  - Height: sized to fit the height of the screen.
  - Auto: picks between Width or Height such that the entire score is on screen.

- After the initial layout, use 2 fingers to pan-zoom the score to move/resize as desired.

- Page numbers can be turned on or off in the Book panel. Current page numbers are shown at the left and right sides of the layout: drag the page number to quickly flip to other pages.

- Long-press on a page number to set a bookmark. Bookmarks appear as colored tabs on the book jacket. Press on any bookmark to jump there. Long-press on any bookmark to remove it.

    Note: physical books must have an even number of pages, as each page has 2 sides. If the PDF score file contains an odd-number of pages, the layout acts as if the last page is "glued" to the back inside cover of the book, and it can't be flipped.

Layout Ring: Horizontal

Display the score as a continuous, horizontally-scrollable flow of pages.
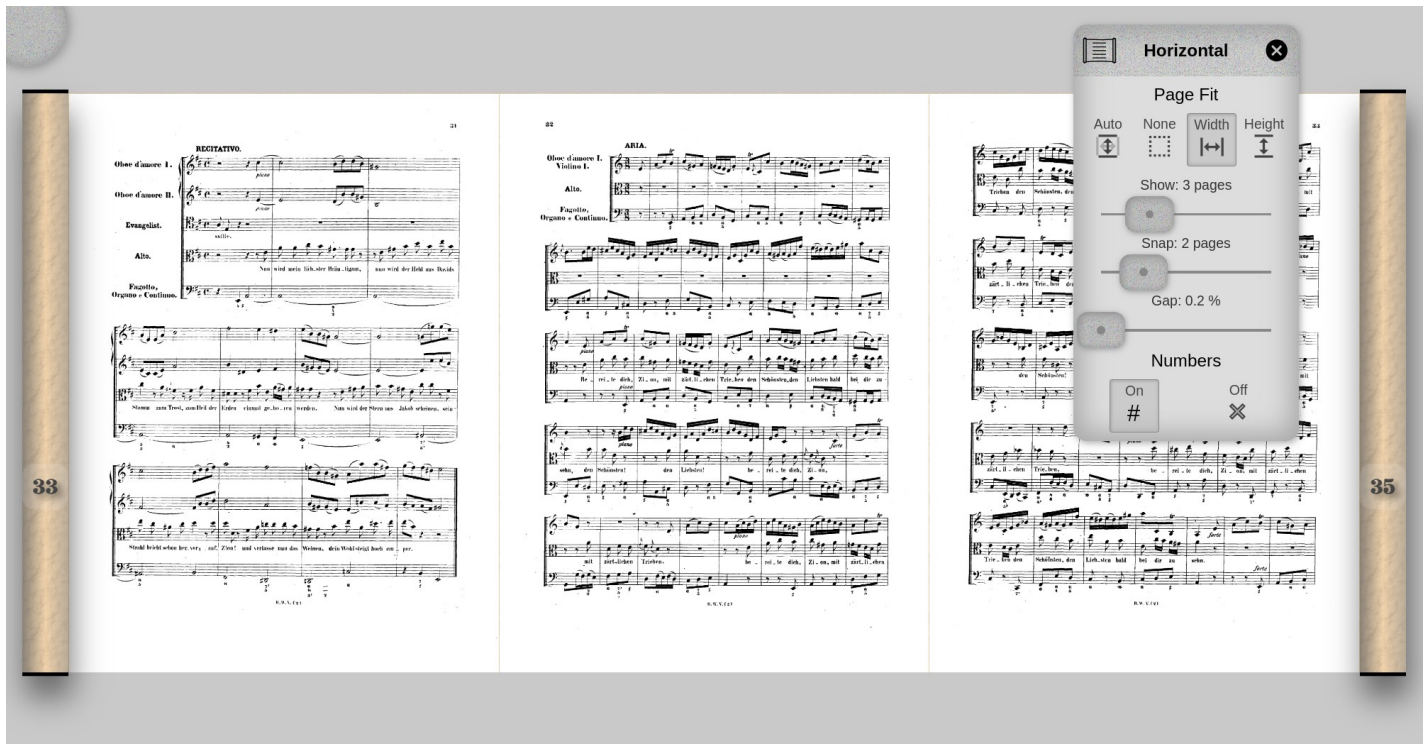
- The Horizontal panel's *Fit* radio buttons determine the layout's initial size:
  - None: sized as indicated in pdf file. Technically, podium maps pdf "points" 1:1 with "CSS pixels".
  - Width: sized to fit the width of the screen.
  - Height: sized to fit the height of the screen.
  - Auto: picks between Width or Height such that the entire score is on screen.

- After initial layout, pinch-zoom the score to resize/move as desired.

- The panel's *Show*: slider determines how many pages are visible at a time (from 1-8)

- The panel's Gap slider determines how much space to leave around each page, as a percentage of the page's width.

- Scroll pages by dragging or flinging. The panel's *Snap*: slider determines how many pages the scroll advances when a page is dragged or flung, ensuring that after a scroll, the leftmost and rightmost pages align with the left and right scrollers.

- Move the *Snap*: slider all the way to the left to completely disable page snapping.

- Page numbers can be turned on or off in the panel. Current page numbers are shown at the left and right sides of the layout: drag the page number to quickly scroll to other pages.

- Long-press on a page number to set a bookmark. Bookmarks appear as colored tabs on the book jacket. Press on any bookmark to jump there. Long-press on any bookmark to remove it.

Layout Ring: Vertical

Display the score as a continuous, vertically-scrollable flow of pages.
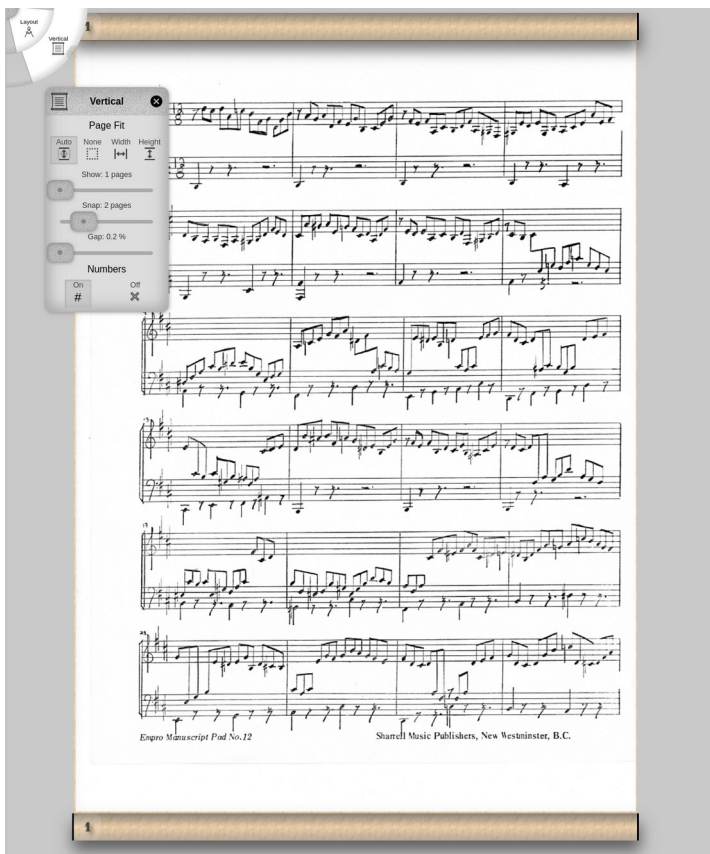

Settings for this layout function identically to the Horizontal Layout, see previous page.

> Note: For viewing on a smartphone or small tablet, Vertical layout often gives the best experience. Activate full-screen mode, turn off Numbers, set *Page Fit: Width*, *Show: 1 page*, and *Snap: disabled*, as shown below on an Android phone. Then thumb-scroll through the score. In real-world use, you'd likely dismiss the Panel, either by clicking the close button's X, or by simply flinging the panel.
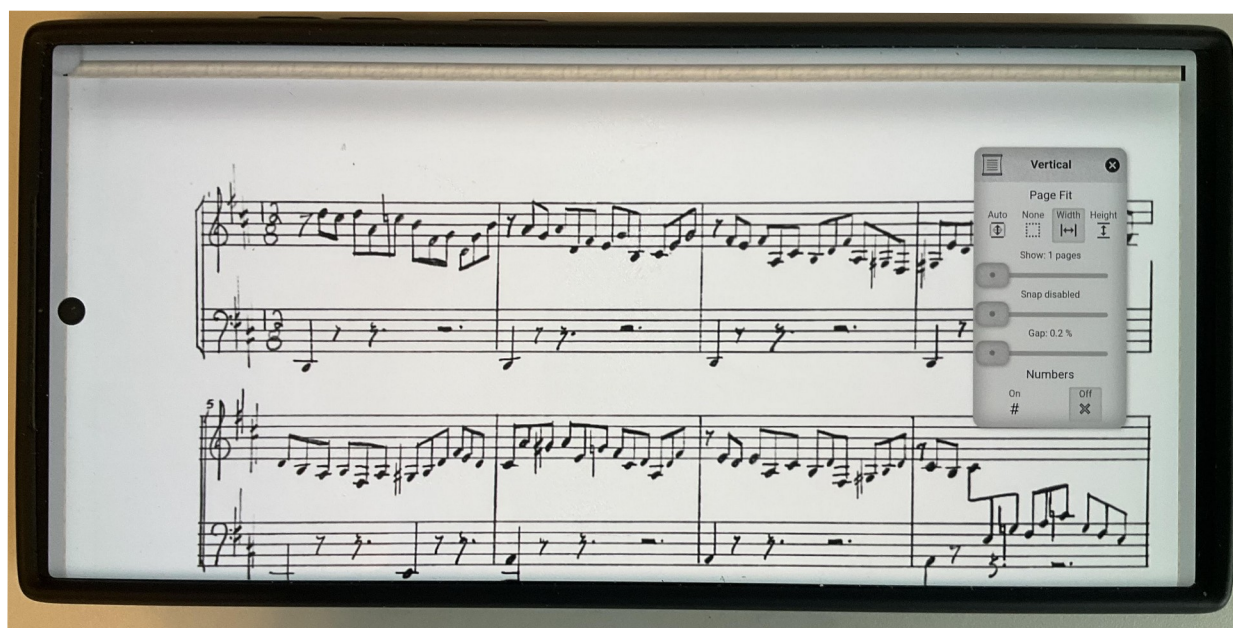
Layout Ring: Table

Display all pages of the score in a single table.
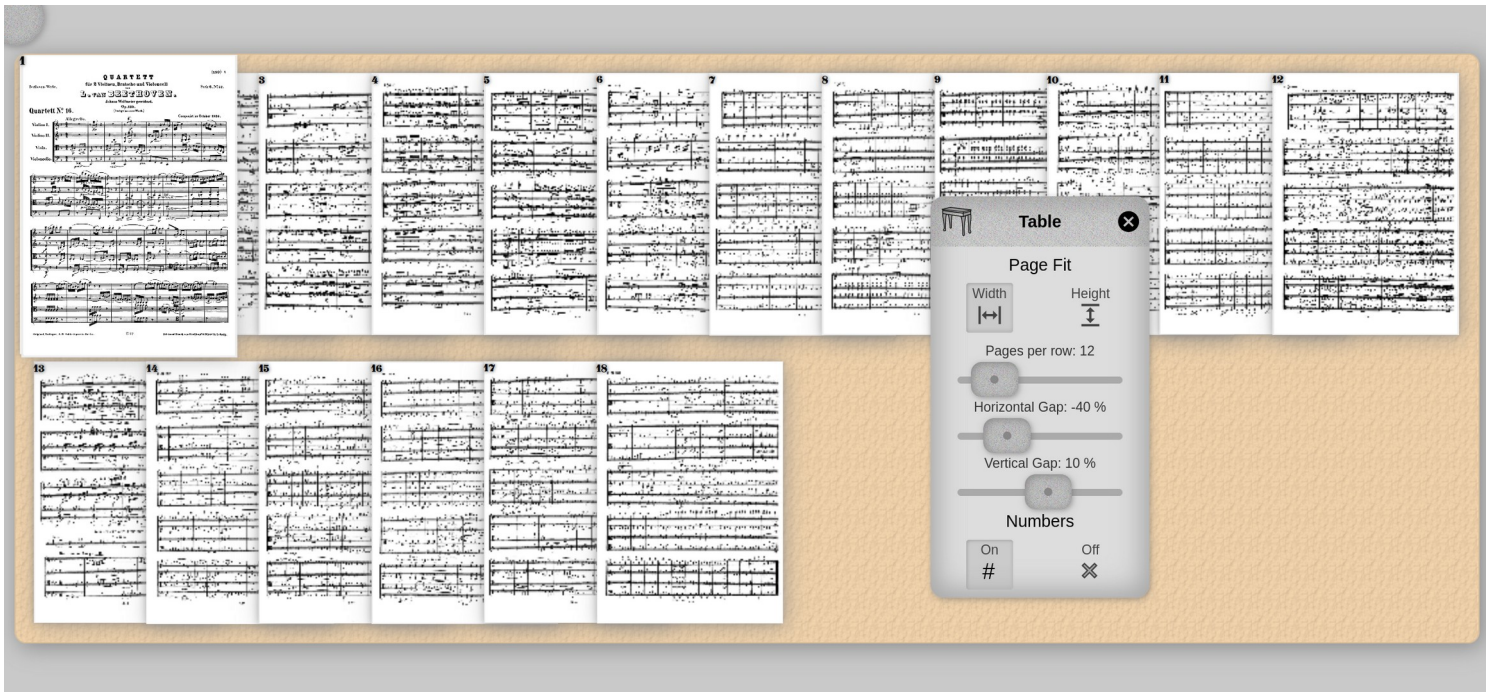
- Convenient for adding or rearranging pages (using the Page Ring), or for quickly locating a page in a large score.

    Note: to ease memory usage, the Layout Ring shows low-resolution copies of all pages except the *current* page (see below). These copies must all be generated before the Table Layout can be drawn: this may take several seconds to several minutes, depending on the score size.

- The panel's *Fit* radio buttons determine the layout's initial size:
    - Width: sized to fit the width of the screen.
    - Height: sized to fit the height of the screen.

- After initial layout, pinch-zoom the score to resize/move as desired.

- The panel's *Pager per row*: slider determines how many pages are shown in each row.

- The panel's *Horizontal Gap* slider determines the horizontal gap between neighbouring pages, as a percentage of the page's width. Setting this to a negative value causes the pages to be displayed overlapping each other.

- The panel's *Vertical Gap* slider determines the horizontal gap between neighbouring pages, as a percentage of the page's height. Setting this to a negative value causes the pages to be displayed overlapping each other.

- At any time, there is always a *current* page, drawn slightly larger and over top of all other pages. If you change to another layout, that layout will open at the *current* page.

    Note: when using the functions of the Ink ring, they will only effect the *current* page.
- New in vs1.1: you can now drag pages in the table layout to rearrange them. Dragging a page off of the table will delete it...see the v1.1 addendum for further changes.

Ink Ring

Add annotations to a score.

The Ink Ring's cells add annotation objects—staves, music symbols, text boxes, external images, and line drawings—to score pages. Tap any cell to activate it, then touch any score page to start drawing, to insert a symbol, image, or text box, or to perform any of the Ring's other actions: cut, copy, paste, grid, or transform.

> **NOTE:** Normally, any gestures made on score pages are interpreted as page navigation commands. However, if the Ink Ring is selected, and if it has an activated cell, that cell's action will be performed instead.

> **NOTE:** When an Ink Ring Cell is activated, it stays active until tapped again, or until a different Ink Ring Cell is activated. As a safety feature, cells "auto de-activate" after about 4 seconds of inactivity. See Addendum V1.1 at the end of this document for more details.
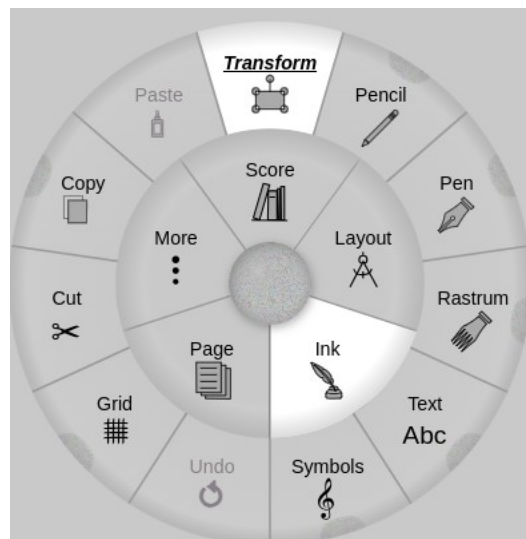
- Cut, Copy, Paste: Each annotation is an independent object that can be cut, copied, pasted, or transformed. To cut or copy an object, tap the Cut or Copy cell, then tap the target object on the score page. Then, if desired, tap the Paste cell, then tap the score page where you want to paste the previously Cut/Copied object.

  > **Note**: the Copy cell has an associated Open Panel that can be used to select an external *png* or *jpeg* image file from digital storage. Select the desired image file, then use the Paste cell to convert that image into an annotation object that can be pasted into a score page.

- Transform: while active, tapping on any existing annotation allows it to be selected, moved, rotated, or resized.

- Pencil, Pen: line drawing tools. They are functionally identical; however, using their associated panels, they can be configured differently (color, line width, etc) so that two different lines types are immediately available for use.

- Rastrum: A tool for drawing staves. More generally, a tool that draws a settable number of parallel lines, either horizontally or vertically. Consequently, the tool can also be used for medieval/renaissance staves, lute and guitar tablatures, chord diagrams, and so on.

- Text: adds editable, multi-line text boxes to a page.

- Symbols: adds individual music symbols. The Symbol cell's panel provides access to the several thousand music glyphs contained in the included Bravura music font.

- Undo: Undo the last Ink Ring action. To undo an action, activate the undo cell, then tap the page to revert it to its state before the last action. To conserve memory, only the most recent 10 actions per page can be undone.

- Grid: Displays a configurable drawing grid over the page.

Ink Ring: Pen, Pencil

Draw lines on score pages.
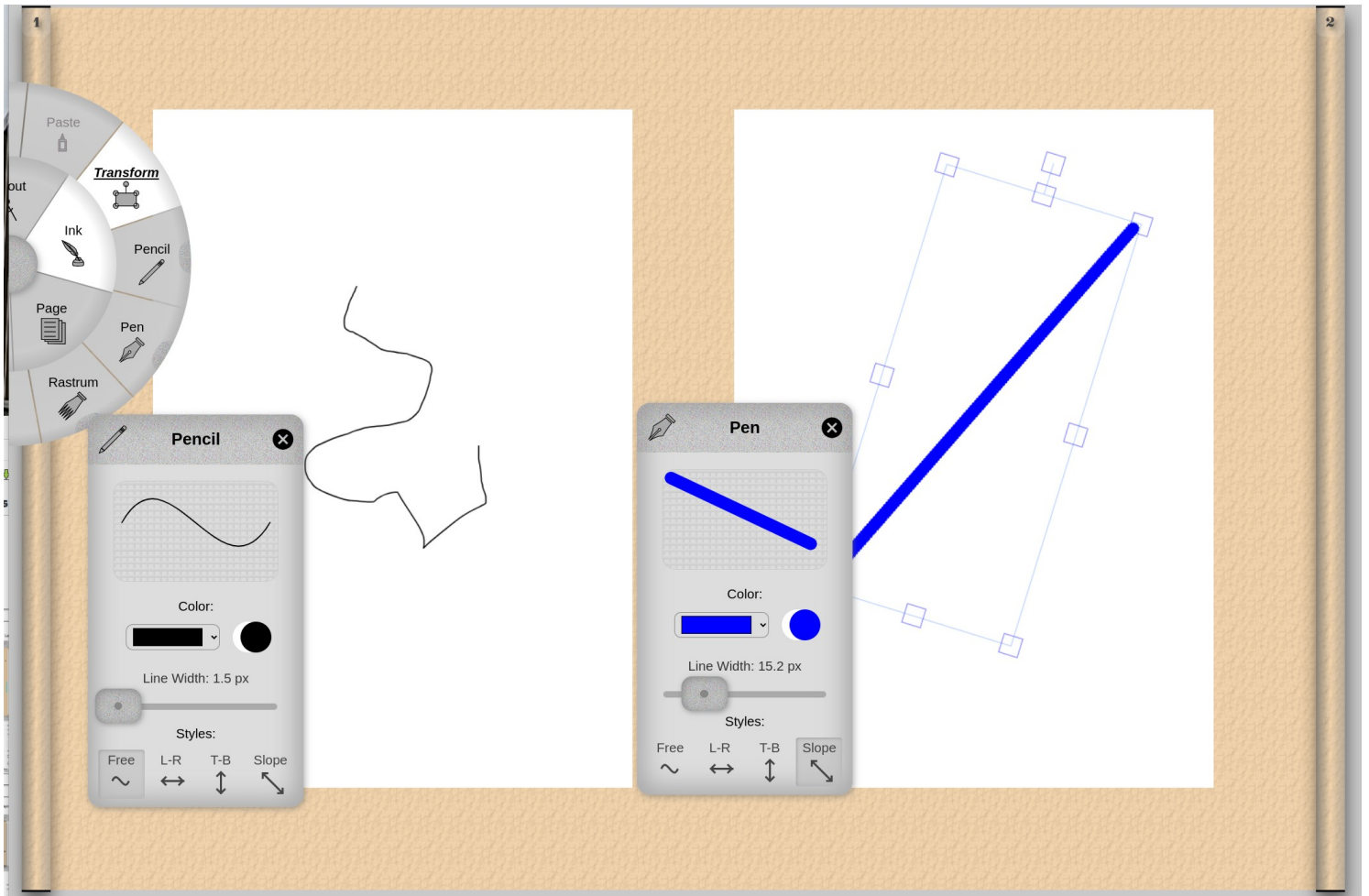
- The Pen and Pencil Tools have identical functionality. Configure them independently: that way, two unique line-drawing styles will be readily available.

- Tap on the color swatch in the Panel to invoke the Browser's native color chooser.

- Tap on the interlocking circles in the Panel to reveal a slider that adjusts opacity.

- Buttons on the bottom effect how the lines are drawn:

    - Free: unconstrained drawing.
    - L-R: constrained to horizontal, left to right straight lines.
    - T-B: constrained to vertical, top to bottom straight lines.
    - Slope: constrained to angled straight lines

Ink Ring: Text, Symbols

Add text boxes and music symbols to a page.
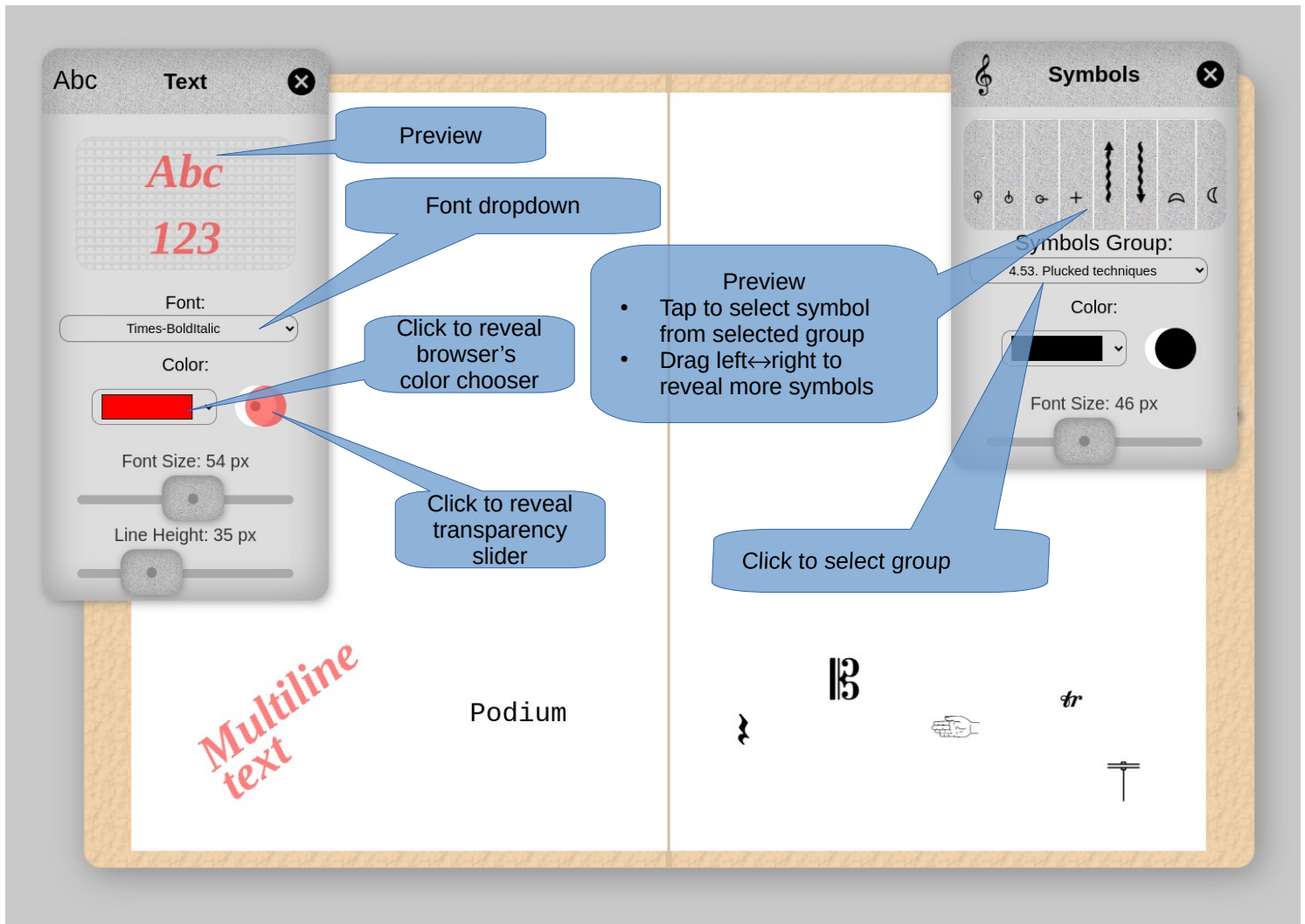
Text panel:
- Set (inter) line height for multi-line text.
- Choose from any of the 14 standard pdf fonts, plus the Bravura font.

Symbols Panel:
- Symbols are arranged in groups as defined by the Standard Music Font Layout (SMuFL), see:

    https://w3c.github.io/smufl

- Choose a Symbols Group from drop down, then tap to select a symbol in the Preview. Note that most groups have many more symbols then are visible in the preview: drag left↔right to see them all.

Ink Ring: Rastrum

Draw music staves.

Staff with 4 bars

Staff with no bars

Plainchant staff

Tablature

Chord Charts

Artistic uses!

Rastrum

Color:

Lines: 5

Line Width: 1 px

Line Spacing: 7 px

Bars: 1

Styles:

L-R ↔   T-B ↕
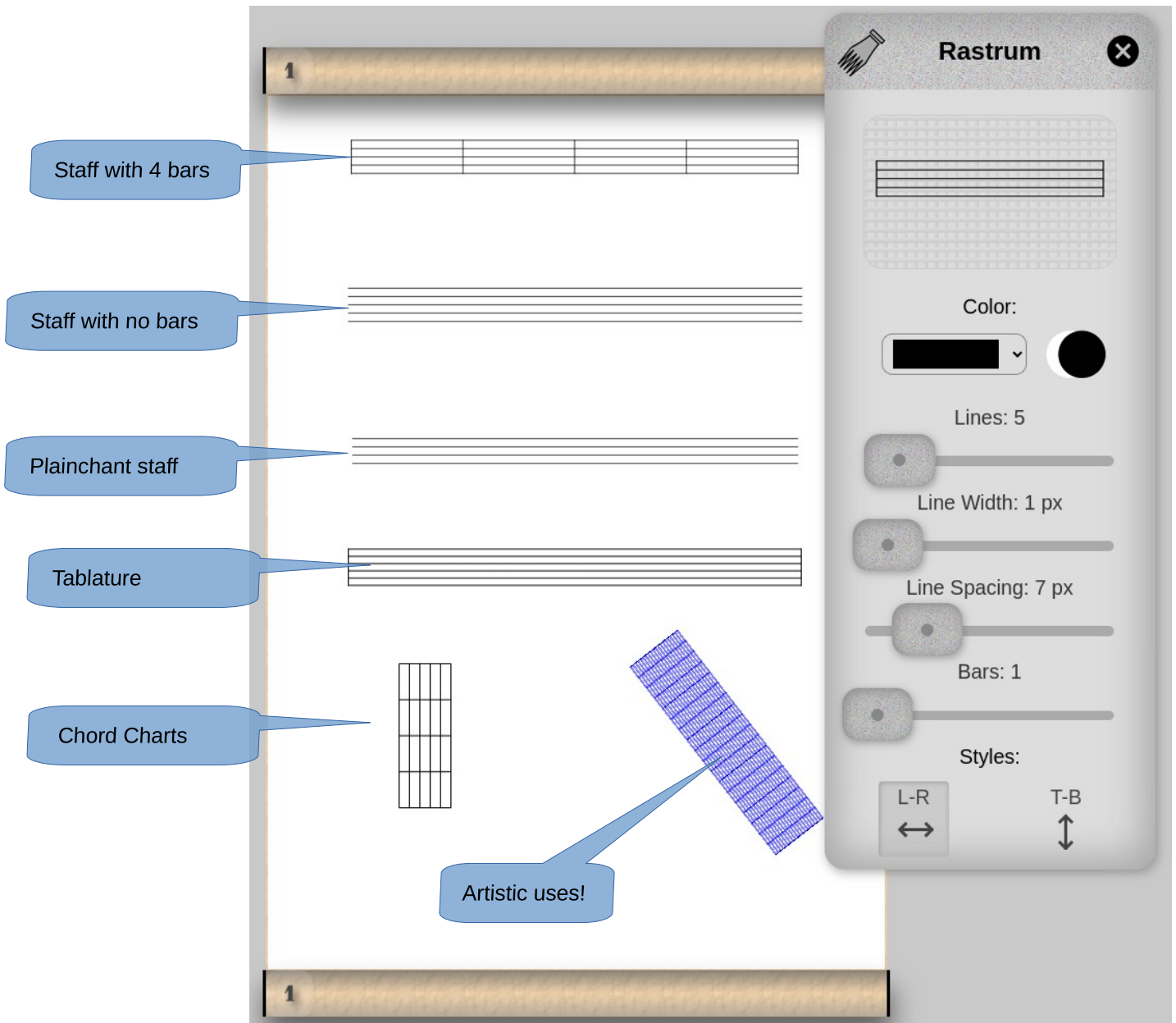
In the physical world, a rastrum is a 5-pointed pen for ruling manuscript paper.

• Podium's Rastrum draws multiple lines, with potentially multiple bar lines.

• The tool is used by first touching the page, then dragging to define the rastrum object's length.

• Set the style to L-R or T-B to draw horizontally or vertically. Once drawn, a rastrum object can always be rotated using the Transform tool.

Ink Ring: Grid

Draw a 2-d guide grid for measuring and layout.
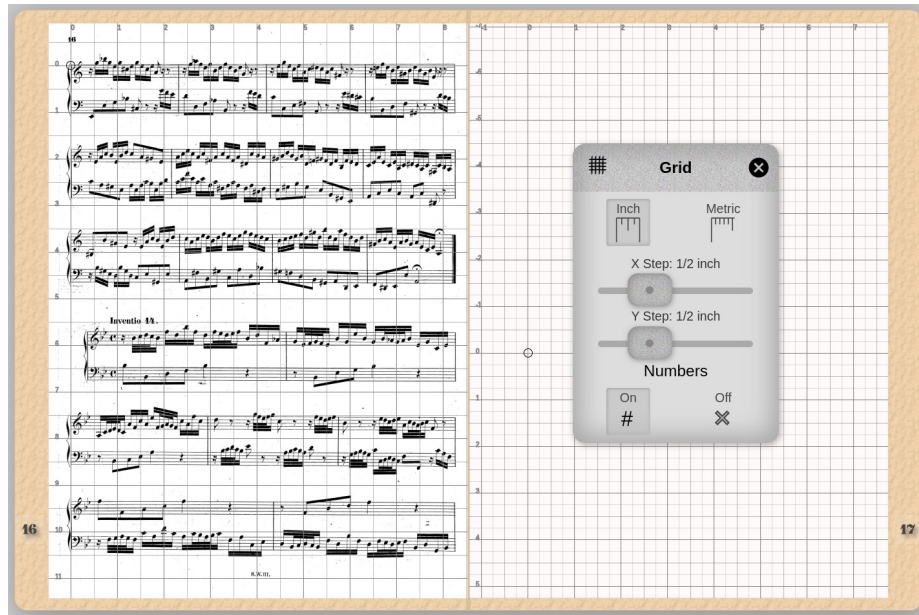
- The Grid panel can be configured using Metric or Imperial (inch) units.
- The Grid is 2-dimensional: adjust the X and Y Step sliders to change distance between grid lines.
- To precisely position the Grid, first activate the Grid cell, then touch the score. Before releasing this touch, the position of the grid will follow your touch. Use this to align the grid with current features of the score page.
- When Numbers is On, labels on the grid lines show the distance from the origin, marked with a "o".

Ink Ring: Transform

Transform (move, resize, rotate) objects.
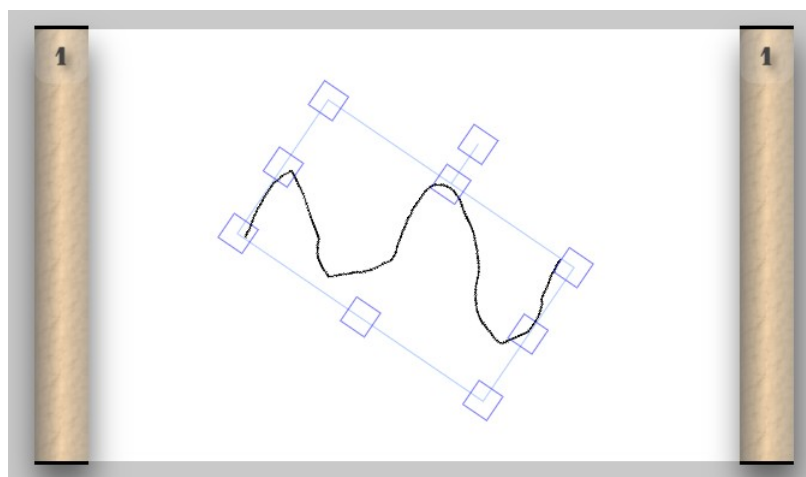
- With the Transform cell activated, select an object by touching it,or by sweeping a rectangle around it.
- Move the rectangular handles to resize/rotate the object:
- Top handle: rotate object.
- Corner handles: resize, preserving object's aspect ratio.
- Middle handles: resize, stretching object's aspect ratio.
- Touch-drag within the object to move it.

Page Ring

Manage the pages and page numbers of a score.

> **NOTE:** Normally, any gestures made on score pages are interpreted as page navigation commands. However, if the Page Ring is selected, and if it has an activated cell, that cell's action will be performed instead.

> **NOTE:** When a Page Ring Cell is activated, it stays active until tapped again, or until a different Page Ring Cell is activated. New in vs.1.1: as a safety feature, cells "auto de-activate" after about 4 seconds of inactivity. See Addendum V1.1 at the end of this document for more details..
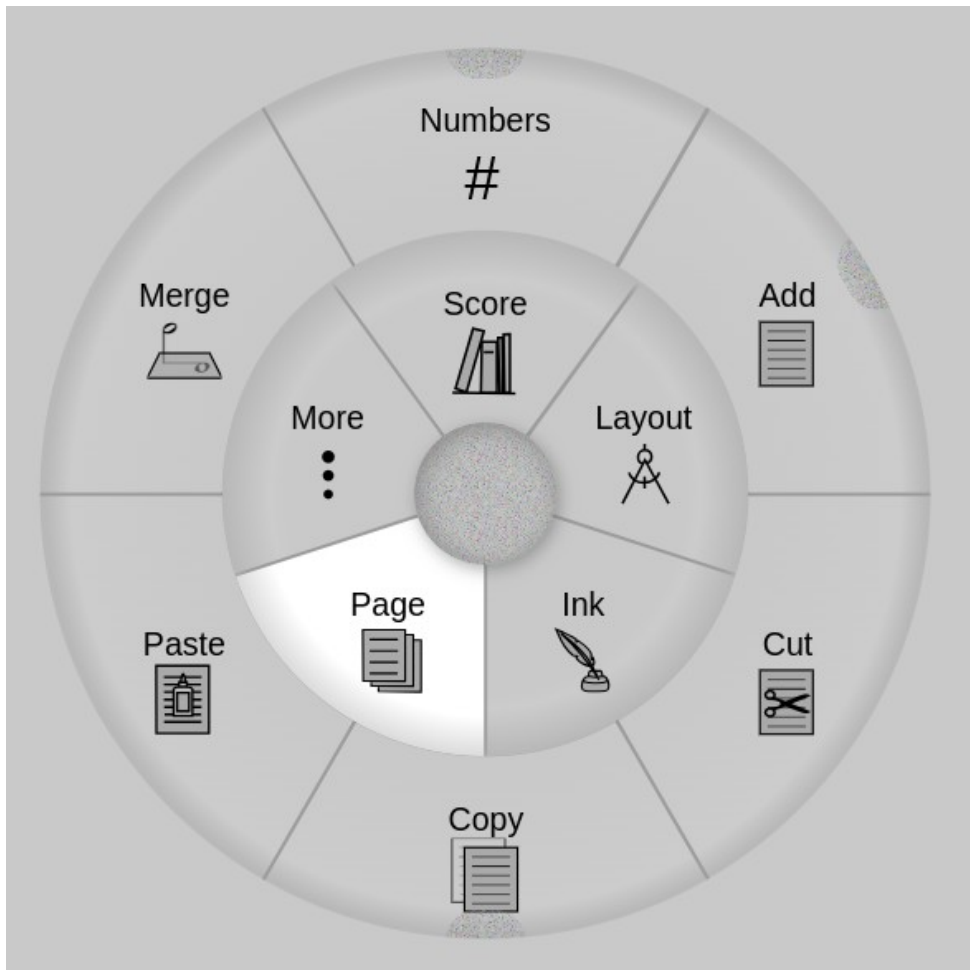
- Add: Insert a new, empty page into the score, as configured by the Add Panel.

- Cut, Copy, Paste: Activate the Cut (or Copy) cell, then touch the score page you wish to cut (or copy). Next, activate the Paste cell, then tap a score page. If the tap is on the *left* side of the page, the cut (or copied) page is inserted *before* the tapped page, else it is inserted *after*. (For Vertical Layout only: touch *above* the middle of the score page to insert before, or *below* the middle to insert *after)*. Note that there is no Delete Page operation: instead, cut the desired page, then skip any subsequent paste.

- Merge: A merge operation merges all Ink objects on the tapped page into the page itself. After merging, those objects can no longer be transformed: they are no longer treated as annotations, becoming instead integral parts of the score. Because this operation cannot be undone, you'll be prompted to confirm before the operation is committed

- Numbers: Drag out to reveal a panel that displays and configures score page numbers.

Page Ring: Numbers

Show/set the score's *effective* current page number and configure how page numbers are counted.
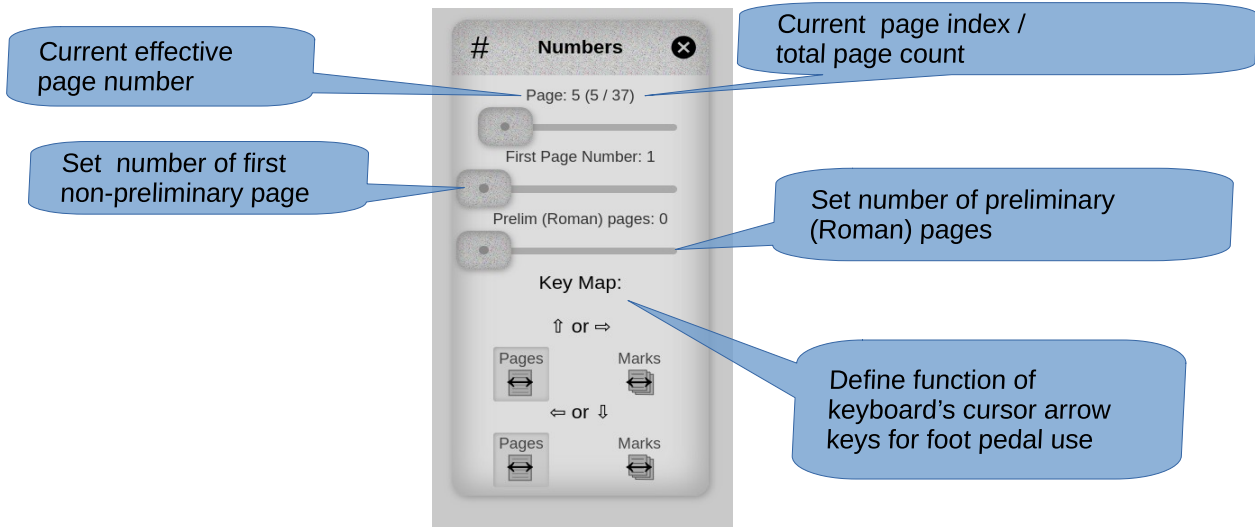
The *Effective* page is the page number Podium displays in the layout's margins. This can be different from the page's 1-based sequence number. It is determined by combining the *sequential page index* (1st page, 2nd page, etc) with these two settings:

- First Page Number: the number to assign to the first *non-preliminary* page. Normally 1, but this often does not match the page number in the PDF, if any. For example, when sections of a larger score are converted to PDF, the first sequential page index in the PDF file might well display a page number other than 1. This is especially problematic when the PDF has a table of contents or other preliminary material, because the page references don't align with sequential page indices.

- The number of preliminary pages (title page, contents, copyright, and other introductory material). Podium adopts the convention that such pages are displayed using lower-case Roman numerals.

The Numbers panel's *First Page Number* and *Prelim (Roman) Pages* sliders allow you to correct for such mismatches. To illustrate, the following layout shows an excerpt from Bach's first Cello Suite. Though the page's sequential indices are 1,2, and 3, the first numbered page (i.e. the middle page in the layout below) is numbered 69 in the PDF. To align the *effective* page numbers the PDF, set the *First Page Number* value to 69, and set the "Prelim (Roman) Pages" value to 1. Accordingly, Podium displays the roman numeral *i* in the left pager, and the arabic number *60* in the right pager. The Panel reports the current page (i.e. the leftmost page) as Roman number *i*, and that this is *sequential* index number *1* out of a total page count of 37:

Page Ring: Numbers (continued)

Configure foot pedal support.
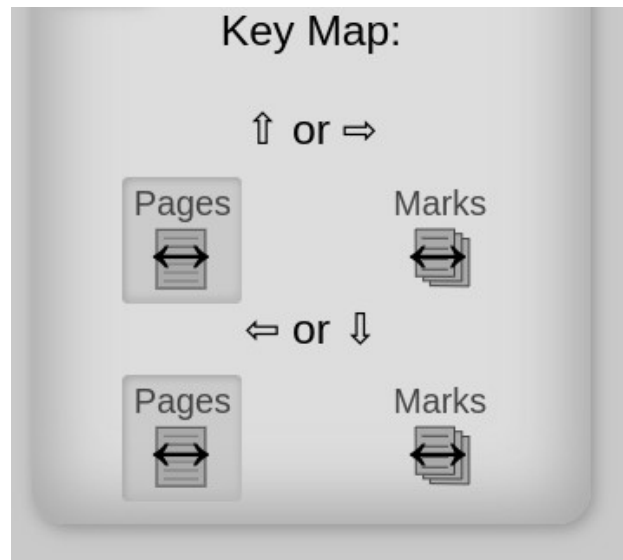
Podium makes limited use of keyboard shortcuts because it is designed to run on devices that might not have a physical keyboard. However, many external foot pedal devices—that is, devices that sit on the floor, enabling score page navigation without removing your hands from your instrument—typically function as virtual Bluetooth keyboards that transmit cursor arrow key codes when their buttons are pressed. Podium's supports such devices by assigning keyboard shortcuts to the cursor arrow keys.

You can assign one shortcut to the *up* or *right cursor* arrow keys, and one to the *left* or *down* cursor arrow keys. Tap the appropriate button to determine if an *up* or *right* key press will navigate to the next *page,* or instead navigate to the next *bookmark*. Similarly, choose the appropriate button to determine if the *left* or *down* keys will navigate to the previous *page,* or navigate to the previous *bookmark*.

> **Note**: these keyboard shortcuts are helpful for reading scores that have repeats spanning several pages. Set a bookmark on the page containing the beginning of the repeated section, then configure the *right* or *up* arrow keys to *Pages*, and the *left* or *down* arrow key to *Marks*. Play through the repeat, using the right arrow key (or its foot pedal equivalent) to navigate forward through the following pages. Then, when you reach the end of the repeated section, use the left arrow key to immediately flip back to the beginning of the repeat.

Page Ring: Add

Configure the appearance of new pages added to the score.
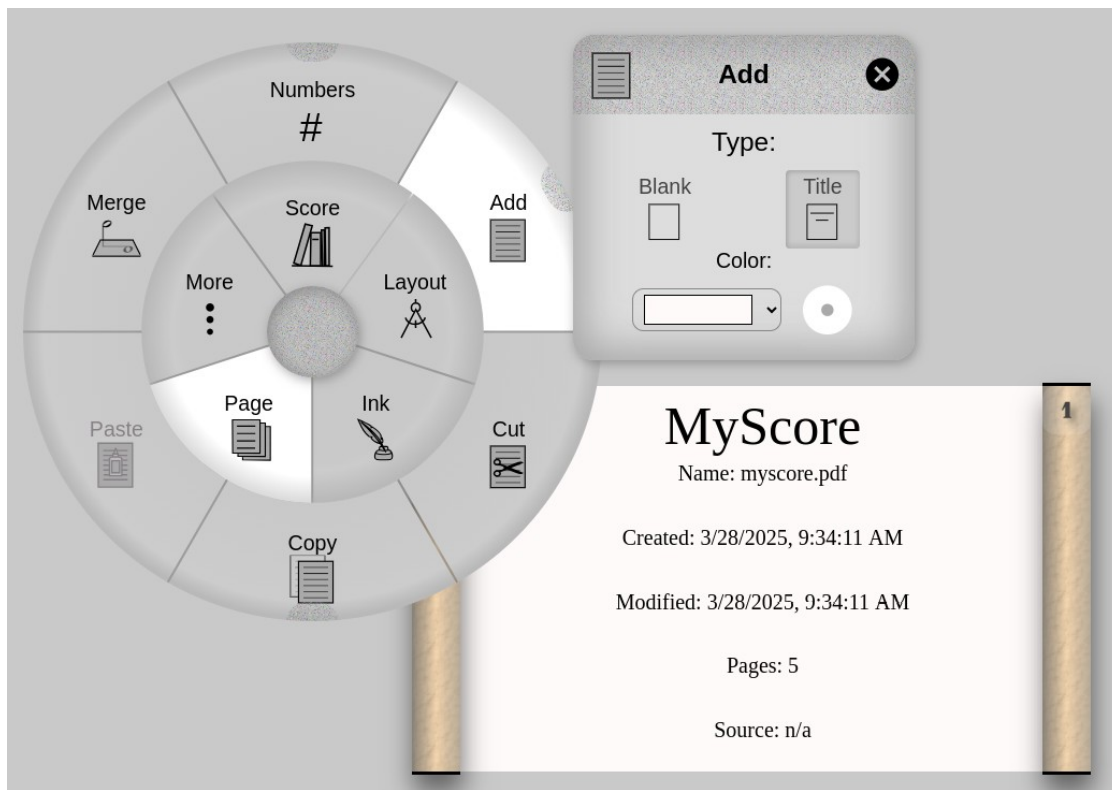

To add a new page to a score, activate the Add cell, then tap on any page in the score. If the tap is on the *left* side of the page, the new page is added *before* the tapped page, else it is added *after*. (For Vertical Layout only: tap *above* the middle of the score page to add before, or *below* the middle to add *after)*.

The Add Panel is used to configure the color and type of added pages:

- To configure the color and opacity of added pages:
  - Tap on the Color drop-down to launch the browser's native color chooser.
  - Tap on the double circle to launch a slider that sets the page's opacity.

- To configure the content of added pages:
  - Select type Blank Type to add blank pages.
  - Select the Title Type to add a page that is pre-populated with score metadata. Each metadata field is actually an annotation object, and can be edited after selecting it with the Transform tool of the Ink Ring.

Page Ring: Merge

Merge a score page's Ink annotations into the PDF.
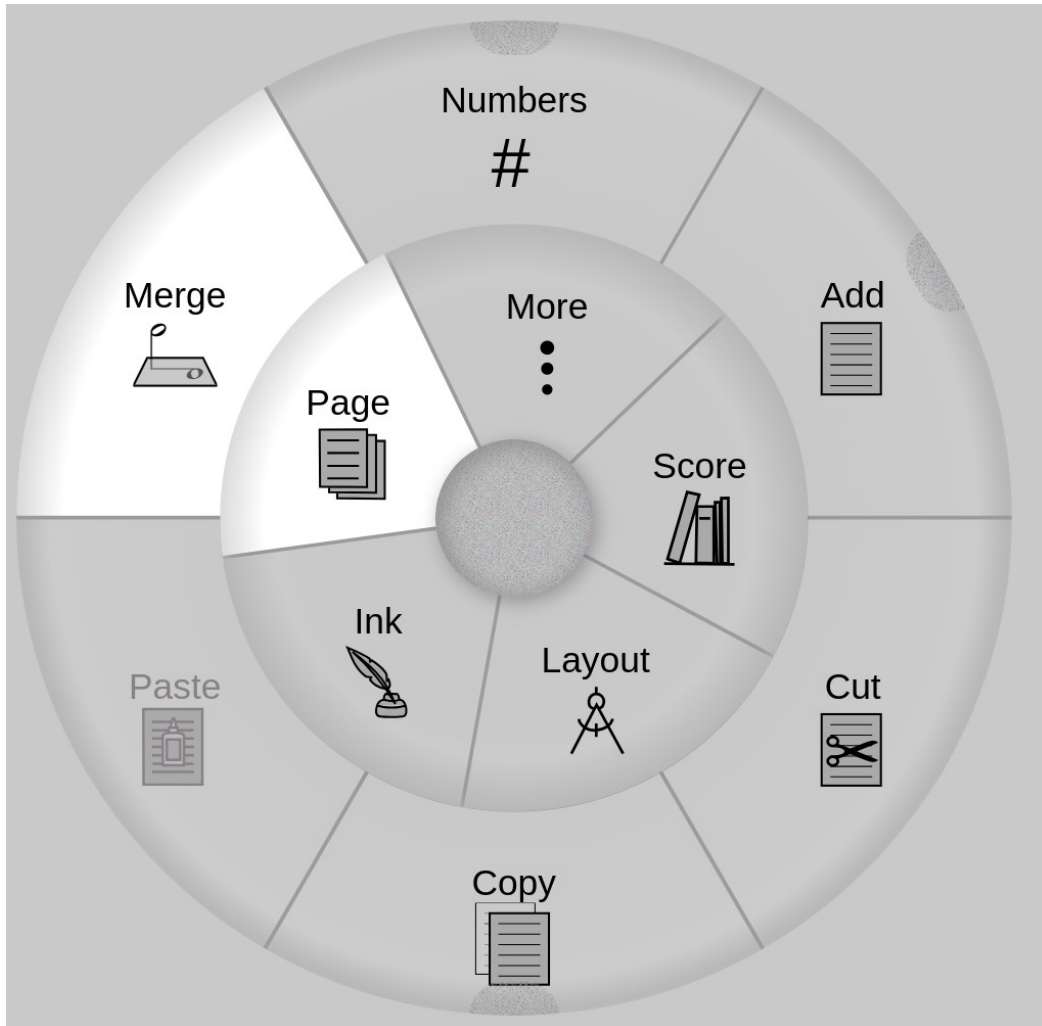
In Podium, each page comprises two overlapping layers:

- A background layer that displays the PDF content of the score [courtesy of the open-source *Mozilla pdf library*].

- An overlay layer that displays Ink objects added to the score [courtesy of the open-source *fabricjs library*].

Activate the Merge cell, then tap a page to *merge* its overlay layer into the background layer. The operation converts all of the page's Ink objects into PDF objects, then incorporates these objects into the background layer [courtesy of the open-source *pdf-lib library*). After that, these merged objects can no longer be selected or edited: they have become an integral part of the score's PDF content.

Merges are oftern very useful. For example, suppose you've used the Ink Ring's Rastrum tool to draw a staff on a page, and you want to use the Pencil and Pen tools to draw on that staff. The drawing will be much easier to edit if you first *Merge* the staff into the background layer. That way, you'll be able to perform edits without accidentally selecting and editing the staff itself.

> **Note**: Because a merge operation cannot be undone, you'll be prompted to confirm before the operation is performed.
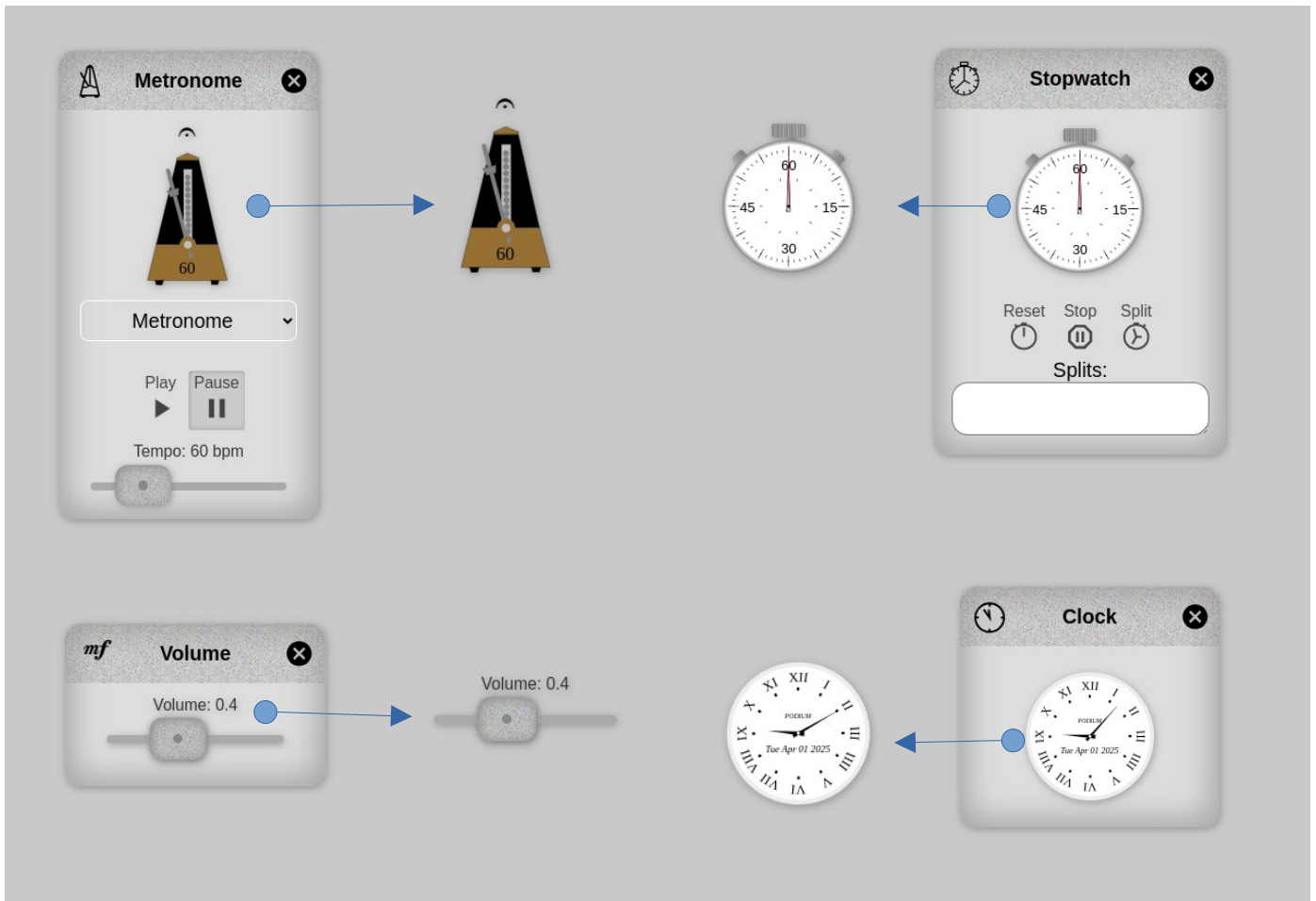
More Ring

Musician's toolkit.
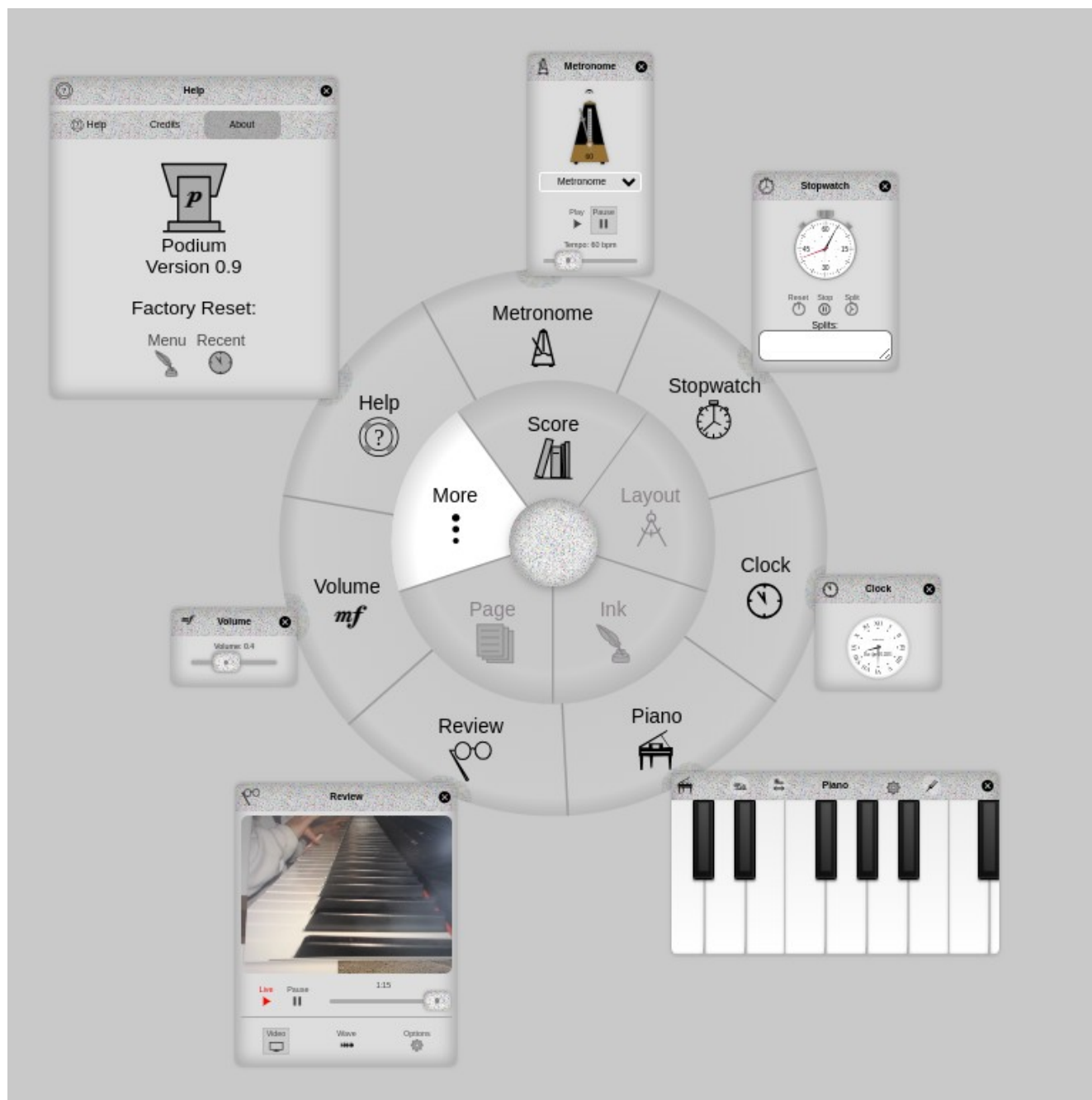
- Animated Metronome
- Stopwatch with splits
- Wall clock with date
- Piano with tuning features
- Review tool: camera and waveform/spectrogram with instant replay
- Volume slider
- Help panel with three tabs:
    - Help
    - Open Source Credits
    - About

More Ring: Detached Panels

Simplify layout by detaching panel contents.

- The graphical contents of the Metronome, Stopwatch, Volume, and Clock Panels can be *detached* from their panels by dragging onto the background.
- Reposition detached panels by touch-dragging.
- To hide a detached panel, simply fling it.
- To close, drag the panel from the menu again, then tap the panel's *x* close button.

More Ring: Metronome

Animated metronome with simulated conductor.
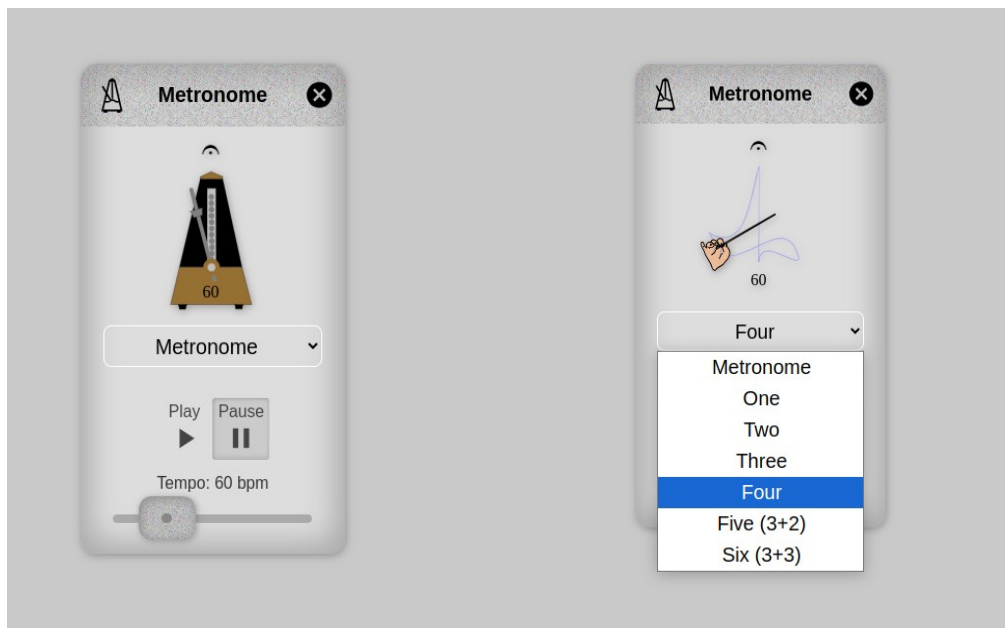
- Use the drop down list to change graphic from traditional metronome to conducting pattern, with six different beat patterns.
- While detached (see previous page), long-press to play/pause.
- While detached, tap on the metronome at the desired speed to set its tempo.

   Note: The conducting patterns are experimental: due to the complexity of the animation, expect some misalignment of the pattern and the animation, particularly on slower devices, and at faster tempos.
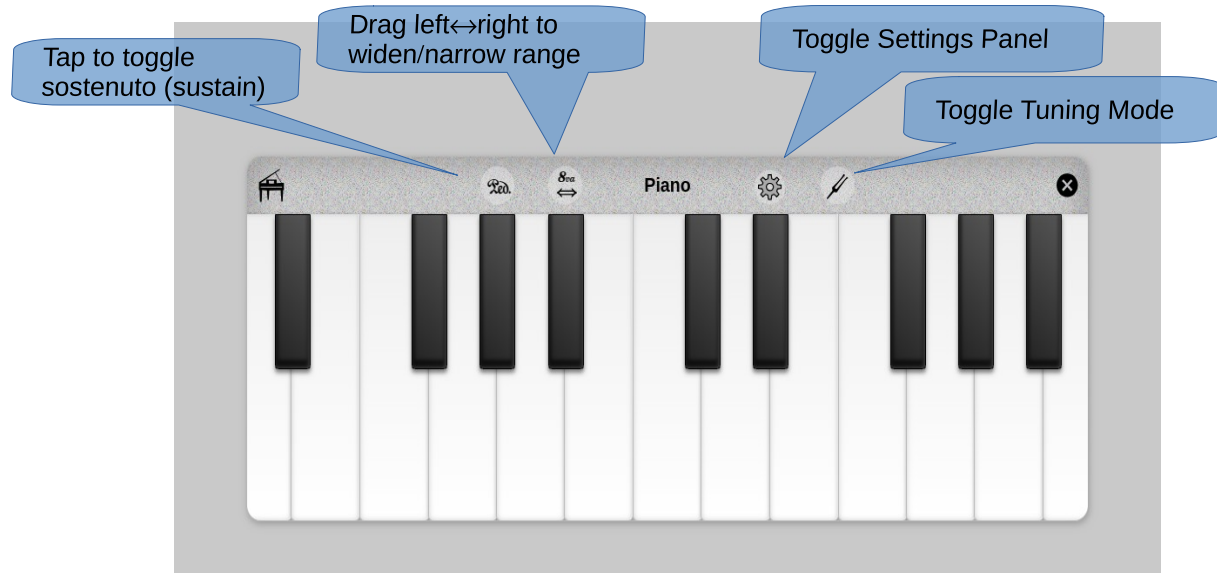
More Ring: Stopwatch

Timer for your practice sessions.
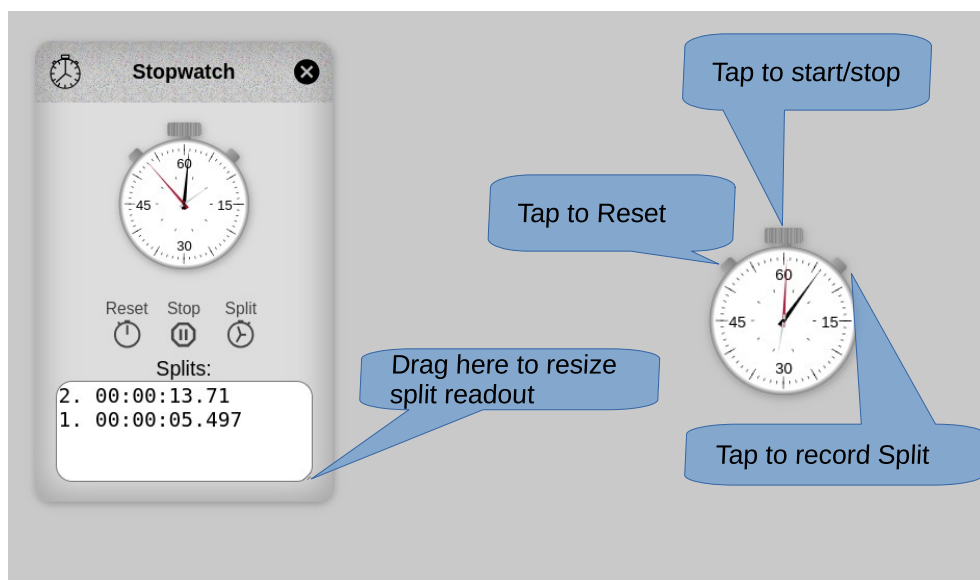
More Ring: Piano

Tune your instrument using this playable piano.

- Drag left↔right from the *8va* button to widen/narrow keyboard range to a maximum of F1-F6, or minimum of E3-A4.

  Note: piano samples make up a significant portion of Podium's download size. For this reason, the maximum keyboard size is limited to 5 octaves, a common size for an 18th century harpsichord or pianoforte. Samples have been truncated and down-sampled, reducing size while maintaining (hopefully) acceptable audio quality.

- Tuning Mode: Tap the *Tuning Mode* button to toggle tuning mode. When enabled, key presses automatically repeat every 2.5 seconds (5 seconds for Tuning Fork timbre, see Settings:Timbre below), as an aid to tuning.

  Note: Podium does not provide an electronic tuner. Instead, Tuning Mode, when coupled with Tuning Fork timbre (see Settings:Timbre below) facilitates tuning through the time-honored "beats" method.

- Settings: Tap the *Toggle Settings* button to toggle the Settings Panel on/off. Once open, you can close it by flinging. This internal panel is always enclosed by the keyboard: drag horizontally to reposition. It has 3 tabs:

  - Pitch: Set the desired frequency of A4 using the slider, or choose any of the 7 presets.
  - Temperament: Choose the desired temperament.
  - Timbre: use the slider to set the maximum number of voices. Select the timbre: Piano or Tuning Fork (i.e. pure Sine Wave).

  Note: Several options include links to explanatory web articles. When choosing option, avoid tapping on these links.
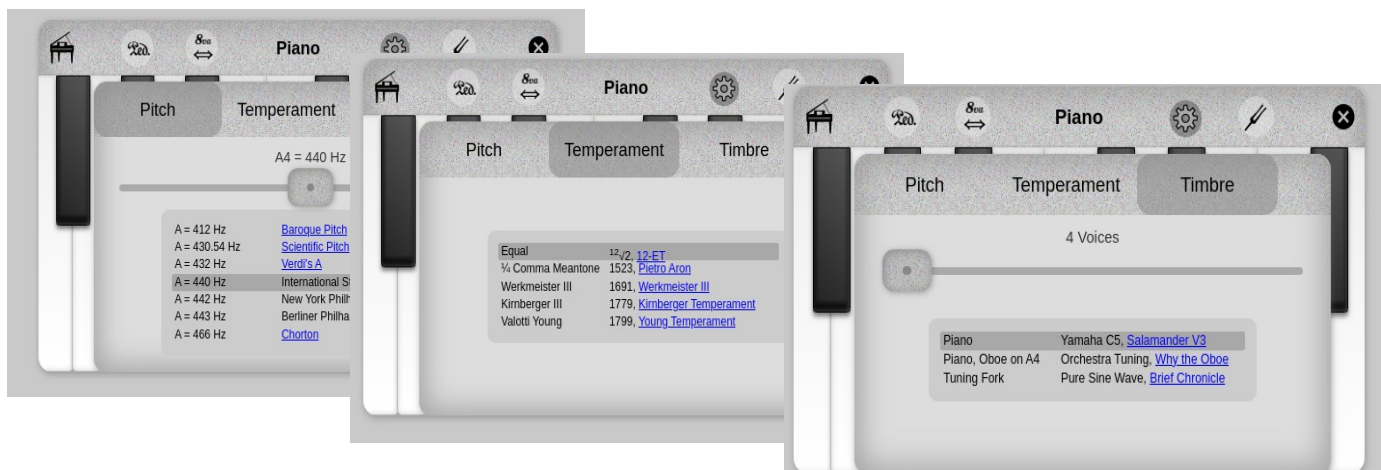
More Ring: Review

Record audio/video with instant replay.
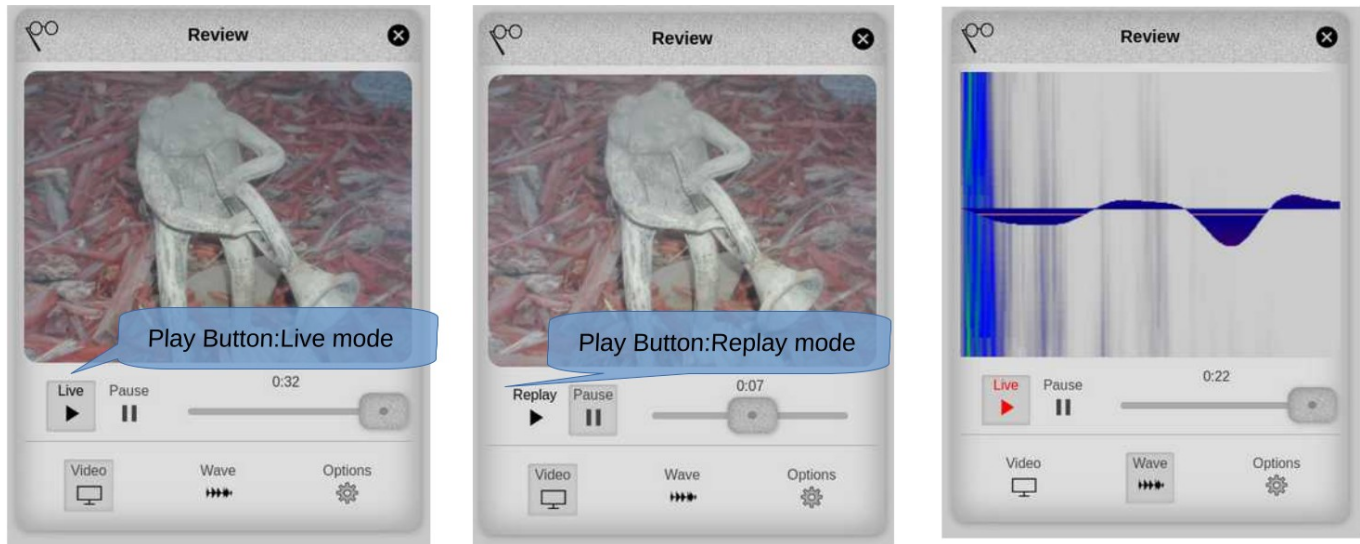
Monitor a device's camera and microphone, with instant replay of the last ~30 seconds (configurable). Optionally view Video or audio waveform, overlaid on a waterfall spectrogram.

> **Note**: The tool is designed for interactive use only. By design, its recordings are transient and discarded when the tool is closed.

At any time, the tool will be in one of two modes:

- Live: audio and video are continuously recorded, and the Play button's text label is Live.
    - When the recording length reaches a preset maximum, the first half of the recording is discarded, but recording continues. You'll always have at least half of the preset maximum available for replay.
    - Pause recording by tapping the Pause button, and resume by tapping the Play button (labeled Live).
      The scrubber will always be at the far right, with its label indicating the recording duration in seconds. This duration will skip backwards by half whenever the first half of the recording is discarded.
    - To enter Playback mode, drag the scrubber to the left. Playback begins at the chosen location.

- Playback: recorded audio and video are played back, and the Play button's text label is "Replay".
    - Pause playback by tapping the Pause button, and resume by tapping the Play Button (labeled Replay).
    - To reenter Playback mode, drag the scrubber to the right, or simply wait until Playback ends. Then tap the Play Button to restart recording. Any previous recording will be lost.
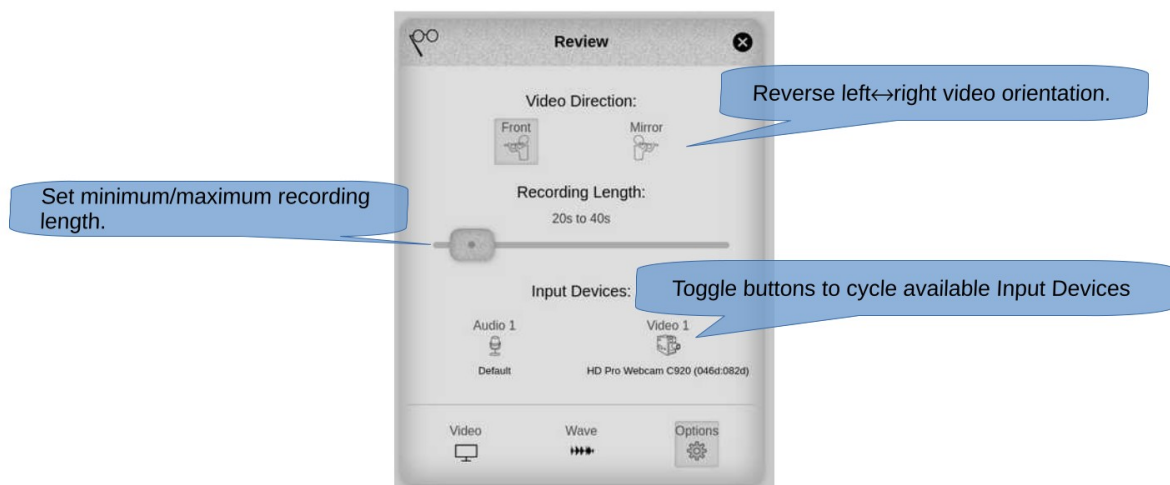
More Ring: Help

A tabbed panel with 4 tabs:

- Help: contains a link to this document.

- Credits: lists of the open source projects used to build Podium.

- License: copyright and license declaration (GNU Affero General Public License)

- About: shows the application's version number, and the Factory Reset buttons:

    The Menu's state, including most Panel settings, is automatically stored in *browser local storage*. This means that, for a given browser, on a given device, these settings will persist across application restarts. However, if you use a different browser and/or device, the settings could well be different.

    > **Note**: the storage mechanism is triggered every time the user interface is tapped. However, to prevent a flood of storage writes, the operation doesn't actually run until 5 seconds of idle time have passed since the last tap.

    The Menu's state is also stored within the score whenever it is saved, and restored when that score is next opened. These settings take precedence over settings found in *browser local storage*. Since these settings are part of the score file itself, they will be the same, regardless of the device or browser in use.

    The Open Panel's list of Recently opened scores is also saved to the browser's local storage whenever it changes. However, this list is kept in the browser's local storage only. Unlike Panel settings, it is never stored within the score. This is because Local files on one device are unlikely to be the same as local files on another device.

    The Menu's state , as well as he Recent list, can be reset to their initial values by tapping the appropriate *Factory Reset* button:

    - Menu: tapping this returns all Panel settings to their default values.

    - Recent: tapping this button clears the Recent Files list from local storage.
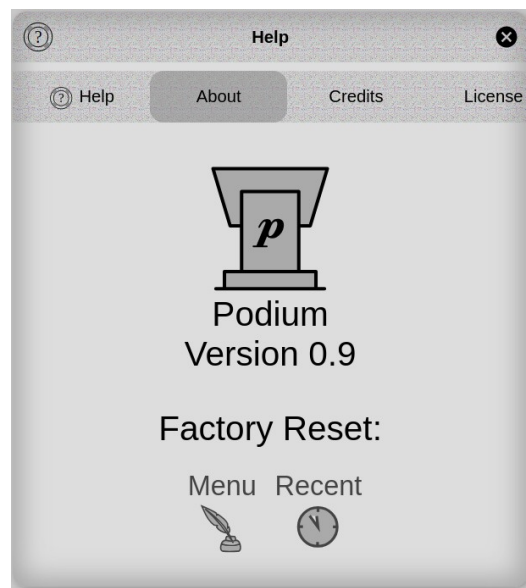
Addendum: V1.1

Major changes for V1.1

- Shared Copy/Paste Buffer (Page ring)

  The Page ring now includes Copy and Paste cells that use a shared buffer stored in your browser's local storage. This means you can copy pages from one score and paste them into another, even across different Podium browser tabs or windows.This feature is useful for combining pages from multiple scores into a single document, extracting individual movements from a larger work, or assembling custom practice sets from various sources.

  To copy a page, navigate to the page you want to copy, select the Copy cell from the Page ring, then touch the chosen page. That page (including any annotations) is stored in the buffer. To paste, open the destination score, navigate to where you want to insert the copied page or pagess, and select Paste from the Page ring. Touch the page you where you want to insert the copied pages: if you touch on the left side, the copied page will be inserted before the current page, otherwise after the current page.

  The buffer can contain multiple pages. Drag out a preview panel from the Paste cell: buttons on the panel allow you to remove the most recently copied page (Undo), or clear the buffer completely (Clear).

  NOTE: Copying pages between pdf files is a relatively expensive operation. To conserve resources, try not to put more than a few pages at a time in the paste buffer, and clear it when not being used.

- Dark Mode (More ring)

  A new Dark Mode option is available in the More ring. When enabled, Podium's interface switches to a darker color scheme that reduces eye strain during long practice sessions or when reading music in low-light environments. Dark mode affects the menu, panels, and background areas while preserving the appearance of your score pages.

- Page Expansion (Score ring → Info)

  When a PDF contains pages of varying sizes, smaller pages can now be expanded to match the largest page in the score. This provides a more consistent viewing experience, particularly useful for scores where some pages were scanned at different resolutions or cropped differently.

  To expand pages, open the Info panel from the Score ring. You'll find the expansion option there, which will resize all smaller pages to fill the available space.

- Page Management (Layout ring → Table)

  The Table layout now supports drag-and-drop page management. You can reorder pages by dragging a thumbnail to a new position within the table. The page will be moved to the location where you drop it.

  To delete a page, drag its thumbnail off the edge of the table layout. This removes the page from the score. As a safety measure, you can undo accidental deletions by using the Undo function, or by reloading the original file without saving.

- New Fonts (Ink ring → Text)

  Two new font options are available for text annotations:
    - Vercetti - A clean, modern font suitable for titles and labels
    - Patrick Hand - A handwritten-style font that blends naturally with handwritten annotations and gives a more personal, informal appearance to your notes

- Auto-off Safety Feature

  To prevent accidental actions, cells in the Page and Ink rings now automatically deactivate after approximately 4 seconds of inactivity. This means if you select a potentially destructive action (like delete) but then get distracted or change your mind, the cell will deactivate on its own.

  This safety feature helps prevent accidents like unintentionally deleting a page when you meant to flip pages, or applying the wrong ink tool because a previous selection was still active.

About the Author

I'm a Canadian software engineer living in Colorado. Originally a classical guitar wannabe, I studied music theory / computer music at McGill U and Stanford U (CCRMA). After ~30 years in the software industry, I now devote way too much of my free time to various music projects.

-glen diener

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