

Pyware 3D User Guide

Manual

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Pygraphics

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Pyware 3D User Guide

Welcome to Pyware 3D – the complete drill designing tool. We at Pygraphics, Inc. wish to express our gratitude to you who have supported our products and company by allowing us to serve your software needs for more than three decades. Our hope is that this program will become an invaluable tool in your drill designing efforts.

This is the home page of the Pyware 3D User Guide. All pages in the User Guide have a navigation bar on the left of the screen. Select the topic you would like to review by choosing its corresponding button on the navigation bar. You can also search for topics, key words or phrases in the search box above. The entire contents of this guide can be downloaded as a PDF so you may print a physical copy. Download the PDF from the link just below the topics on the left side of your screen.

Adjusting to the many innovative concepts of 3D will take a minimum amount of time, however, we do urge that you work through the [Tutorial](#) in order to better understand the concepts behind 3D.

Pyware™ 3D was inspired by video animators and a “wish list” of input from “end users”. You will begin to create, evaluate, and instruct drill never thought possible. In short...you’ll soon be wondering how you got along without it.

Basic Concepts

In this section you will learn the main windows of Pyware 3D and many of the terms that are to be used throughout the application and manual.

You can access the sub-topics by expanding the list in the Table of Contents, or by clicking through to the next sub-topic below.

Getting Started With 3D

3D is always started by choosing the 3D application on your computer from your group of programs. 3D will not start by selecting a 3D drill file directly. You must launch 3D first, then choose New or Open from 3D's File menu.

On Windows, you will find 3D in the Programs group of the Start button. On Macintosh, you will find the application icon initially on your desktop or dock.

While Pyware 3D is loading the 3D cover screen will display. Once the program has fully loaded, a new file will display using the default grid with a maximum of 300 counts of drill for you to start immediately. This file has a maximum of 300 counts of drill. If you need to increase the maximum number of counts later, you will use the **Count Editor** of the Utilities menu.

You can create another new file with a different maximum number of counts or a different Field Display grid by selecting New Drill from the File menu. When determining the number of counts in a drill we recommend that you do not make a drill file with more than one song per file.

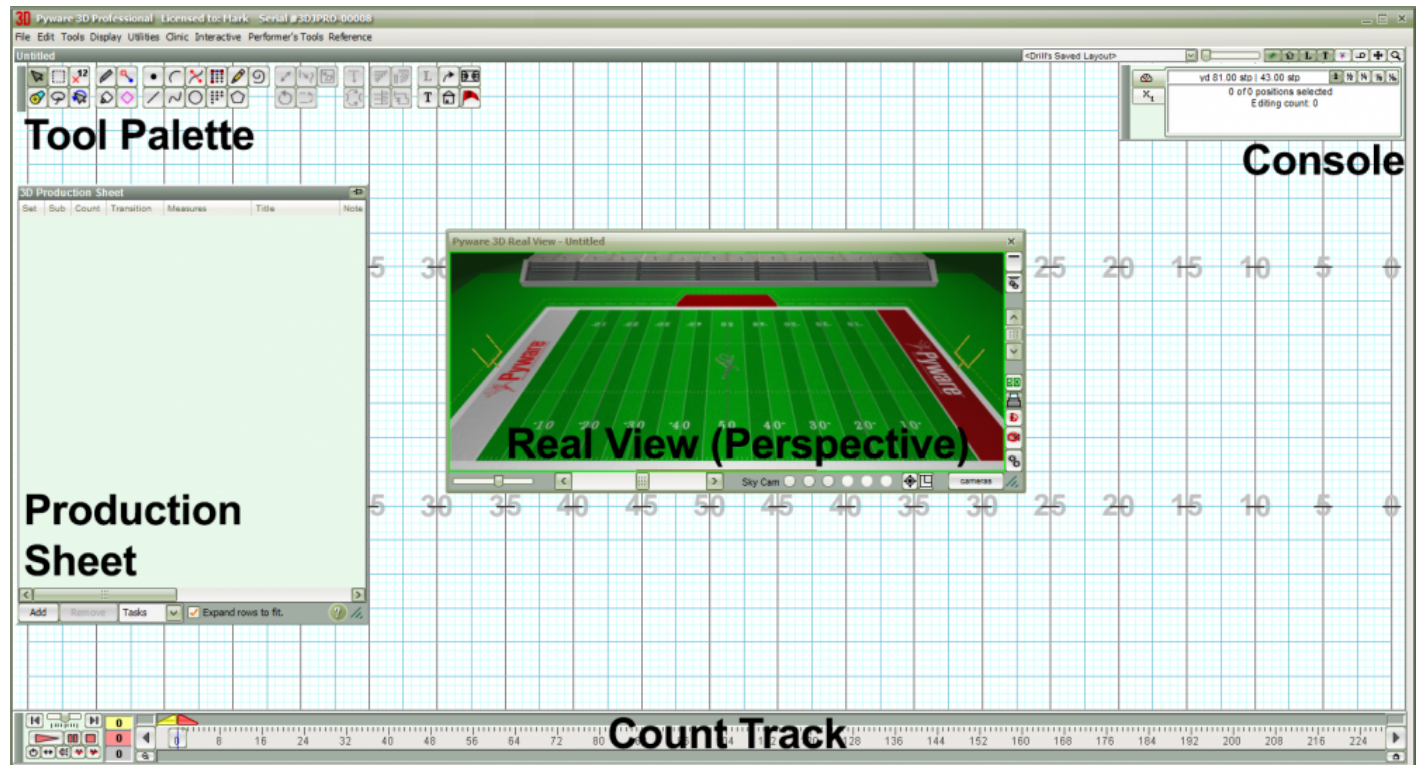
You can also choose to open an existing file by selecting **Open Drill** from the File menu.



It's important that you save often. You can always revert to an early "backup" of the file if, after writing, you realize an earlier version of the file is better. Power surges and file corruptions are a fact of life. Having backups of the file are extremely important. In addition, backing up files on external drives is beneficial. See **Backup Drill** for more details on backup techniques.

3D's Main Window

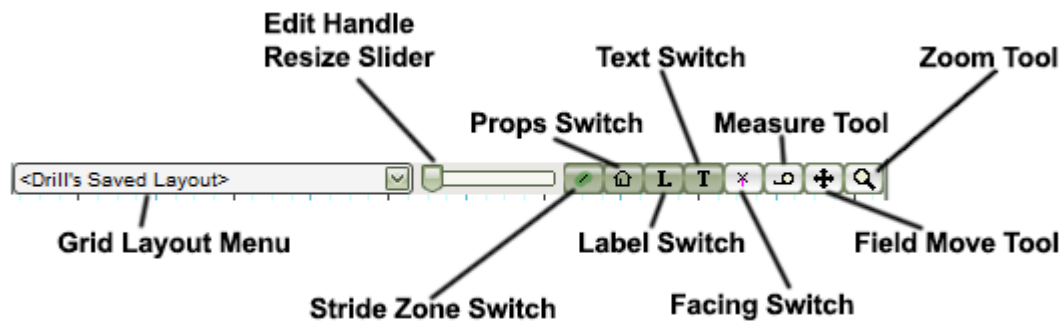
Once you have opened a file, several windows, menus, palettes and control panels will appear on the screen. All of which will be explained in this section. Items addressed in this section:



- The [Field Display Window](#)
- The [Count Track](#) and [Animation Controls](#)
- The [Console](#)
- The [Tool Palette](#)
- The [Perspective Window](#)
- The [Production Sheet](#) (Available in Interactive and Professional editions only)

Field Display Window

This is the main area where drill design is created. The Field Display Window would be the entire gridded design stage. The upper right corner of the Field Display Window contains display tools which control the way the drill is displayed on the field.



- **Grid Layout Menu***- You can quickly change the grid layout from the main window of 3D. To do so, choose the grid layout you would like from the drop down menu. By default, 3D will use the drill file's saved layout. This is extremely helpful if you have separate grid layouts for designing and printing. ***NOTE:** Any selection from this menu will also load any Real View options that are saved in the grid layout file.
- ***Edit Handle Resize Slider***- Adjusting this slide bar will either increase or decrease the size of all tool's Edit Handles.
- ***Stride Zone Switch***- Turns the display of the Stride Zone on or off. The Stride Zone can be adjusted under Document Options of the File menu.
- ***Props Switch***- Turns the display of props on or off. No props will be shown until they are entered.
- ***Label Switch***- Turns the display of labels (numbers) that appear beside each performer on or off. No labels will be displayed until the labels are entered.
- ***Text Switch***- Turns the display of the text and arrows on the field display on or off.
- ***Facing Switch***- Turns the display of performer facing on or off.
- **Measure Tool***- The Measure tool is used to measure the distance between two points. Click on the tool and then click on two points on the field to measure. The measurement is displayed in the Console. ***TIP:** A quick way to turn off the measure tool is double-click anywhere on the field while the tool is active.
- ***Field Move Tool***- This tool is used to move the actual field grid within the field display. Click on the tool to activate it and then move your mouse cursor to the field display. Drag the field to move it. Click

the tool again to turn it off. [ALT] click (or [OPTION]-click for Mac) directly on the tool to revert to the default field location.

- ***Field Zoom Tool***- The Field Zoom tool is used to zoom the actual field grid within the field display. Click on the tool and click on the field grid to zoom in. [CTRL] click on the field grid to zoom out. [ALT] click (or [OPTION]-click for Mac) on the tool to revert back to the default field view.

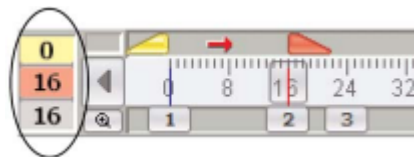
Count Track

The Count Track is typically located along the bottom of the screen. Its main component looks like a ruler with a tick drawn for every count in the drill. **Red** and **Yellow Anchors** can be dragged along the ruler which determines the count of the drill that will be displayed and edited on the screen. The Count Track is very important and is fundamental for the proper operation of Pyware 3D.



During typical use, sliding left-right above the counts of the Count Track are **Red** and **Yellow Anchors**.

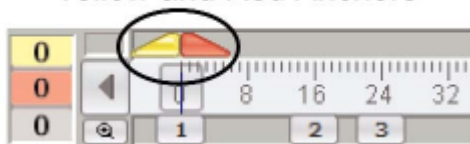
Directly to the left of the ruler in the **Count Track** is an area that displays the **Red** and **Yellow Anchor** values.



Understanding Anchors

When writing forward the top number represents the count of drill where the **Yellow Anchor** is located. The next number represents the count of drill where the **Red Anchor** is located, and the last number represents the number of counts between the **Red Anchor** and the **Yellow Anchor**.

Yellow and Red Anchors

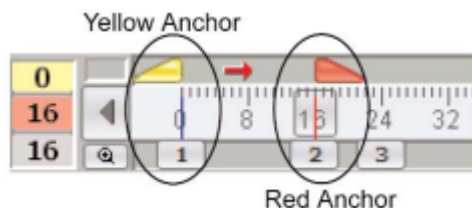


The space between the two anchors determines the count range of a transition. The **Red Anchor** is the ending count of a transition. It is the count where a shape can be edited. At this count, the positions in the

formations are displayed on the field in symbols. The **Yellow Anchor** is the beginning count of a transition and is used as a reference or background chart. By default, the positions at this count are displayed on the field as black dots. In the “old days” when designing on paper or using a light board, the **Red Anchor** could be compared to the actual sheet you would be drawing on. The **Yellow Anchor** is the underlying sheet of paper with a formation from the previous set to be used as a reference.

When you start a drill, typically your first step would be creating an opening formation on count 0. You would set both **Red** and **Yellow Anchors** to count 0.

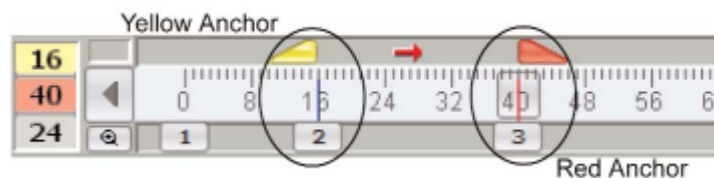
After you have created the opening formation, you would then create your transition to the next set by “morphing” or reshaping your opening formation. To indicate the count of the next set and the number of counts in the transition from the last set, you will spread the anchors over those counts. For example, setting the **Yellow Anchor** at count 0 and the **Red Anchor** at count 16 will start the next set at count 16 and create a 16 count transition between counts 0 and 16.



You may often notice when moving your anchors forward the locations of the performers on the field do not appear to change, even though you are looking at new counts. This is because no editing has been done at those counts, so the performers are holding in place.

To design the formations of the next set, you will select shapes and use the edit tools to reshape them. In the example, our **Red Anchor** is at count 16 and therefore the formations (or shapes) we are editing are at count 16. Since the **Yellow Anchor** is at count 0, the transitions between count 0 and 16 are automatically created for you.

Again, for example, if you wish the next transition to be between counts 16 and 40, you would move your anchors where the **Yellow Anchor** is at count 16 and the **Red Anchor** is at count 40.



Now you are looking at count 40 on the field. Since count 40 is currently marking time from count 16, the secondary (background) chart at count 16 that is normally displayed is directly under the primary chart (count 40). You will now reshape the formations at count 40 and the transition counts between 16 and 40 will be automatically created for you.

Why the Count Track is Awesome

The great thing about the **Count Track** is that transitions can begin and end on ANY count. You are not restricted to beginning and ending every transition at the same counts in the drill. Some transitions may span over several printed charts. In our example we created a set of transitions that span from 0-16 and from 16-40, so typically we would print a chart at 0, 16 and 40.

But what if you also wanted a group of performers (let's say the guard) to travel from 0 to 40 in a single transition? That is easy! Set the **Yellow Anchor** to 0 and your **Red Anchor** to 40. Reshape the formations that make up the guard and you're done. The placement of the guard at count 16 (as with the other transition counts) are automatically created for you.

Another great thing about the **Count Track** is that with this approach you do not re-create a chart from scratch at each set. With 3D, you are usually re-shaping the formations of a count (at the **Red Anchor**) based on a formation's shape at a previous count (at the **Yellow Anchor**). Since the transitions are evolutionary, it is almost always easier to build a chart from its predecessor than to create the new chart from scratch. The Tutorial that follow will help you better understand how this concept works.

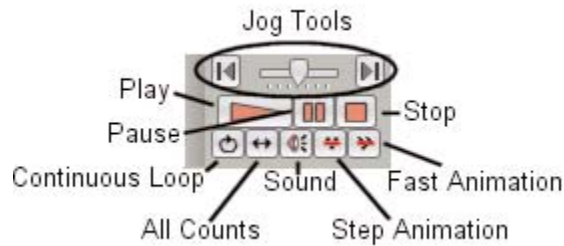
NOTE: Dragging the **Yellow Anchor** through the count of the **Red Anchor** will leap frog the anchors. This time saving feature allows you to continue on to the next set by moving just one anchor instead of two.



[CTRL] click to move your anchors to a bounding set skipping over any sub-tabs.
[ALT] (or [OPTION] for Mac) click to move your anchors to a single count.

Animation Controls

Animation controls are found on the left side of the [Count Track](#).



The **Play** button starts drill animation from the beginning of the drill or from the **Yellow Anchor**, depending on the setting of the **All Counts** switch found along the bottom of the animation controls.

The **Pause** button pauses the animation. You can press **Play** again to resume animation from the point you paused.

The **Stop** button stops the animation.

The **Jog Tool** is used to jog the animation forward and backward for a quick view. Releasing the jog returns the display to its previous condition.

The **Continuous Loop** option causes animation to loop continuously between the **Yellow Anchor** and the **Red Anchor**.

The **All Counts** option starts animation at the beginning of the drill file and continues to the end of the drill, regardless of the placement of both Red and Yellow Anchors. If **All Counts** is turned off, then the animation will start at the **Yellow Anchor** and end at the **Red Anchor**.

When the **Sound** option is selected, after clicking **Play**, animation will advance one step per [SPACEBAR] or [RIGHT ARROW] key press. the [LEFT ARROW] key press will reverse the drill one step.

The **Fast Animation** option will play animation at a fast tempo for quicker review of transitions.



A combination of both **Loop** and **Fast Animation** is a great way to preview the interaction of maneuvers of shapes to other shapes.

Console

The **Console** is a window that displays detailed information about a function you are currently using.



The top line of the **Console** is called the **Location Indicator**. The **Location Indicator** provides information regarding “cursor placement” relating to steps from vertical (division) lines and horizontal reference points from either back side line, front side line, or middle of field.

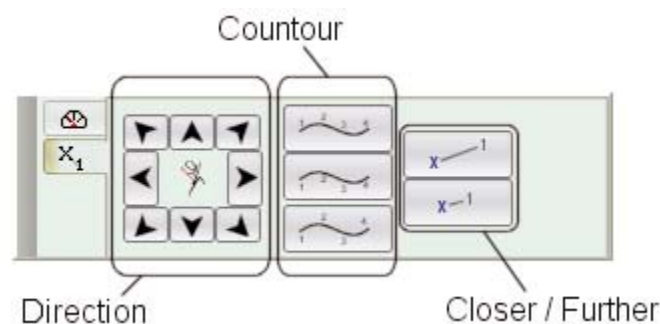
Information in the **Console** changes depending on the function currently being used. Typically the console shows information such as: number of positions selected, average interval of selected or new shape, average length, maximum stride of transition, etc.

The five buttons in the top right corner of the **Console** control the step resolution of the Location Indicator and the cursor on the field. The choices are **whole (1) step**, **half $\frac{1}{2}$ step**, **quart $\frac{1}{4}$ step**, **eighth ($\frac{1}{8}$)**, and **sixteenth ($\frac{1}{16}$) step**. Switching between step resolutions gives the user more control of placement points on the field. This is valuable when implementing tools such as the **Free Form Tool** where many points are required to create a smooth shape. If your shape has few data points, you would typically want to choose a whole step resolution so your endpoints will fall on whole steps.

Performer ID Panel

Available in Interactive and Professional editions only.

The **Performer ID Panel** is a tab that is found on your console. This panel allows you to quickly manipulate the positioning of **Performer Labels**. The picture below breaks the panel into three sections for easier comprehension.



The **Directional Arrows** shift the selected performer label(s) in a specific direction. All selected performer labels will shift this direction.

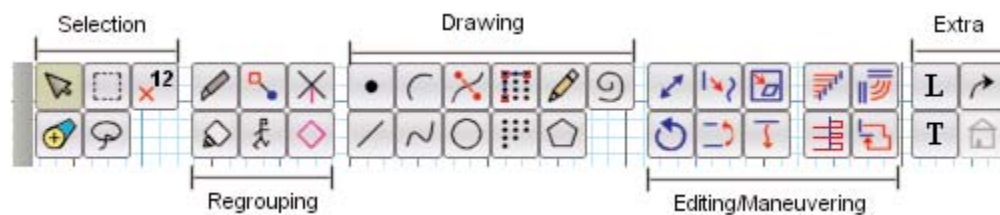
The **Contour** buttons contour the label(s) to the shape. This is particularly helpful when dealing with curved shapes.

The **Distance** buttons adjust the performer label(s) closer to or further from the performer(s).



If you have a large number of performers but only need to adjust a few labels, try the **Box Selection** or **Lasso Selection** tools. These two tools ignore any grouping that the performers might be in and only highlight what you have selected.

Tool Palette



The **Tool Palette** contains the tools for entering shapes, selecting and editing shapes, selecting and maneuvering shapes, changing information about performers, and items such as text and arrows.

The [Selection](#) tools are used to select a shape or groups of shapes.

The [Regrouping](#) tools are used to combine performers into different groups for editing and maneuvering. Also in this group is an [Adjuster](#) tool for quickly adjusting individual placements.

The [Drawing](#) tools are used to draw shapes.

The [Editing & Maneuvering](#) tools are used to create transitions as well as edit shapes.

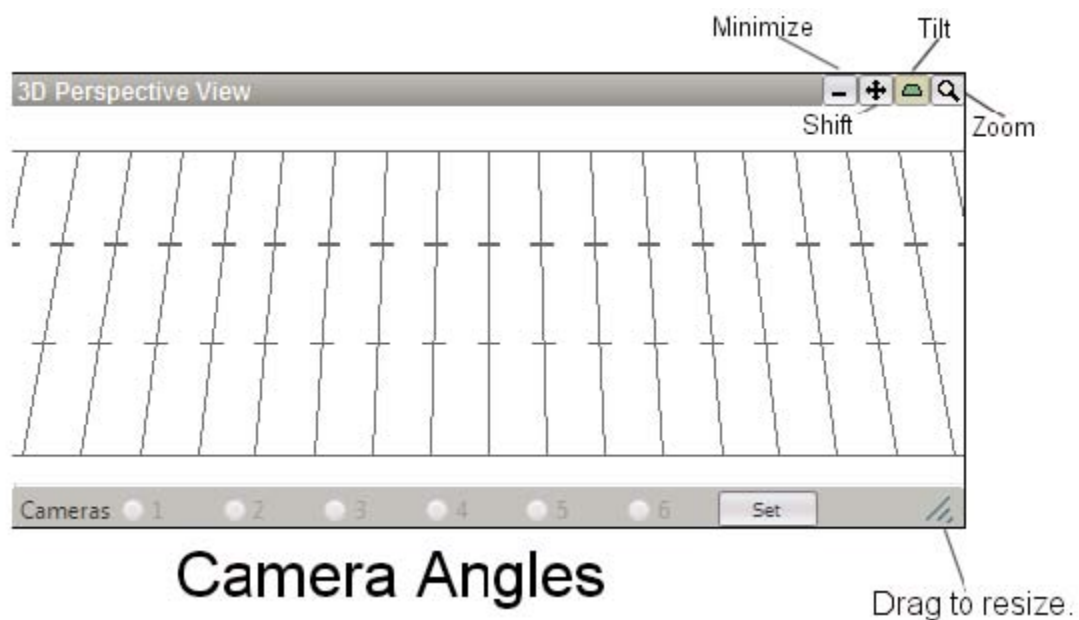
The [Extras](#) tools are used to add and modify information about performers such as their label and symbol. These tools can also be used to draw special items such as instructions or arrows.

Perspective Window (Classic)



For information on the Real View window, please click [here](#).

The Perspective Window is manipulated by using the tools in the upper right corner of the window. The Perspective Window defaults to the minimized (hidden) status when the program is opened. The Perspective View will appear by click on the Minimize button.



The **Minimize** button reduces the window to show only the title bar. When the window is minimized, the Perspective View calculations are disabled allowing for a faster refresh rate of the field window.

To **Resize** the **Perspective View**, click and drag the bottom right corner of the **Perspective View** window.

The **Tilt** button tilts the view in the window. After click on the button, move the mouse into the Perspective View window, then click and drag in the direction that you want the display to tilt.

The **Shift** button moves the field into view. After selecting the button, move the mouse into the perspective view window. Click and drag to shift the display. [ALT] click on the **Shift** button returns the window to its default view.

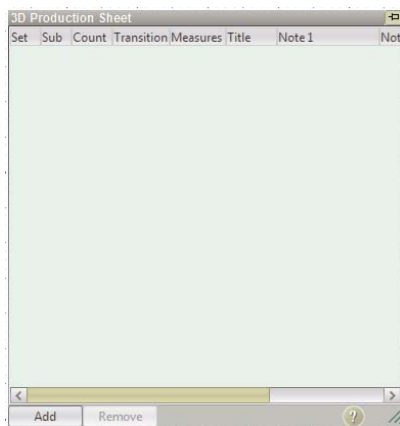
The **Zoom** button zooms the view in or out. After clicking on the button, move the mouse into the Perspective View and click again to zoom IN. Hold down the [CTRL] key and click to zoom OUT. [ALT] click on the **Zoom** button returns the window to its default view.

Cameras (*Interactive and Professional editions only*): There are 6 **Camera** radio buttons available for you to quickly jump to different viewing angles when watching the animation or previewing a chart. To set specific angles to a preset button, change the view point in the Perspective View window to your desired angle, then press the **Set** button. A new window will appear which prompts you to select a camera number for this specific angle. Once you create a camera angle through this process, you may instantly jump to that view in the **Perspective View** anytime during the design or previewing animation process.

To remove all saved camera angles, press the **Set** button then choose **Clear All**.

Production Sheet (Overview)

Available in Interactive and Professional editions only.



The [Production Sheet](#) is a helpful tool that allows you to develop your show “timeline” in 3D before any charting begins. Think of the **Production Sheet** as a “map” to your drill. Within this tool, you are able to notate which measure of a piece will be the transitions between **Page Tabs**, along with adding any notes, such as “Big Hit” or “Winds face back field.”

Set indicates the set (page tab) number you are working on.

Placing a check mark in the **Sub** column would indicate that the current Set is a Subset.

The **Count** column displays which count a set is on.

Transition shows how many counts there are to get to a particular set.

Selecting a row under the **Measures** column would allow you to input which measures the set is referencing.

Title works much like the **Measures** column. If you click on a row under the **Title** column, you would be able to input a title for that particular set.

Note columns are there for any quick instructions or notes the ensemble (or you) might need. These notes can be quickly imported into a **Text Box** and displayed on the field through the **Text Box Tool**.



Selecting a set on your **Production Sheet** is like selecting a page tab on the Count Track. This is another quick way to preview a set.

To pull the **Production Sheet** away so you may view the field and the **Production Sheet** at the same time, press the “Detach” button in the upper right corner of the **Production Sheet** window. You will now be able to drag the **Production Sheet** anywhere on your screen. To pin the window back to 3D, press the “Pin” button.

Backup Drill

With a computer, bad disks, damaged files, computer lock-ups and hard disk crashes are a fact of life. Although these occurrences are few and far between, they inevitably seem to happen to everyone at least once. Take the precautions mentioned below and your drill designing days will be virtually trouble free.

Separate Files for Each Movement

To prevent losing large amounts of work, it is advisable to create a separate file for each drill segment or movement. Smaller files will also speed up animation and at times, solve certain printing problems.

Save Often

Your time and effort is very valuable. We suggest saving every fifteen minutes when working on a file. Nothing is more frustrating than losing drill all because you did not save your work. It is easy and takes very little time. Just select **Save** from the **File** menu.

Keep Multiple Files Multiple Places

Work from the drill files that you have stored on your hard drive, however, also put your drill files on disc or an external storage device and store them. Keep copies in multiple locations. Hard drives crashes can completely wipe out your entire drill design library as well as other important files stored on the computer. Never keep your files at only one location.

File Versioning

Make quick hard drive backups by choosing **Save As** from the **File** menu and changing the name of the file. One common method of making backups is by ending a file name with a number such as 01 and then incrementing the number for each backup. For example: Name your opener “Opener01”. After an hour of work, choose **Save As** and change the name to “Opener02” and so on. The name with the largest number is the most current and all others are older at one hour increments. This makes it easy to go back to earlier versions. After you have collected several copies, start deleting the oldest ones, and occasionally move copies to the external storage device.

Automatic Backups

Use the **Backups** section of the **Application Options** found in the **File** menu. Check “Always backup after using Save.” See the [Backup](#) section of [Menu Bar](#) for details.

3D Tutorial

Perhaps the best way to learn Pyware 3D is to progress through the development of a simple drill. Please read the [previous section](#) before beginning this tutorial to understand some of the terminology. We strongly urge you to complete this tutorial. It will introduce you to the basic functions and options of the program.

Click through to the first topic: [New Drill](#).

New Drill

Start 3D. After a few moments, the 3D cover page will appear. A new file will be created and displayed using the default field grid layout. A [Count Track](#) will appear at the bottom of the screen. The [Count Track](#) determines which count of the drill will be displayed.

To name our file, choose [Save As](#) under the **File** menu.

Type "Tutor" for the file name and choose **Save**.



The program has fully loaded once you see the 3D Perspective window (or Real View). We recommend waiting for this window to load before performing any tasks in 3D.

Page Tabs

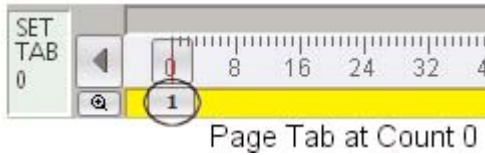
To begin, we will set four **Page Tabs** on the [Count Track](#) to designate specific counts as "Hit" points for our drill. **Page Tabs** will allow you to jump to various parts of your drill quickly and easily.

Click on the **Page Tab Lock** button at the bottom right corner of the [Count Track](#).

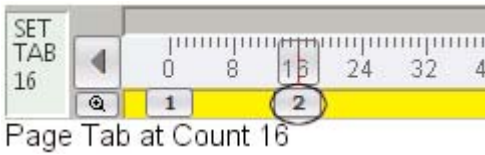


Click on the yellow panel below count 0 of the [Count Track](#). The **Page Tab** will appear as a small white box on the track at count 0. Make sure that you have added the page tab on count 0 and not count 1. If the page

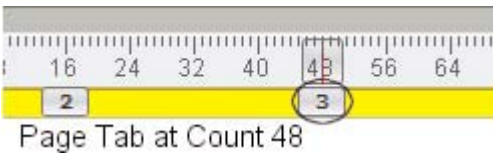
tab was added on count 1, simply click and drag the page tab over to count 0. You can drag page tabs to any count on the Count Track.



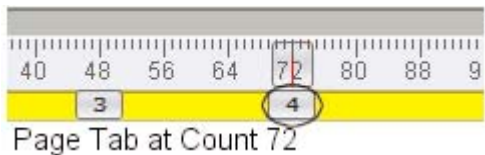
Click on the yellow panel below count 16 of the [Count Track](#). The **Page Tab** will appear as a small white box with the number 2 on the track at count 16.



Click on the yellow panel below count 48 of the [Count Track](#). The **Page Tab** will appear as a small white box with the number 3 on the track at count 48.



Click on the yellow panel below count 72 of the [Count Track](#). The **Page Tab** will appear as a small white box with the number 4 on the track at count 72.



Finally, to complete adding **Page Tabs**, click on the **Page Tab Lock** button at the bottom right corner of the [Count Track](#). This will lock the **Page Tab Lock** and lock the new page tabs in place.

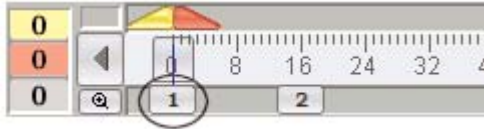


Select [Save](#) from the **File** menu to save the drill file with its new page tabs.

Drawing Lines

We'll start our first drill with two mirrored horizontal lines.

Click on the **Page Tab** at count 0 on the [Count Track](#). The **Page Tab** appears as a small box beneath count 0 of the [Count Track](#). The **Yellow** and **Red Anchors** will return to the beginning of the Count Track.



Locate the [Tool Palette](#) and click on the [Line](#) tool button. A **Line Tool Control Panel** will appear.



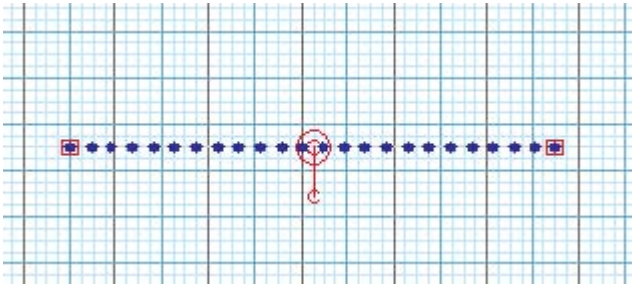
In the **Line Tool Control Panel**, click on the padlock assigned to the **Restrict Horz/Vert** option. This will lock the lines to be drawn as only horizontal, vertical and 45 degree diagonals.



We can choose to first determine positions and interval prior to drawing a new shape. Type "22" in the **Positions** text field. Leave a "0" in the **Interval** text field.

To place the 1st endpoint of the line, move the cursor to the left of the 50 yard line where the **Location Indicator** located in the [Console](#) reads **45 yds 6 steps | 42 steps** and click the mouse.

To place the 2nd endpoint of the line, move the cursor until the **Location Indicator** reads **20 yds 4.00 stp | 42 stp** and click the mouse.



In the **Control Panel**, 22 positions will appear along with an automatically calculated interval based on the length of the line you have entered.

Editing Handles will appear at the endpoints of the line, and a red **Repositions Handle** will appear in the middle of the line. These handles can be used to reshape and edit the line.

Experimenting With Editing Options

Before committing this shape to the file, this would be a good time to experiment with various editing options found in the **Line Tool Control Panel**. Click and unlock the padlock to the right of the **Positions** text field. Whenever the padlock is unlocked you are allowing the value in this field to be automatically calculated.



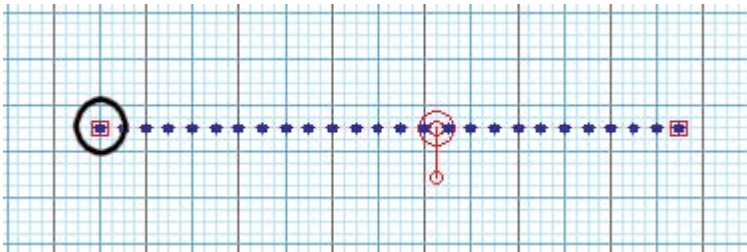
Enter “2” (steps) in the **Interval** text box. The padlock to the left of the interval text box will automatically “lock”. This lock indicates that the interval will not change when you manipulate the shape. Since we have locked the interval, the number of positions change as you manipulate the length of the line while the interval stays the same.



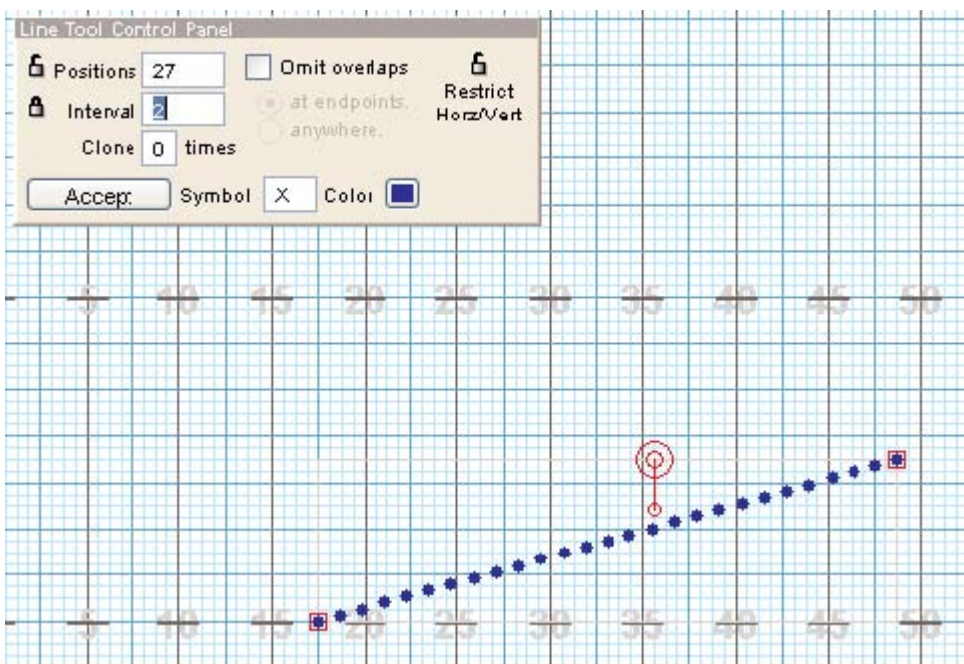
While leaving the value “2” in the **Interval** text box, enter “28” in the **Positions** text field. The padlock is now locked on both the interval and positions. Since we have locked the interval and the number of positions, the shape automatically scales to keep the defined interval and number of positions.

Unlock the **Positions** padlock.

Drag the red edit handle assigned to the **LEFT** endpoint of the line until the **Location Indicator** reads **15 yds 4 steps | 42 steps** and release the mouse button. As you drag the edit handle, positions are added or removed to accommodate the locked interval.



Unlock the padlock assigned to the **Restrict Horz/Vert** option. When restrict is unchecked, line endpoints can be placed at any point on the field.



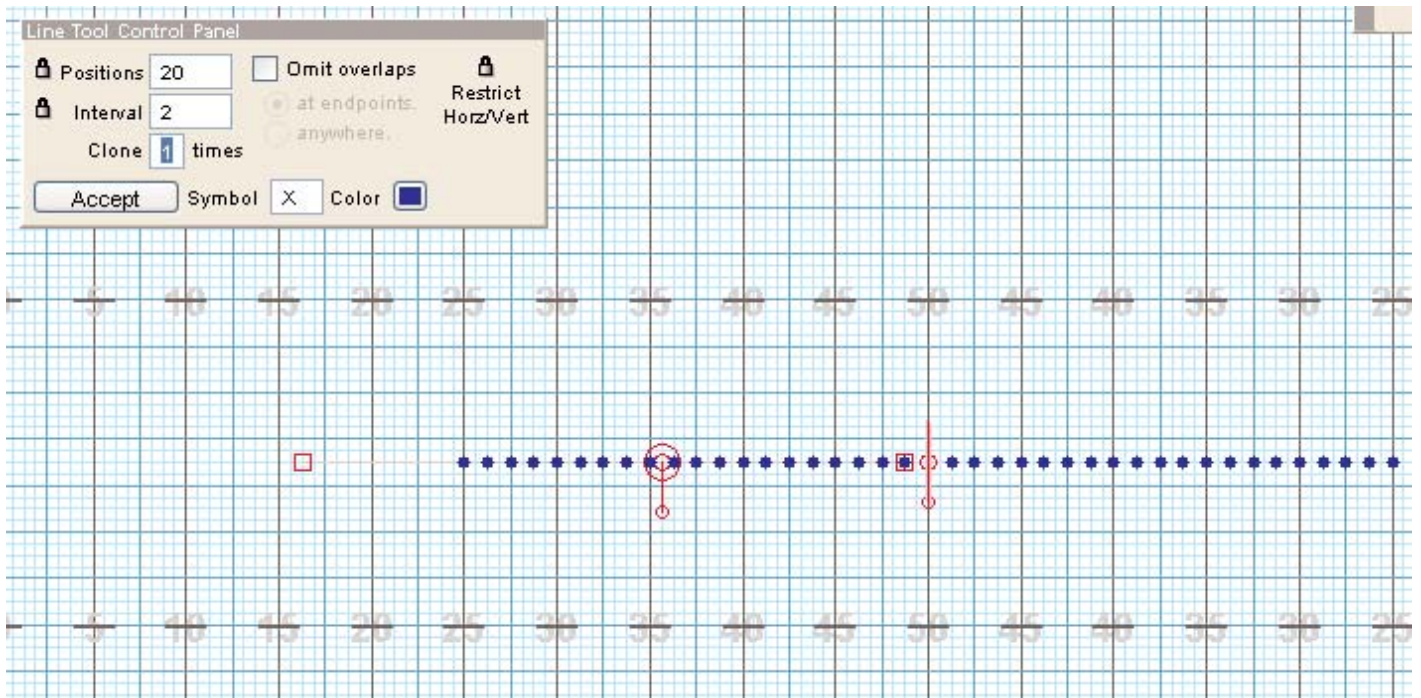
Drag the red edit handle assigned to the **LEFT** endpoint of the line until the **Location Indicator** reads **15 yds 4 steps | 28 steps**.

(Re)lock the padlock assigned to **Restrict Horz/Vert** option. The shape will return to its horizontal placement.

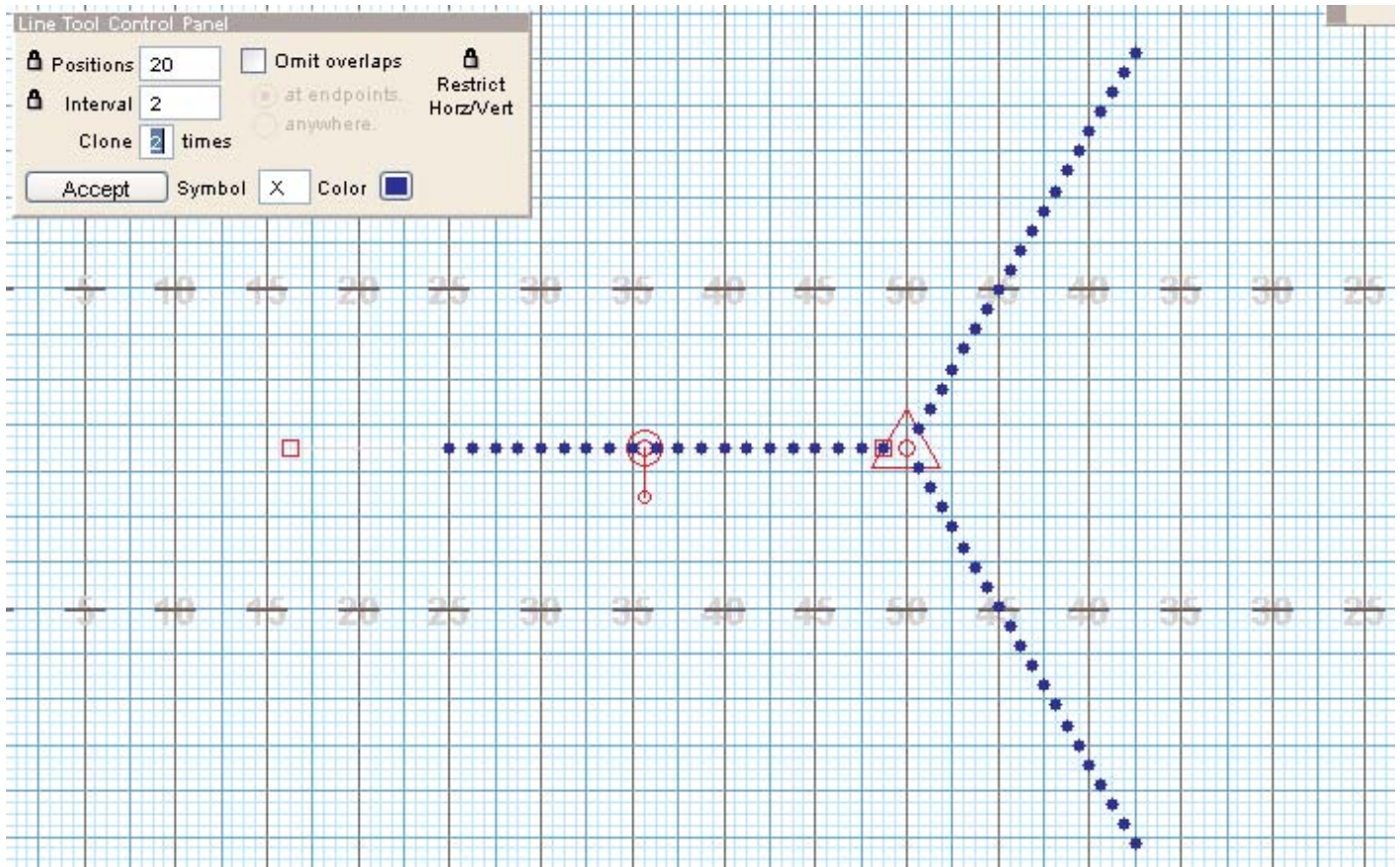
In the **Control Panel**, enter **Positions** = "20" and **Interval** = "2" in text fields.



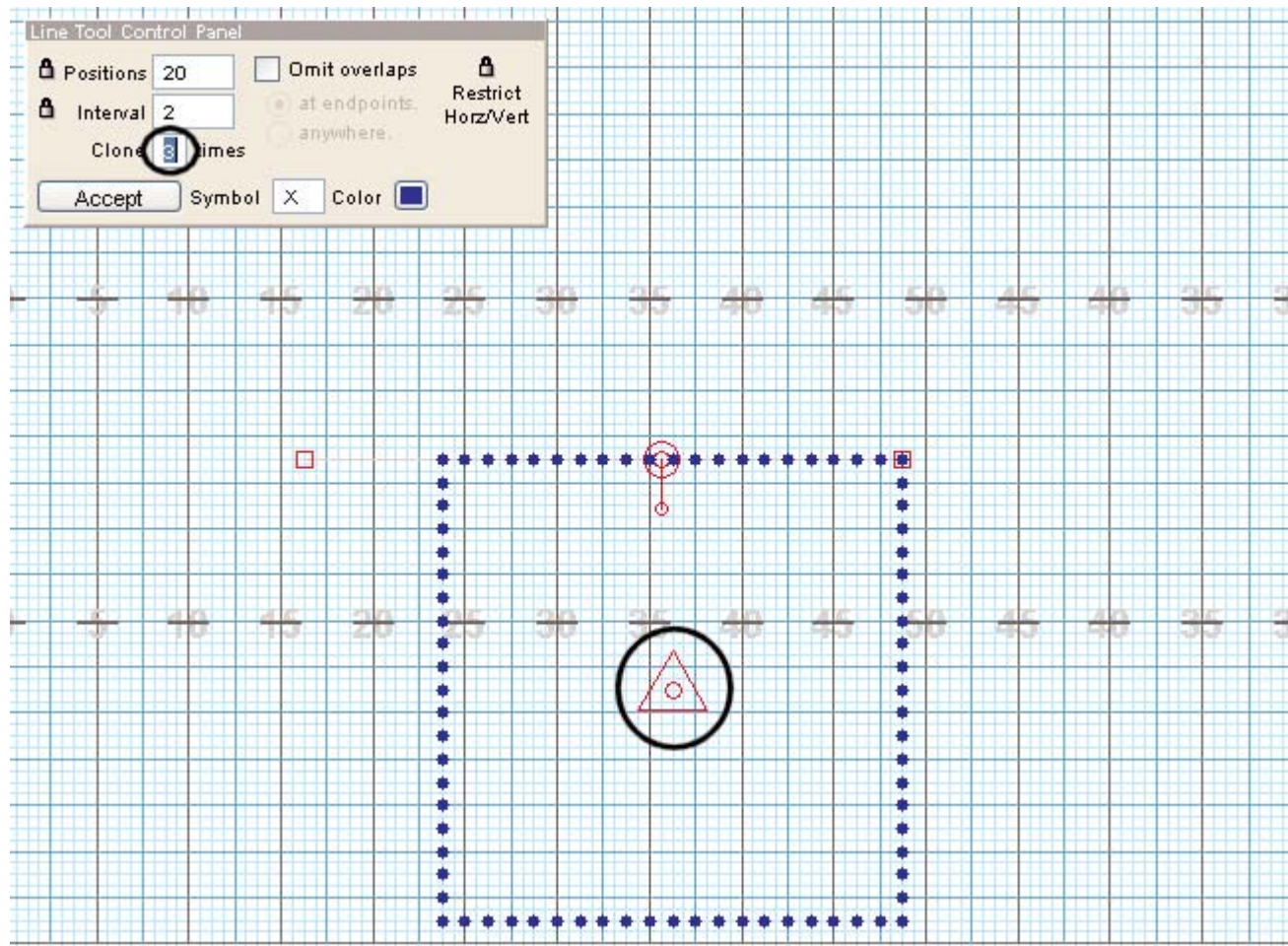
Enter “1” in the **Clone** text field. The **Clone** option is used to duplicate a shape across an axis. The next few steps will experiment with the **Clone** option.



Change value in the **Clone** text field to “2”. When more than one clone is entered the shapes multiply around a point indicated by the clone handle.

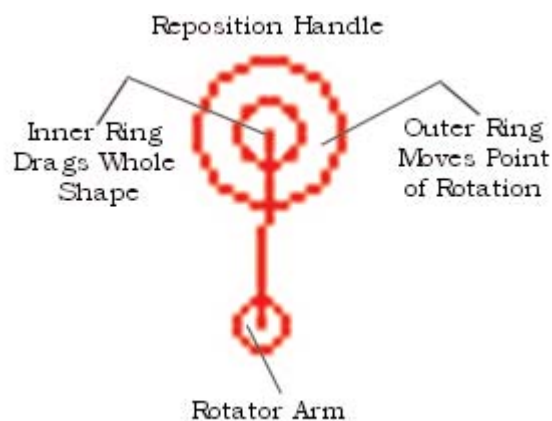


Now, change the value in the **Clone** text field to “3”. Click and drag the clone handle until all four lines form into a box.



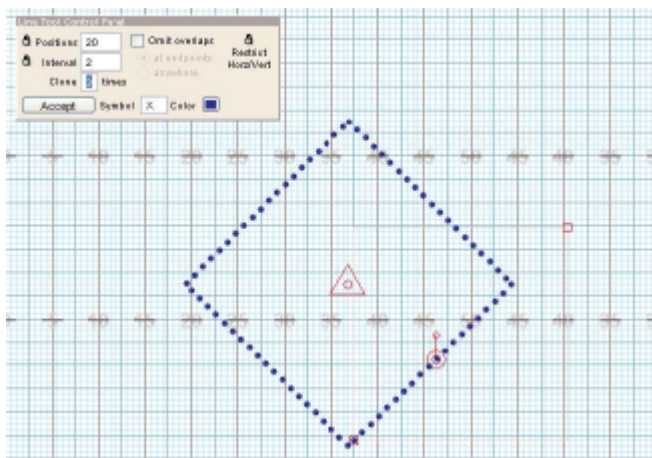
Changing Placement of the Shape

The next few steps will experiment with changing the placement of the shape. This can be done with the **Reposition Handle** located in the middle of the top line. To move the shape to a different location on the field, drag the center of the **Reposition Handle**.



You can also use the **Reposition Handle** to reposition the shape by rotating it. The center of the **Relocation Handle** is the **Point of Rotation**. You can change the **Point of Rotation** by dragging the outer ring of the **Reposition Handle**.

Rotate the placement of the shape by dragging the **Rotator Arm** of the **Reposition Handle**.



It's time to stop experimenting and to actually enter a shape. Let's cancel the shape we have been working with and start again. Clicking on any tool in the [Tool Palette](#) will exit from any tool you are currently using. If the tool you click on is the same tool you are currently using, it is like starting over with the tool. So, click on the [Line](#) tool in the [Tool Palette](#) to deselect it and therefore cancel the creation of the new shape.



You can also cancel out of a tool by pressing the [ESCAPE] key on your keyboard or right-clicking anywhere on the field.

Line Tool (Take 2)

Click on the [Line](#) tool to open the tool if it is not already open. A **Line Tool Control Panel** will appear.

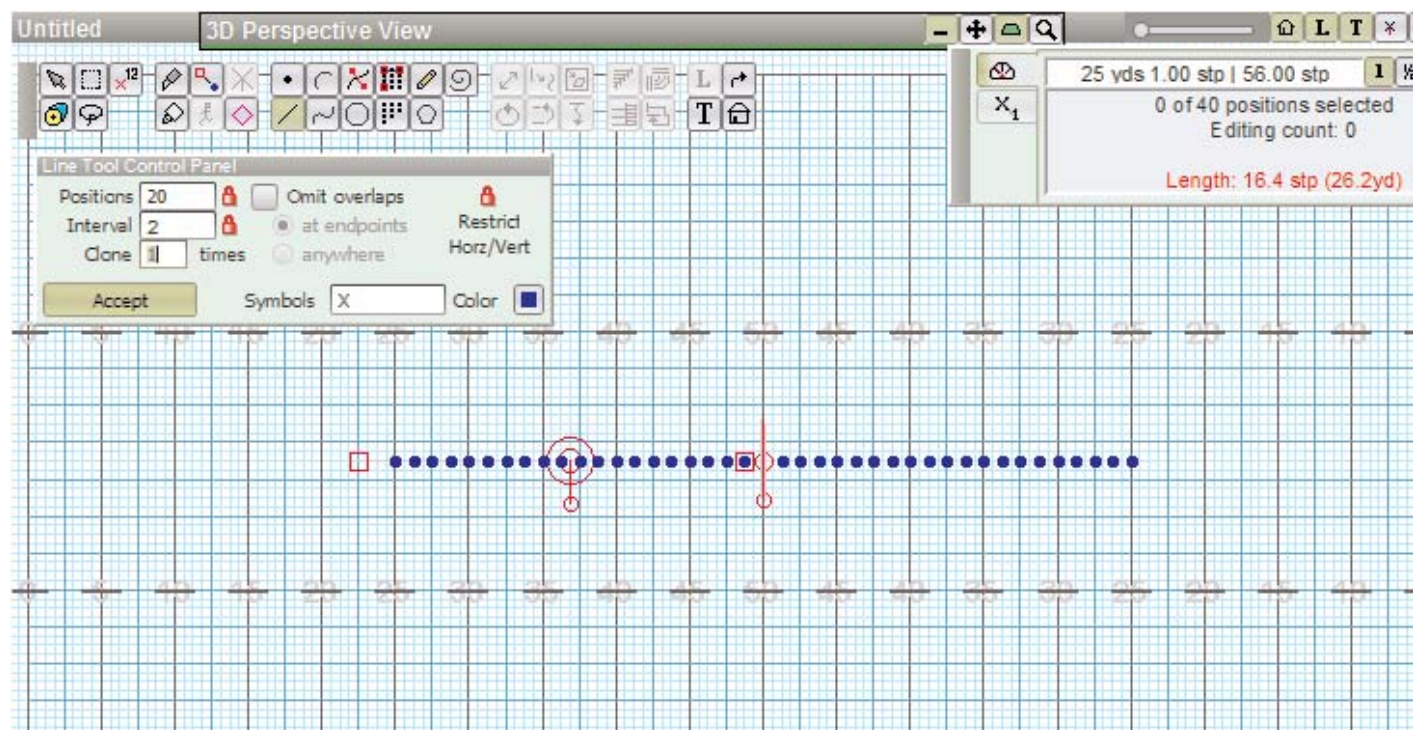
Click on the padlock assigned to **Restrict Horz/Vert** option in order to restrict the line to either horizontal, vertical, or 45 degree alignment.

If not already done, enter these values into the Control Panel: **Positions** = "20" and **Interval** = "2".

On the field, place the 1st endpoint of the line to the LEFT of the 50 yard line where the **Location Indicator** reads **45 yds 6 steps | 42 steps** and click your left mouse button.

Place the 2nd endpoint of the line to the **LEFT** of the 50 yard line where the **Location Indicator** reads **20 yds 4 steps | 42 steps** and click the mouse button. Twenty positions will appear in a line at a 2 step interval.

Change the value in the **Clone** text field to “1”. There are now two horizontal lines on either side of the 50 yard line.



Before accepting the shapes designed you can assign the shape's positions a **Symbol** and **Color**. The default symbol and color is currently shown in the **Control Panel**. The symbol should be an “X” and the color should be blue. If not, enter them now.

Click **Accept** in the **Control Panel**. You should see 40 positions divided into two lines on count 0 . The [Console](#) is showing the number of **Performers** as 40.

Drawing Arcs

The next shape we'll design will be a simple arc of 30 positions. Both endpoints of the arc will connect to the outside endpoints of the two lines.

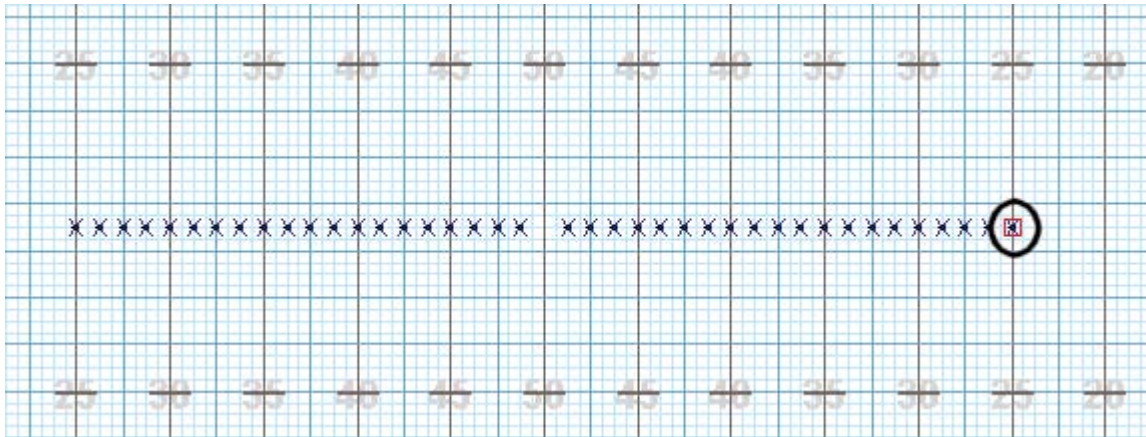
Click on the [Arc](#) tool in the [Tool Palette](#). An **Arc Tool Control Panel** will appear.



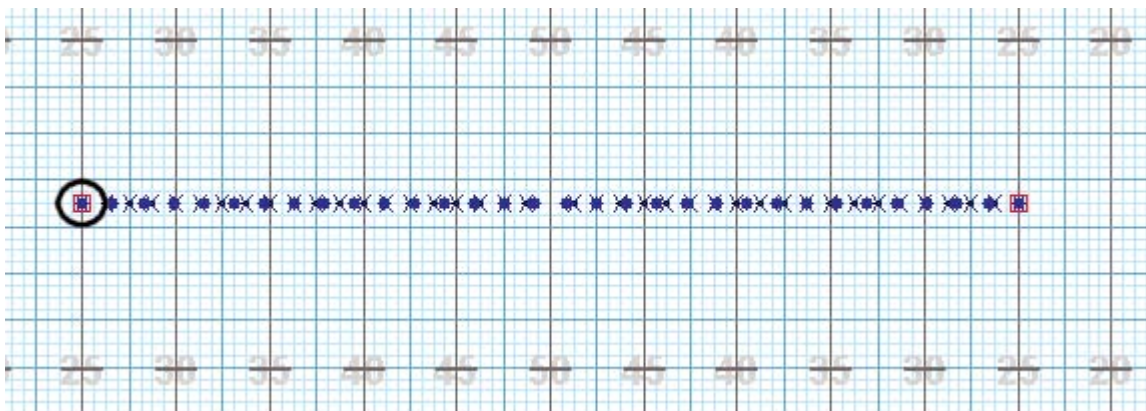
In the **Control Panel**, enter “32” in the **Positions** text box.



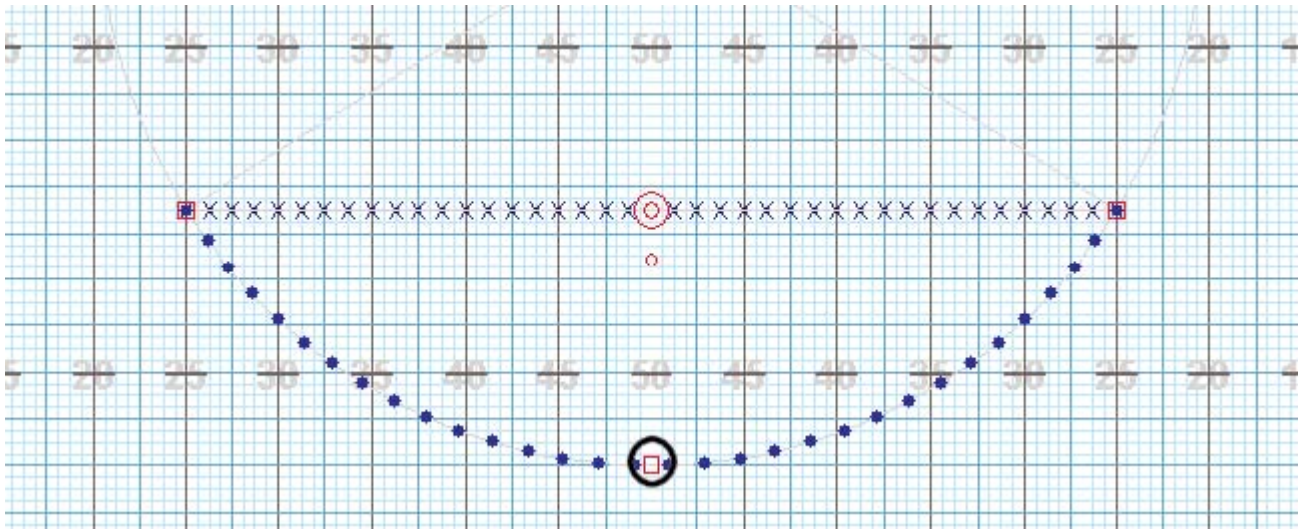
To place the 1st arc endpoint, move the cursor to the RIGHT of the 50 yard line where **Location Indicator** reads: **25 yds 0 steps | 42 steps** and click the mouse button. Yes, we are locating the endpoint directly on top of the last line.



To place the 2nd arc endpoint, move the cursor to the LEFT of the 50 yard line until the **Location Indicator** reads **25 yds 0 steps | 42 steps** and click the mouse button.



To assign the arc's peak, move the mouse until the **Location Indicator** reads **50 yds 0 steps | 20 steps** and click the mouse button.



Experimenting With Editing Options

Before committing this shape to the file, this would be a good time to experiment with various editing options in the **Arc Tool Control Panel**.

Change the value in the **Data Point** text box to “3”. Three data points creates a 2 sided V shape.



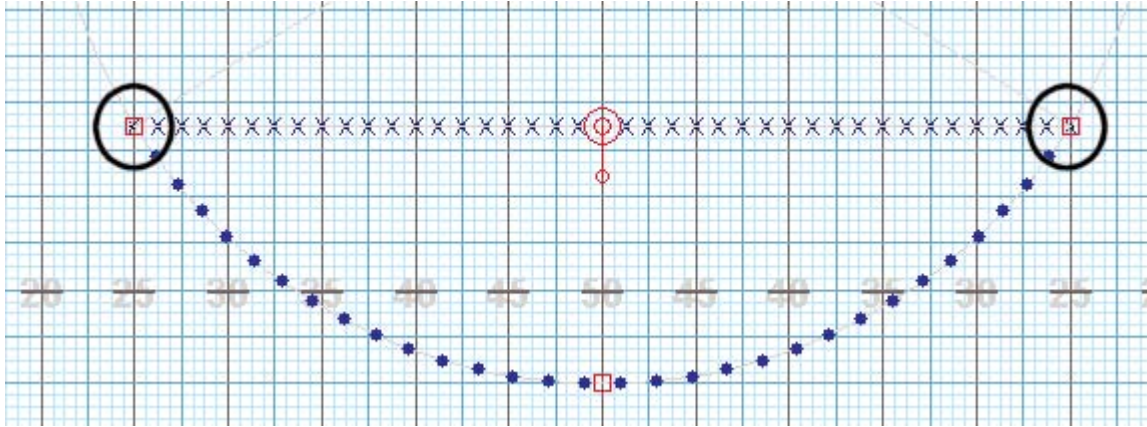
Now change the value in the **Data Point** text box to “4”. Four data points creates a 3 sided shape.

To continue with this exercise, change the value in the “Data Point” text box back to “20” to return to the original arc shape.

Click on the **Omit Overlaps** option in the **Control Panel**.



When we created the arc, the two endpoints of the arc were entered on top of existing positions. The endpoints were entered as “pic” points and not intended to be filled with a performer because we have already placed performers at those points. **Omit Overlaps** removed the overlapping endpoints thus preventing two performers from being on top of each other.



Click the **Accept** button in the **Control Panel**. The [Console](#) has updated performers to 70.

Select [Save](#) from the **File** menu.

Drawing Circles

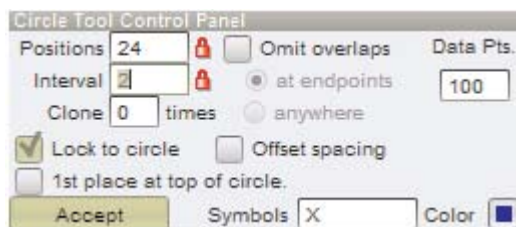
The third shape to be entered in our drill will be a circle.

Click on the [Circle](#) tool in the [Tool Palette](#). A **Circle Tool Control Panel** will appear.

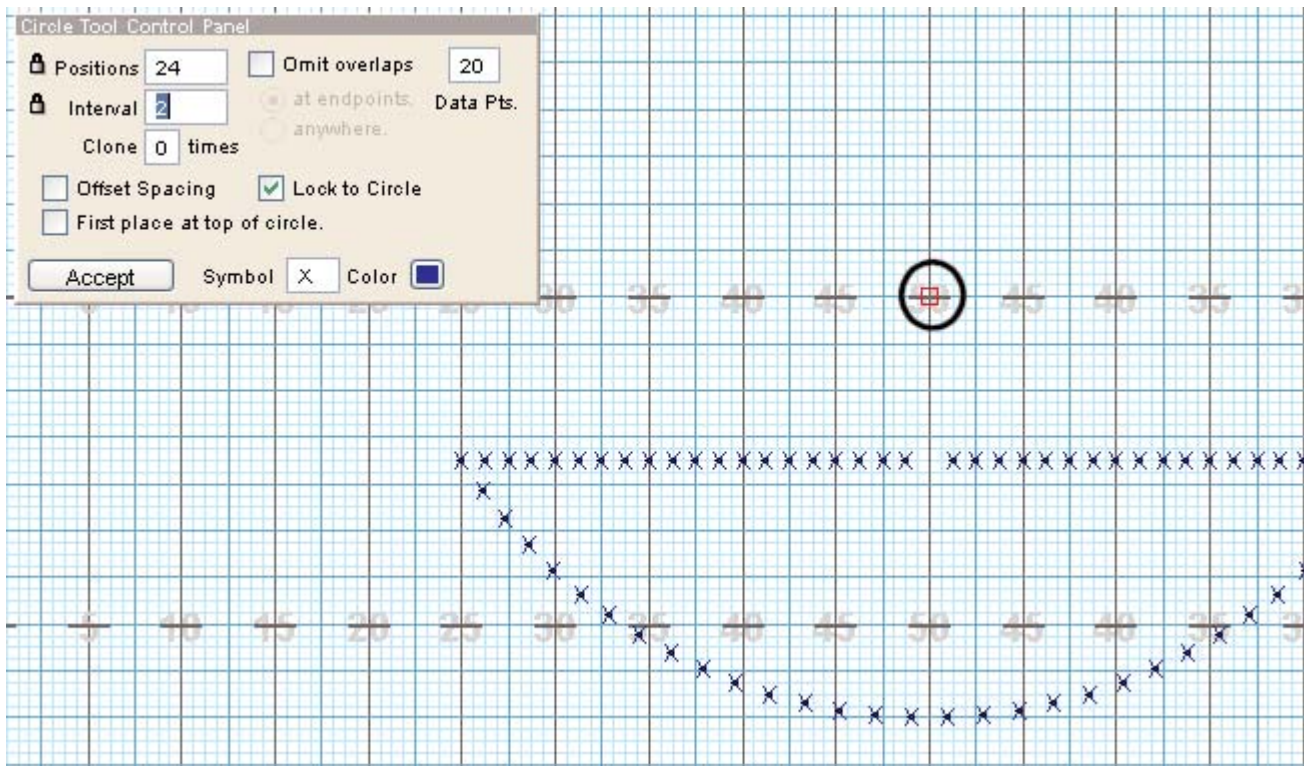


In the **Control Panel**, enter **Positions** = “24” and **Interval** = “2”.

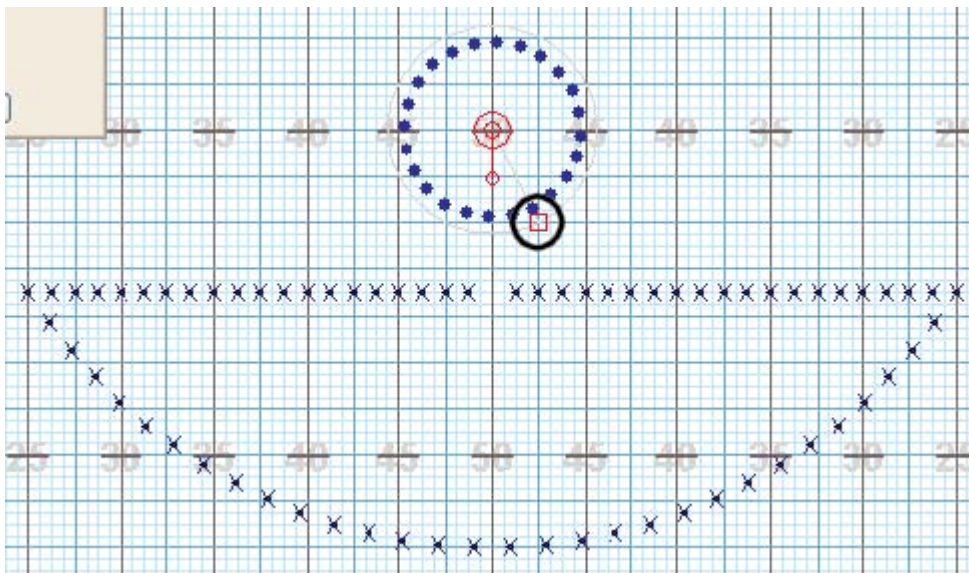
If not already checked, check the **Lock to Circle** option.



To place the center point of the circle, use the **Location Indicator** in the **Console** to move the cursor to **50 yds 0 steps | 56 steps** and click the mouse button.



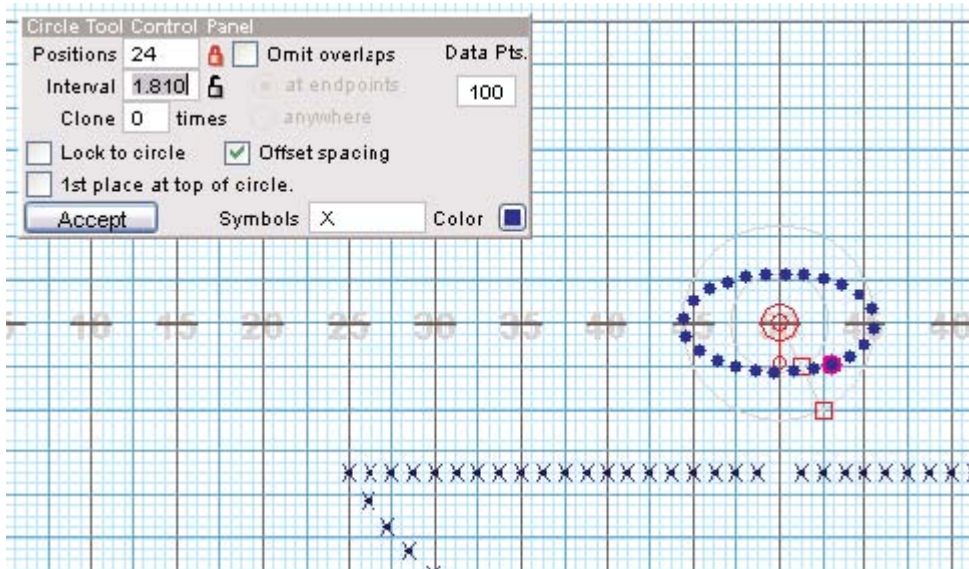
To place the circle circumference point of the circle, move the cursor on the field until the **Location Indicator** reads **45 yds 4 steps | 48 steps** and click the mouse button.



Experimenting With Editing Options

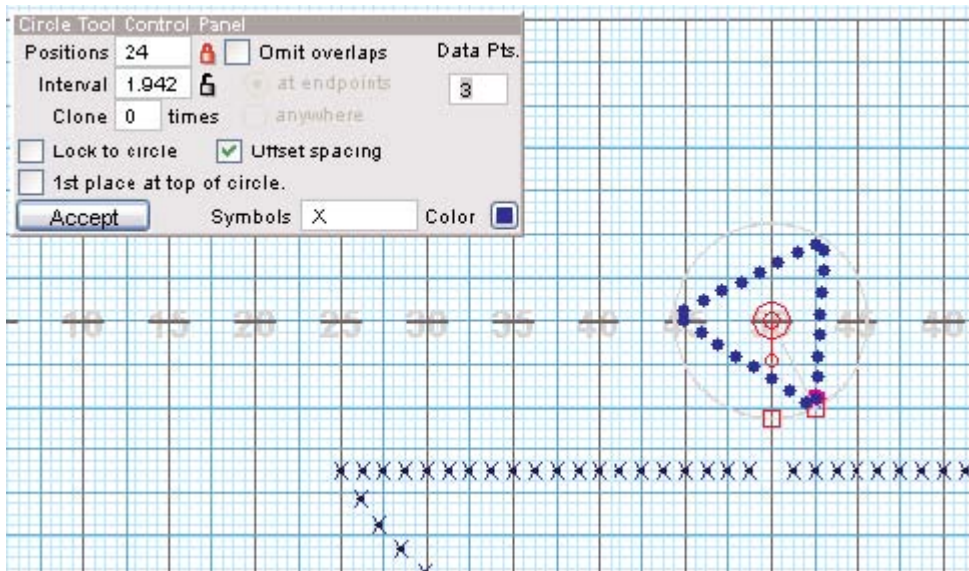
Before committing this shape to the file, this would be a good time to experiment with various editing options in the **Circle Tool Control Panel**. Select the **Offset Spacing** option. This will attempt to equally distribute the positions of the circle across the point entered as the circumference.

Unlock the **Interval** padlock and uncheck the **Lock to Circle** option. This creates an oval shape. The two red square editing handles can be used to shape the oval. You could also use the **Reposition Handles** to shift and rotate the oval.



Recheck the **Lock to Circle** option. The circle will snap back into place.

Change the value in the **Data Points** text box to “3”. Notice this procedure creates an “outlined” triangle. Similarly you could create an enclosed shape with any number of sides.



Click on the [Circle](#) tool in the [Tool Palette](#) to de-select the **Circle** tool and cancel the creation of the circle.

Circle Tool (Take 2)

Now let's re-enter the circle.

Click on the [Circle](#) tool in the **Tool Palette**. A **Circle Tool Control Panel** will appear.

If not already entered, in the **Control Panel**, enter **Positions** = "24" and **Interval** = "2".

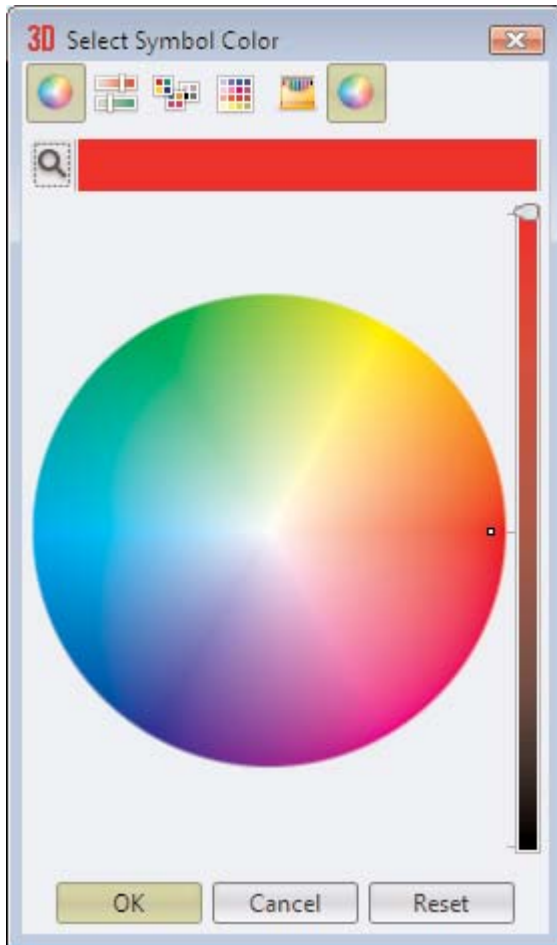
If not already checked, check the **Lock to Circle** option.

If not already checked, check the **Offset Spacing** option.

To place the center point of the circle, use the **Location Indicator** in the [Console](#) to move the cursor to **50 yds 0 steps | 56 steps** and click the mouse button.

To place the circumference point of the circle, move the cursor on the field until the **Location Indicator** reads **45 yds 4 steps | 48 steps** and click the mouse button.

In the **Control Panel**, change the **Symbol** to "G" for Guard and the **Color** to a shade of red.



Click **Accept** to enter the circle.

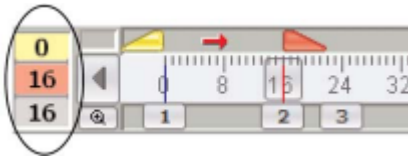
Select [Save](#) from the **File** menu.

Moving Lines

We have now created the opening formation at count 0 which is set #1. Now we will create the next set by “morphing” or reshaping your formations at set #2. Initially 3D has established a mark time between set #1 and set #2. As we reshape the formation at set #2, 3D will automatically create the transitions to set #2 from set #1.

To indicate the count of the next set and the number of counts in the transition from the last set, we will spread the anchors in the [Count Track](#) over those counts. Setting the **Yellow Anchor** at count 0 and the **Red Anchor** at count 16 will set up the field for editing of the formations at count 16 and create a 16 count transition between count 0 and 16.

Click on **Page Tab #2**.



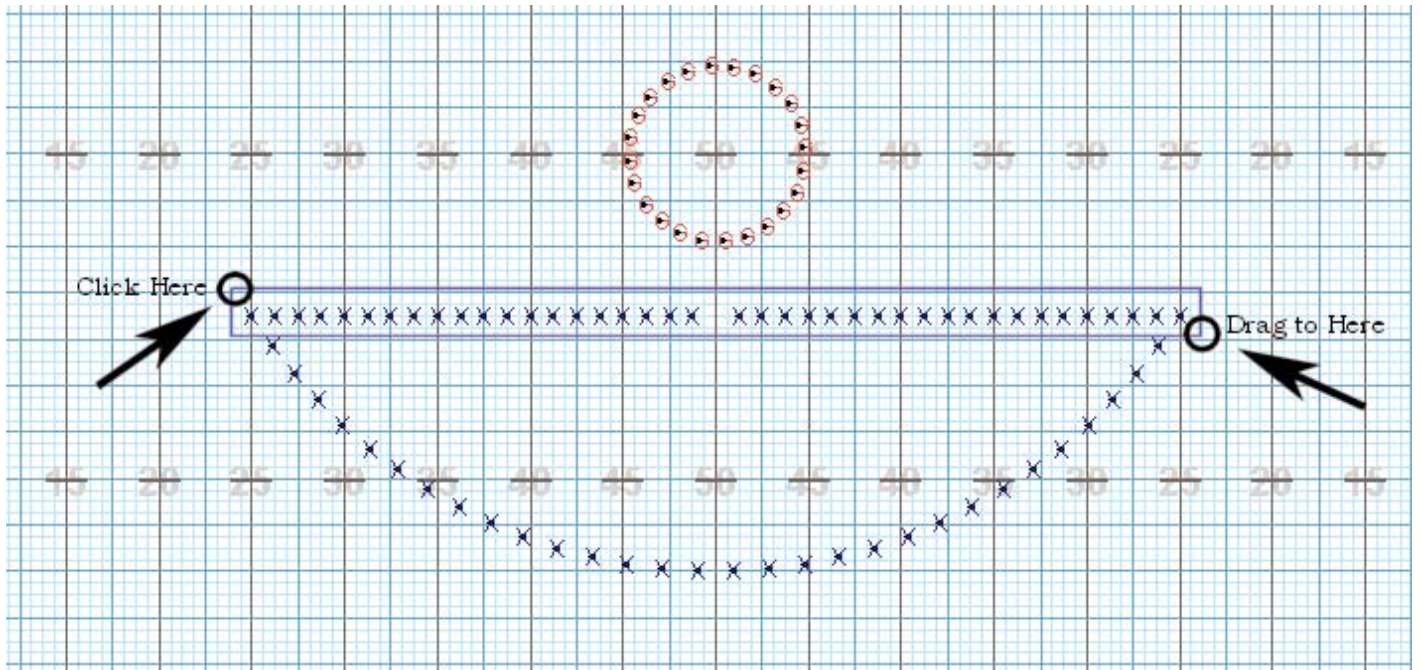
The **Red Anchor** will snap to count 16, leaving the **Yellow Anchor** at count 0. When advancing the **Red Anchor**, the performer's field locations will not appear to change even though we are now looking at count 16. This is because editing has not been done. Performers at count 16 are holding from count 0. In fact, 3D has established a hold to the end of the drill.

To create the formation at set #2, you will be selecting shapes and then using edit tools to reshape them. In this example, our **Red Anchor** is at count 16 and therefore the shapes we are editing are at count 16. Since the **Yellow Anchor** is at count 0, the transitions will be created between count 0 and 16. From count 0 to count 16, we will have the two lines **Push** (or move) forward towards the home sideline.

In order to **Push** the lines, we first need to select the lines on the field. In this example, we will choose a [Box Selection](#) tool for that purpose. Select the [Box Selection](#) tool from the [Tool Palette](#).

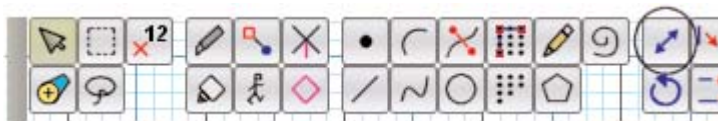


Click above and to the left of the first position of the left line and drag down and to the right until both lines are encompassed within the rectangle you will be creating.



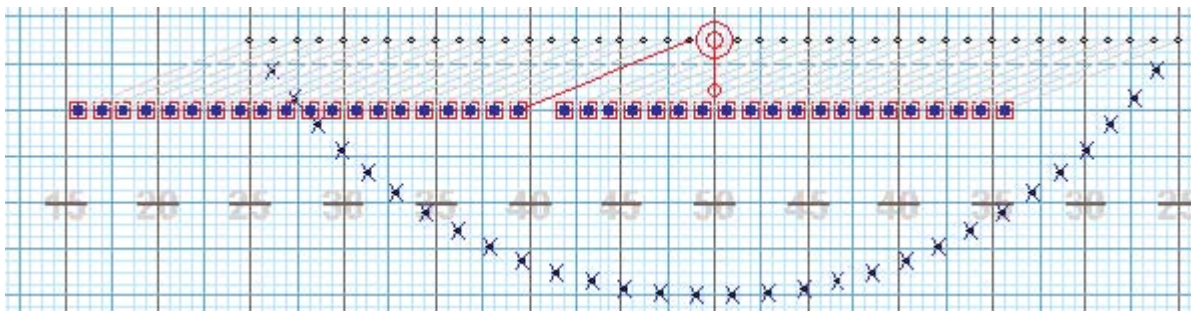
The performers of both lines will be outlined in bold red indicating that the two lines are selected.

Now that we have selected the two lines, we need to choose a tool to manipulate them. Click on the [Push](#) tool in the [Tool Palette](#). A **Push Tool Control Panel** will appear.



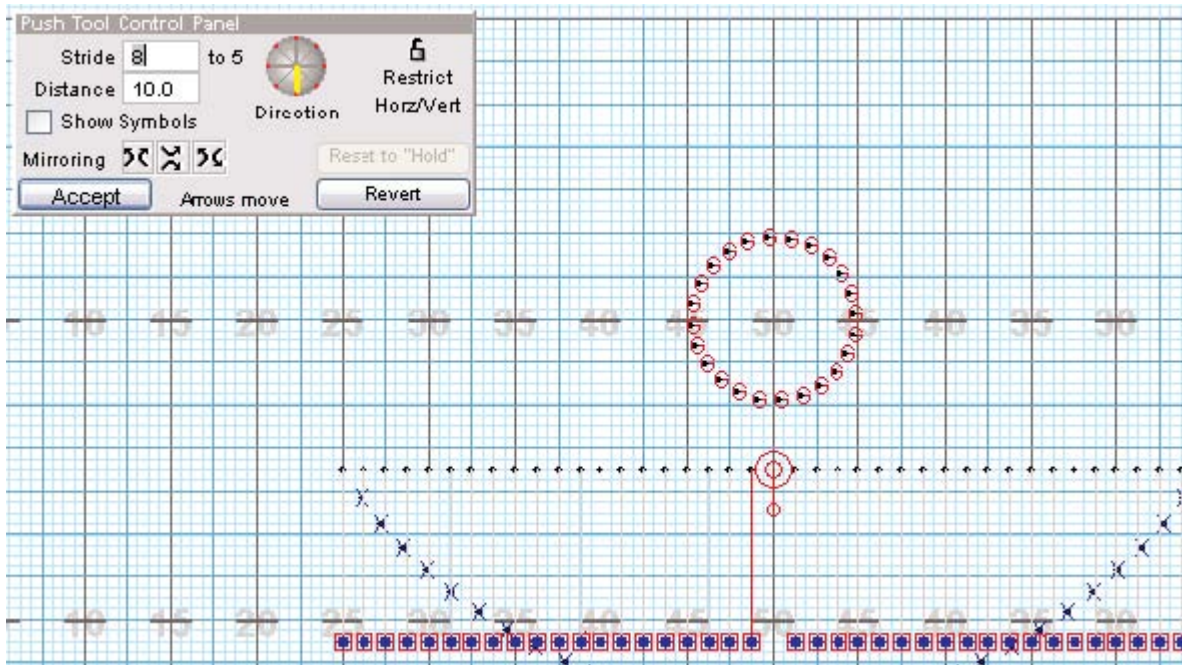
Before committing this transition to the file, this would be a good time to experiment with various editing options of the **Push Tool Control Panel**. Press the [DOWN ARROW] key of the computer keyboard 16 times. This procedure is used to push a shape implementing the down or up arrow keys.

You can drag any editing handle located on each performer in the selected lines to a new location. All selected places will similarly move as well.



Click on the **Revert** button. The shape will return back to the original location.

In the **Stride** text box, enter the number “8”. This will cause each position to move a distance at a stride of 8 steps to 5 yards in 16 counts (the number of counts between our **Yellow** and **Red Anchors**).



Located on the left side of the [Count Track](#) are the [Animation Controls](#). Click on the **Play** button and the selected line will move forward. When the pointer on the Count Track reaches count 16, the animation will stop.

Click **Accept** to accept the movement of the selected lines.

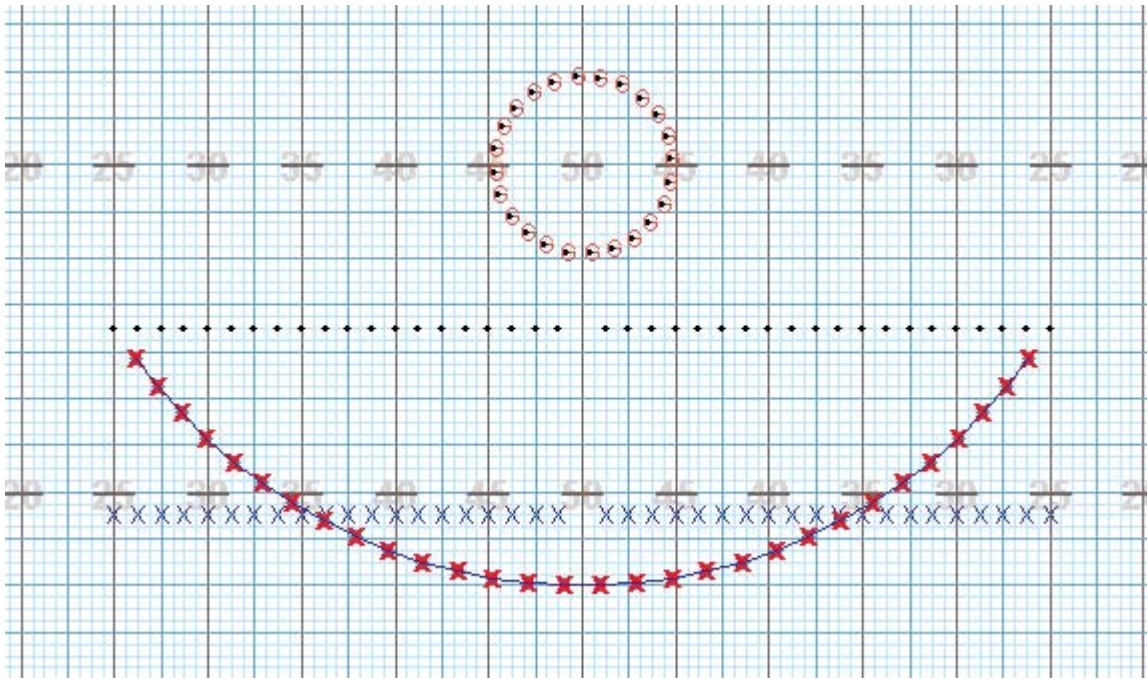
Select [Save](#) from the **File** menu.

Splitting Shapes

There will be times when you will want one portion of a shape to separate and “split off” from the rest of the shape.

You'll first need to select a shape that you want to split into two parts. In this example, we will select the arc. Select the [Pointer Selection](#) tool of the [Tool Palette](#). You can also activate the **Pointer Selection** tool by right-clicking on the field.

Click on any position of the arc. All performers in the arc will appear in bold red to indicate that the shape is selected.



Click on the [Knife](#) tool in the [Tool Palette](#). A **Knife Tool Control Panel** will appear. The **Knife** tool is used to cut a shape into two or more shapes.



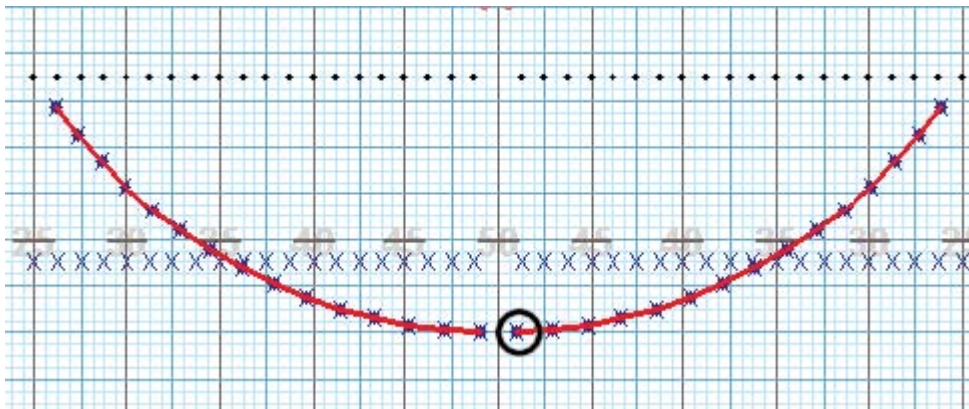
The **Knife Tool Control Panel** behaves differently from other tool panels. By default, there is no active **Accept** button. Every cut with the knife is accepted without having to click an **Accept** button. This is usually preferred because the [Knife](#) tool is used quite frequently for single cuts. Requiring the click of an **Accept** button would simply add an extra step. However, if you wish to make the **Knife Tool Control Panel** behave like typical 3D control panels, you would uncheck the **Accept each change and stick around...** option. When this option is off, the **Accept** button will be available, and if not clicked when you are finished cutting, no changes will occur.



With your cursor, click on one of the two positions closest to the 50 yard line. A red bubble will appear on the position.



Click on the other position that is closest to the 50 yard line. A gap will appear between both positions. The two arcs created will now act as two separate shapes.



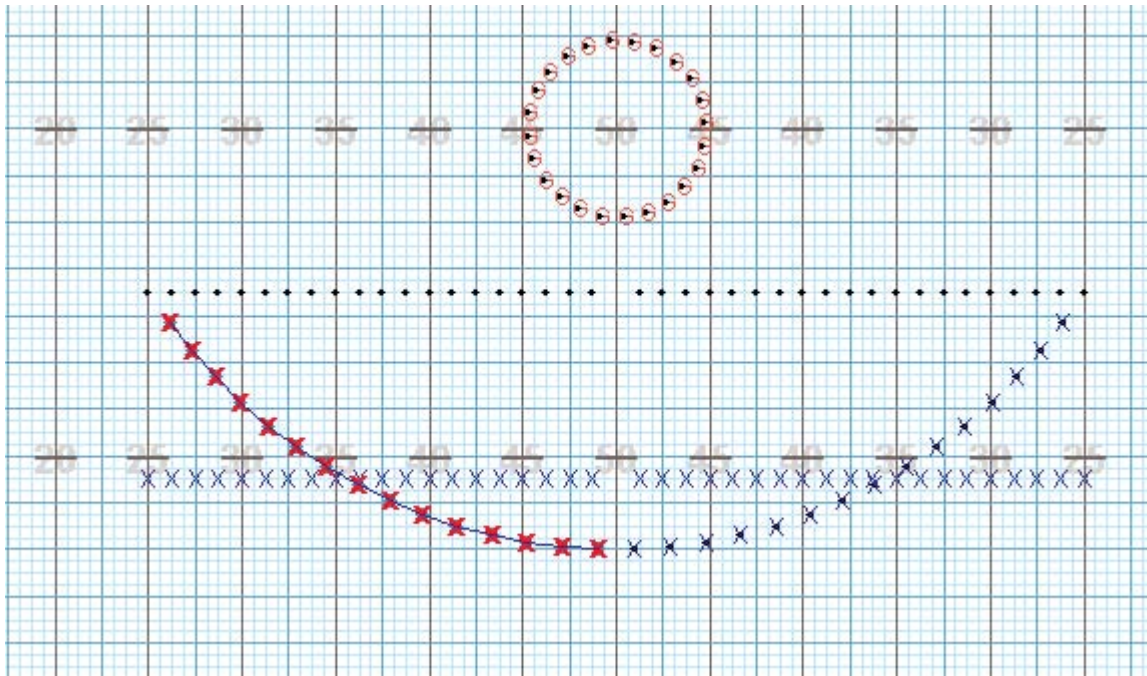
Mirroring Motion

In one step, we are going to **Push** the two arcs in two different directions. On the [Count Track](#), make sure the **Yellow Anchor** is set to count 0 and the **Red Anchor** is set to count 16.

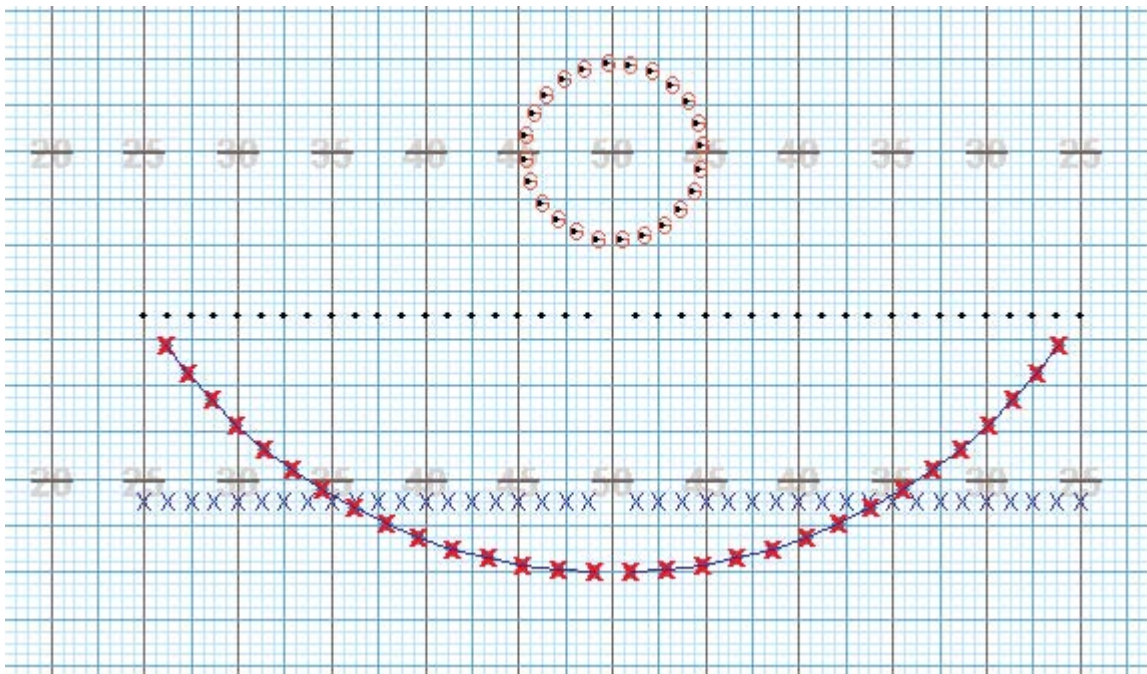
First, we will need to select the two arcs. Select the [Pointer Tool](#) in the [Tool Palette](#).



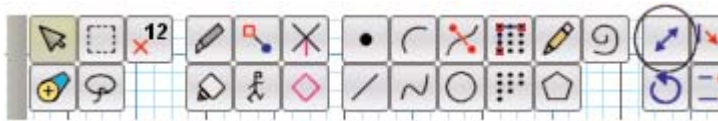
Click on any position in one of the two arcs. All of the performers in the arc will appear in bold red to indicate the arc is selected.



Press and hold the [SHIFT] key while clicking on any position in the other arc. It will also display in bold red. Holding the [SHIFT] key while selecting a shape will add that shape to any previously selected shapes or positions.



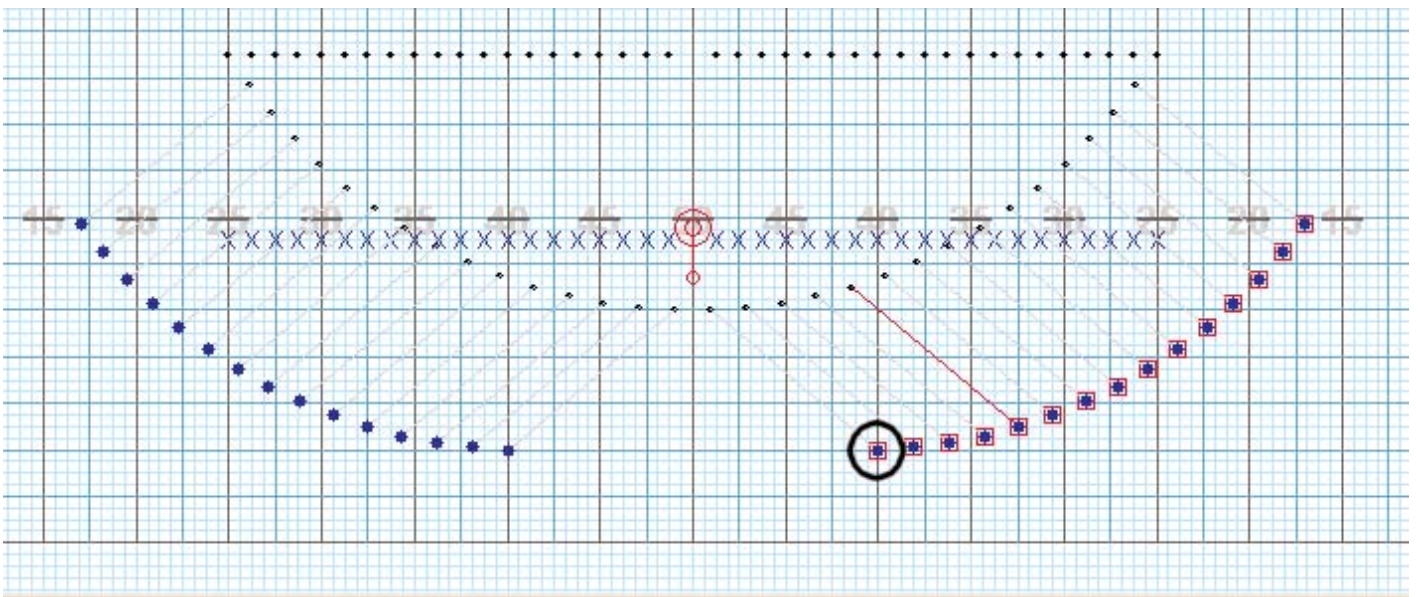
The two arcs are selected. We will choose the [Push](#) tool to move these selected arcs to a new location. Select the [Push](#) tool in the [Tool Palette](#).



Click on the **Left/Right Mirroring** option in the **Push Tool Control Panel**.



Click on the inside position of the RIGHT arc. Click and drag the position until the **Location Indicator** reads **40 yds 0.00 steps | 8.00 steps**. Both arcs will move in motion mirroring left/right to each other. Light gray lines indicating each selected performer's path will appear as you move the cursor.



If adjustment needs to be done, simply click and drag the shapes to the desired location. The maneuver will not be committed to the drill until you click the **Accept** button.

On the left side of the [Count Track](#) are the [Animation Controls](#). Click on the **Play** button to preview the moving arc with the moving lines.



Click on the **Accept** button to commit the new move to the drill.

Select [Save](#) from the **File** menu to save the changes to the file.

Expanding Circle

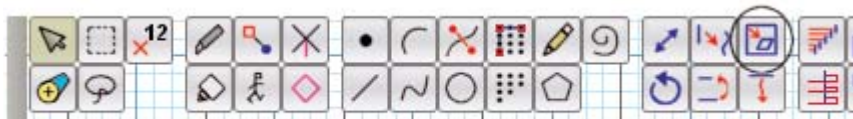
!https://manula.r.sizr.io/large/user/484/img/original/circledrawn-resize3.png!From counts 0 through 16, we will expand the (color guard) circle.

On the [Count Track](#), make sure the **Yellow Anchor** is set to count 0 and the **Red Anchor** is set to count 16. Clicking on the page tab on count 16 will set both anchors at one time.

To select the circle for editing, click on the [Pointer Selection](#) tool in the [Tool Palette](#).

Click on any position in the circle and all of the performers in the circle will be highlighted in red indicating that they are selected.

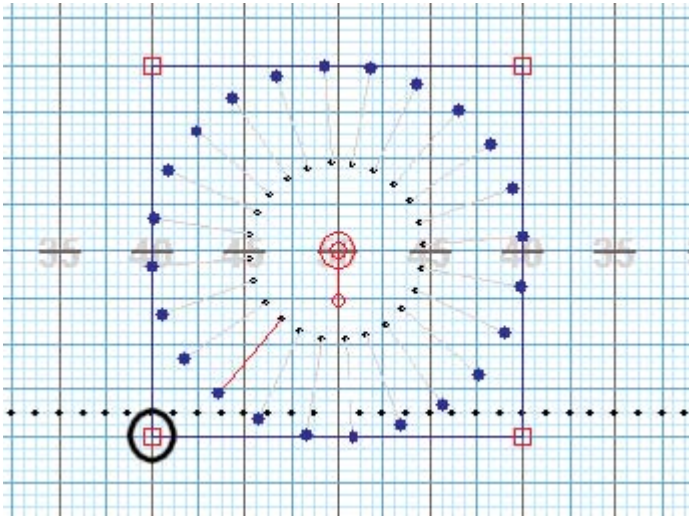
Click on the [Resize Tool](#) in the [Tool Palette](#). A **Resize Tool Control Panel** will appear.



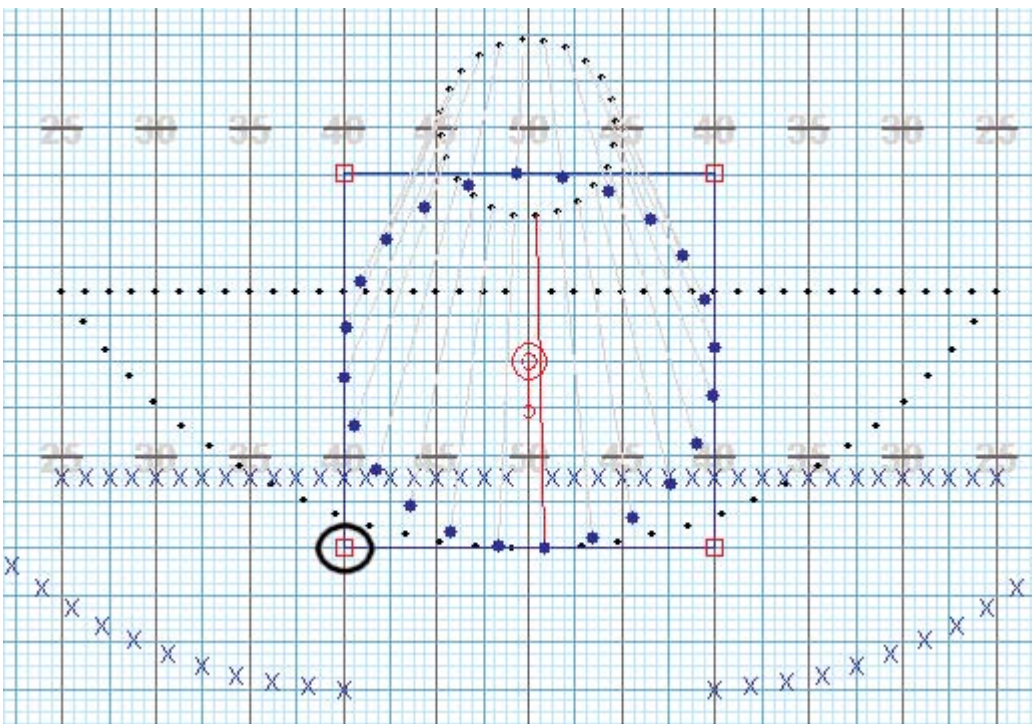
In the **Control Panel**, if not already selected, click on the **Scale** option.



Let's experiment with options in the **Control Panel**. Click and drag the lower left (red) handle until the **Location Indicator** reads **40 yds 0.00 steps | 40 steps**. The circle will expand away from the center. The outside edge should touch both 40 yard lines.



Click directly in the center of the **Reposition Handle** and drag until the **Location Indicator** reads **50 yds 0.00 steps | 36 steps**. The circle will not only expand, but it will also move towards the home sideline.

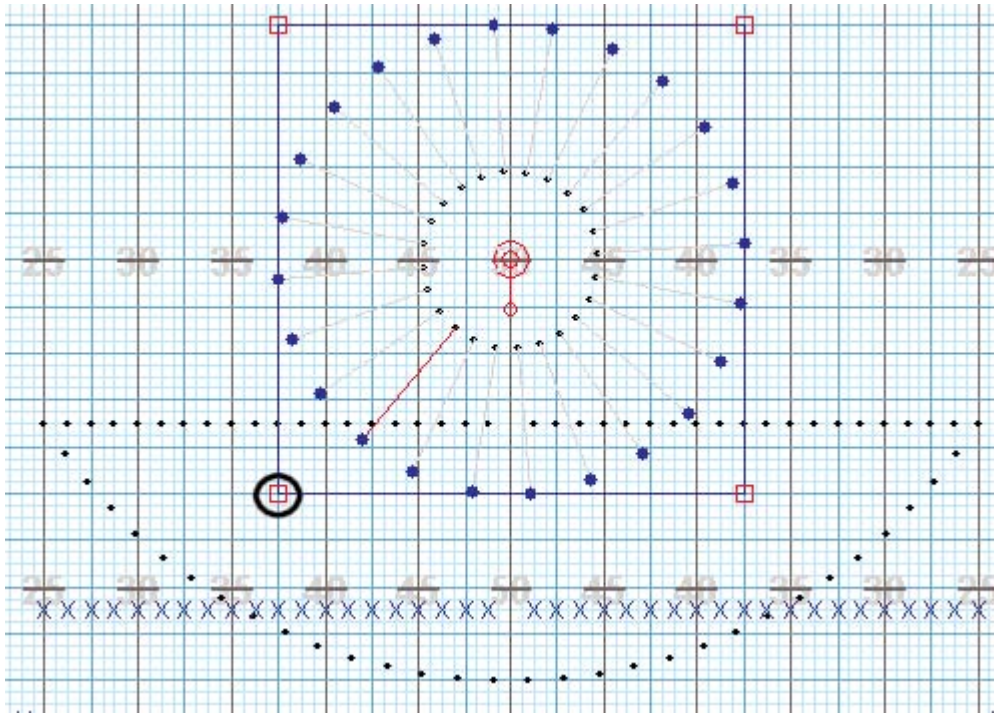


On the left side of the [Count Track](#) are the [Animation Controls](#). Click on the **Play** button to preview the expanding circle with the movement of the other shapes in the formation.



Click the **Revert** button in the **Control Panel** so the circle will return back to its original shape.

Click and drag the lower left (red) editing handle until the **Location Indicator** reads **35 yds 4.00 steps | 36 steps**. The circle will expand away from the center.



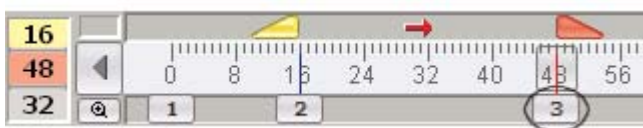
Click on the **Accept** button to commit the change to the drill.

Select Save from the **File** menu.

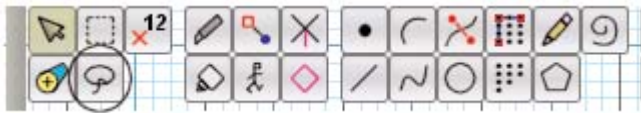
Creating Set #3

You have completed the first 16 counts of drill. To continue to the next set, you must move the **Red** and **Yellow Anchors** on the [Count Track](#). From counts 16 through 48, we will reshape the two arcs using a **Follow the Leader** maneuver.

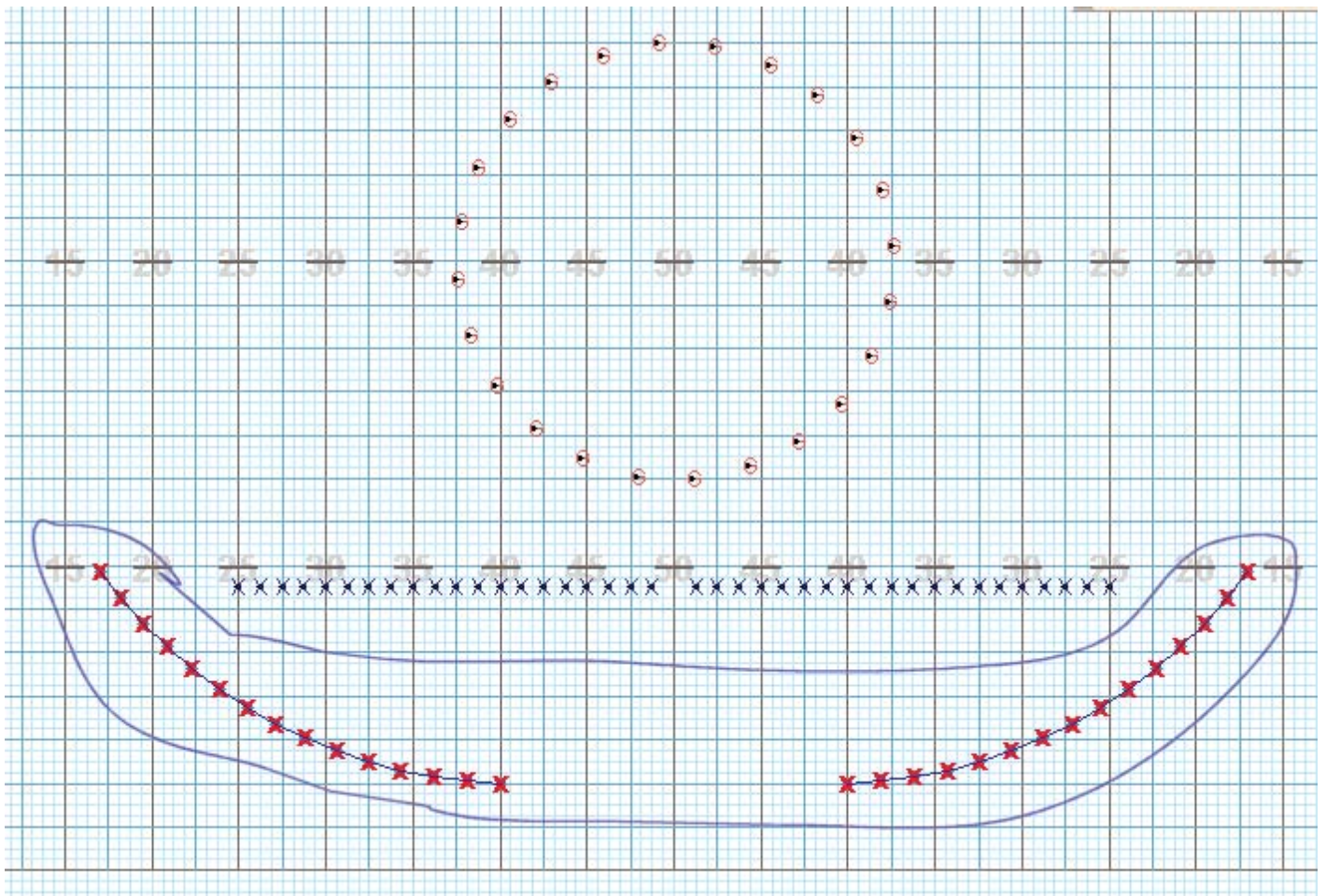
Click on **Page Tab #3**. The **Yellow Anchor** will jump to count 16 and the **Red Anchor** will jump to count 48.



First we need to select the two arcs. In this example we will choose the **Lasso Selection Tool**. Select the [Lasso Selection](#) tool from the [Tool Palette](#).



Using the cursor, click and drag a lasso around both arcs. Once selected, both arcs will be shown in bold red to indicate they are selected. Since the [Lasso Selection](#) tool selects only places that are inside the lasso, it is possible to miss some positions. Make sure all of the performers in the arcs are selected.

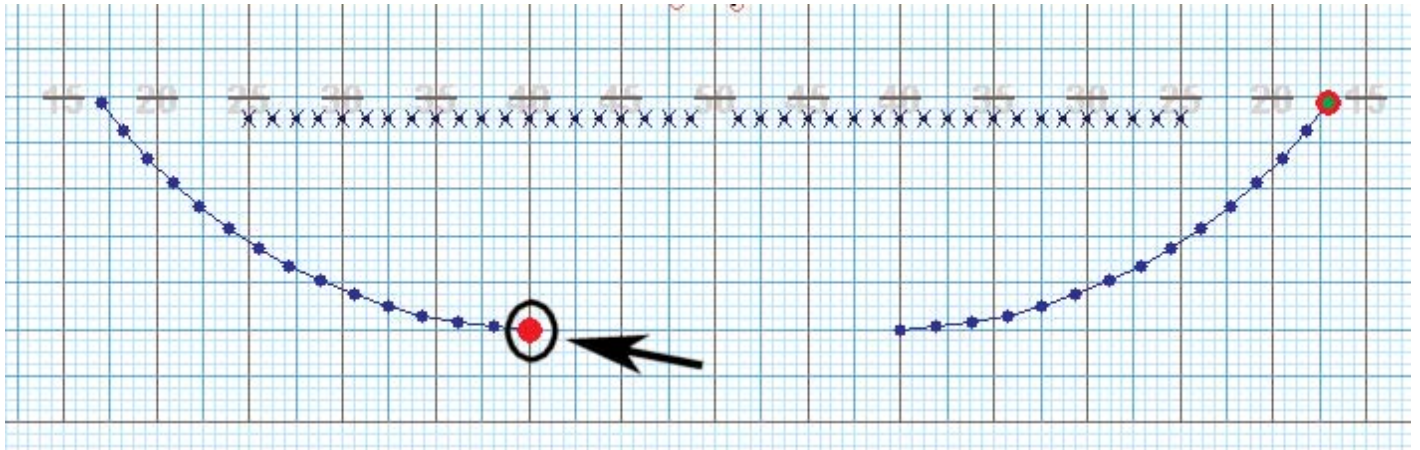


Click on the [Follow the Leader](#) tool in the [Tool Palette](#).

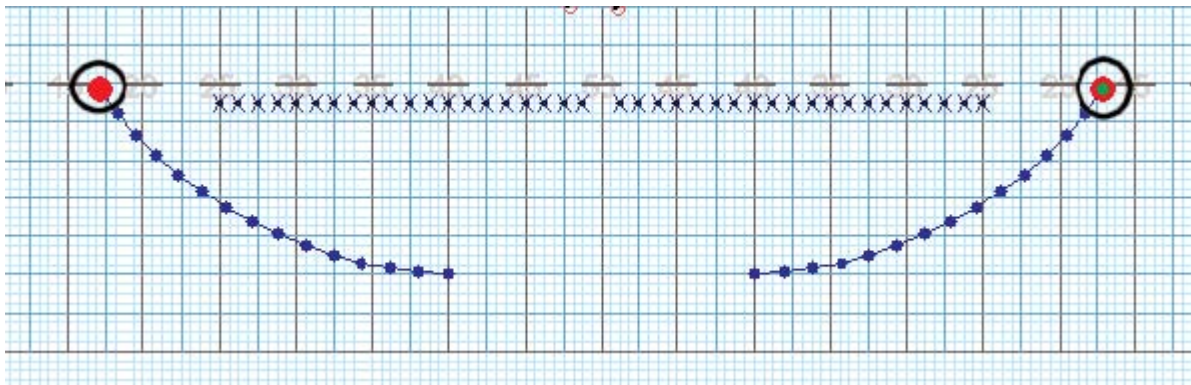


Red “leader” dots highlighting the end performers on each arc indicate the performer that will be the leader for the follow the leader movement. Depending on your application, the correct leaders may already be chosen, and this step is not necessary.

We need both of the leaders to be the outer most performers of the arcs. If both red “leader” dots are not on the proper position of one or both of the arcs, you will move the “leader” dots to the proper endpoint by clicking on the incorrect “leader” dot. The red “leader” dot will automatically move from one end of the arc to the other.



The picture above is a sample of leaders where the leader in the left arc is on the incorrect endpoint.

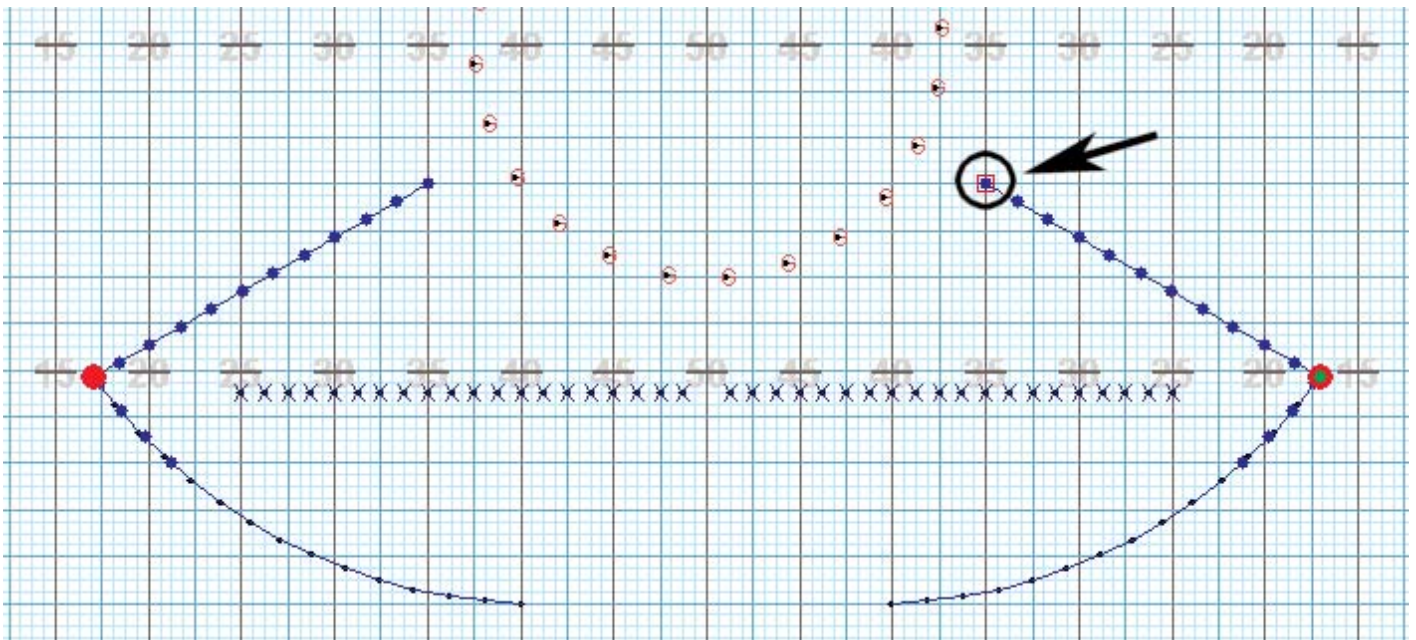


The picture above is a sample of leaders who are correct.

In the **Follow the Leader Control Panel**, click on the **Left/Right Mirror** option.



Click the mouse on the RIGHT side of the field at the location where the **Location Indicator** reads **35 yds 0.00 steps | 44.00 steps** to start a path. A straight path for both shapes will appear. A red **editing handle** (square) will appear at the point where you clicked.



Press and hold the [SHIFT] key while clicking the mouse approximately halfway up one of the pathways of one of the arcs. A new editing handle (red square) will appear on the RIGHT path.



Click **Accept** to commit the change.

Save your work.

Gluing Lines

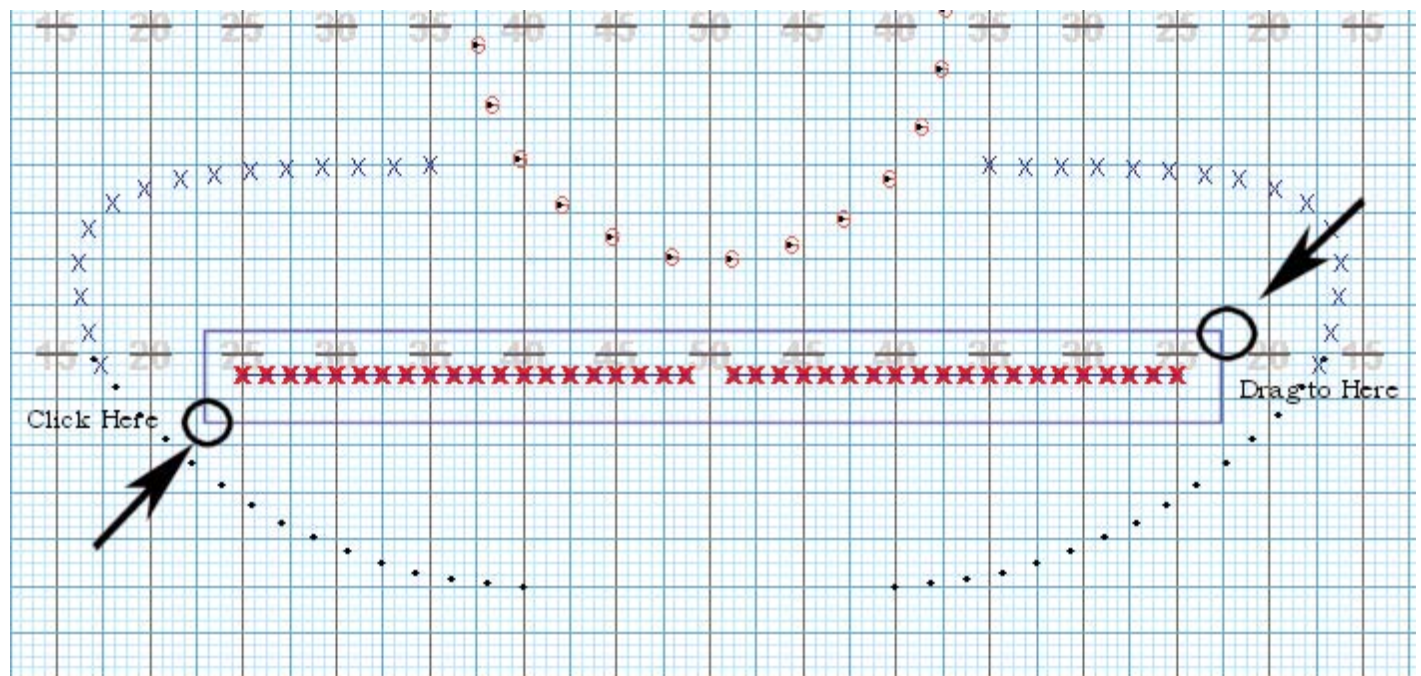
There will be times when you will want to connect (or reconnect) one shape to another. This function is most important when maneuvering two (or more) shapes into one large formation.

For this example, make sure the [Count Track's](#) **Yellow Anchor** is at count 16 and the **Red Anchor** is set to count 48.

Select the [Box Selection](#) tool from the [Tool Palette](#).



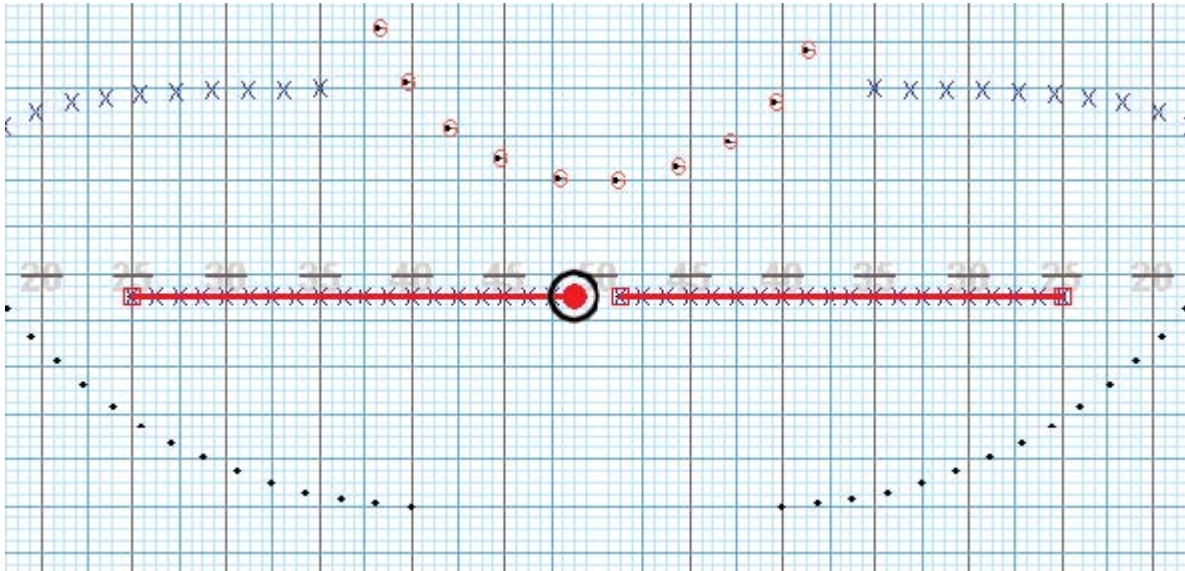
On the field, select both lines.



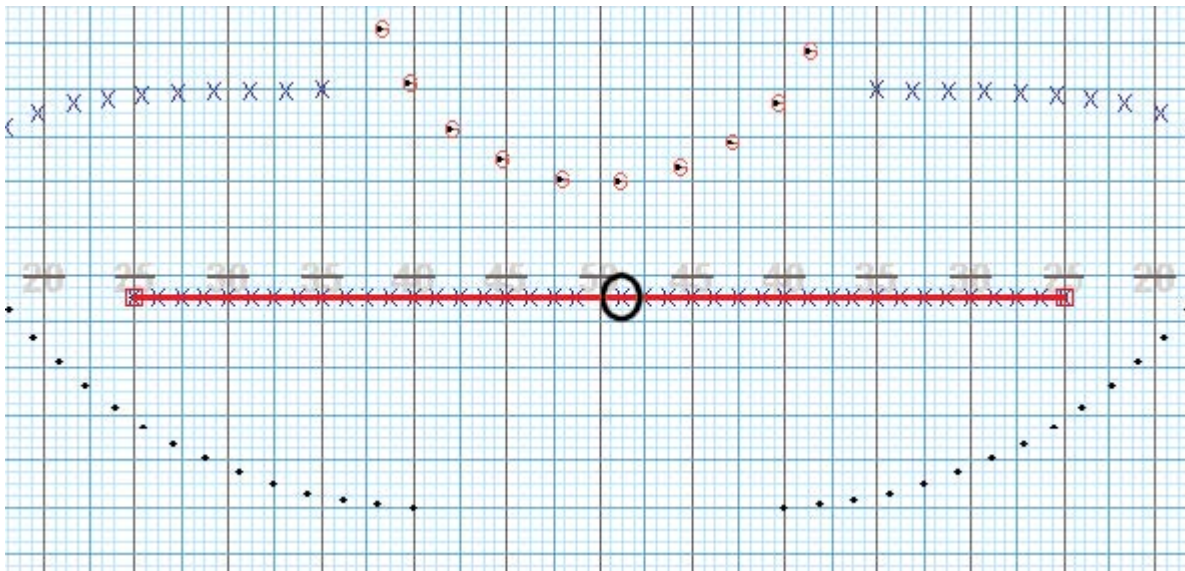
Select the **Glue Tool** in the [Tool Palette](#). A **Glue Tool Control Panel** will appear.



With your cursor, click on one of the two positions closest to the 50 yard line. A red bubble will appear.



Click on the other position closest to the 50 yard line. A red line connecting both positions will appear. The two lines will now behave as one line when selecting it.



Save your work.

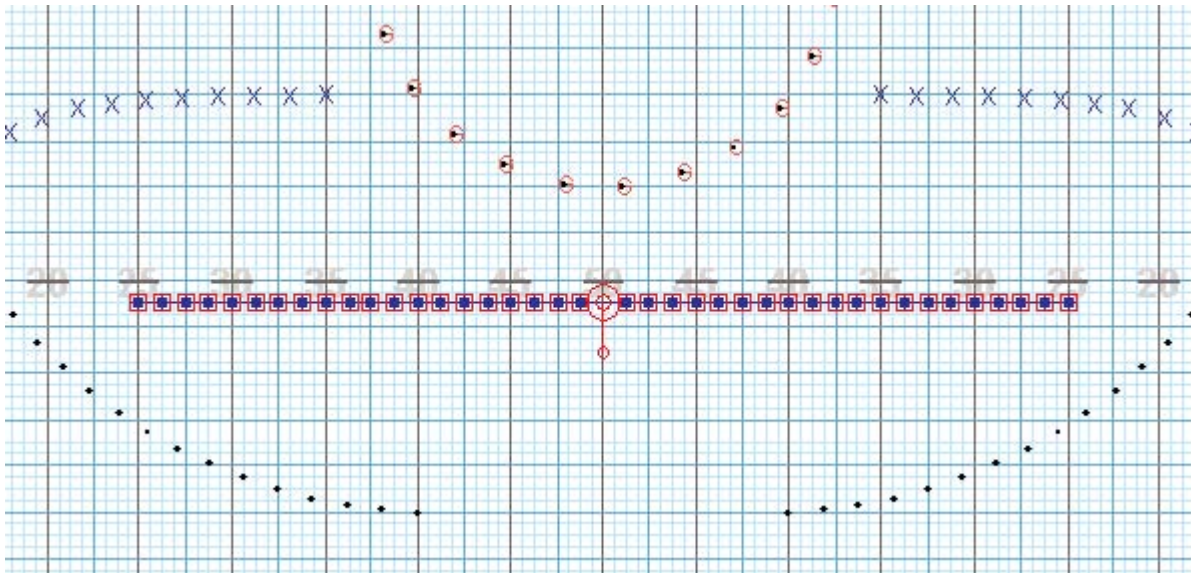
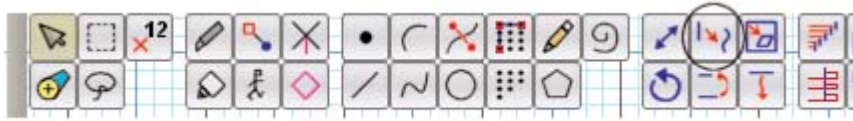
Morphing Lines

In this exercise we will “reshape” the lines into a new shape.

For this example, make sure the [Count Track's](#) **Yellow Anchor** is at count 16 and the **Red Anchor** is set to count 48.

If not already selected, select the line with one of these selection tools: [Pointer Selection](#), [Box Selection](#), or [Lasso Selection](#).

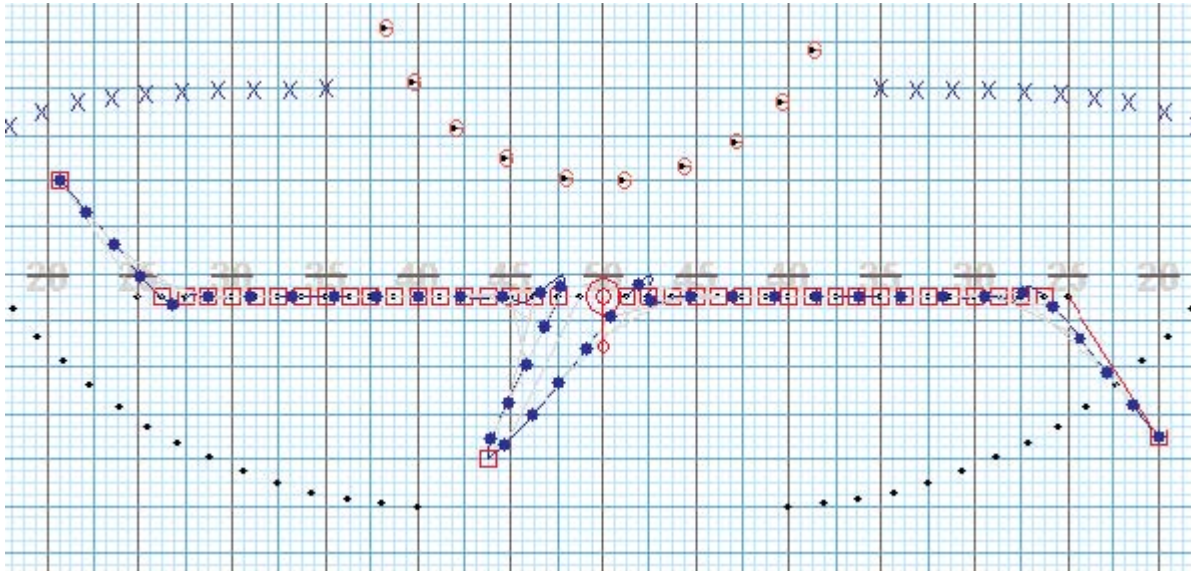
Click on the [Morph Tool](#) in the [Tool Palette](#). A **Morph Tool Control Panel** and red **editing handles** will appear over each performer of the selected line.



Experimenting With Editing Options

Let's experiment with some of the option in the **Morph Tool** and its **Control Panel**.

Drag any of the **editing handles** to any position on the field. When one handle is adjusted, pathways for each position of the selected shape will be altered in order so that equal spacing is maintained in the new shape.

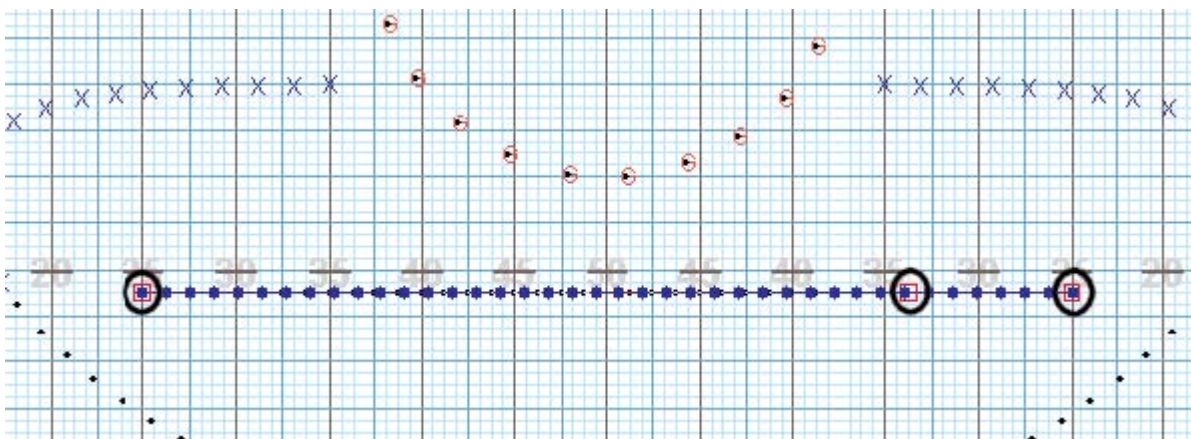


Click **Revert** to return the shape back to its original shape.

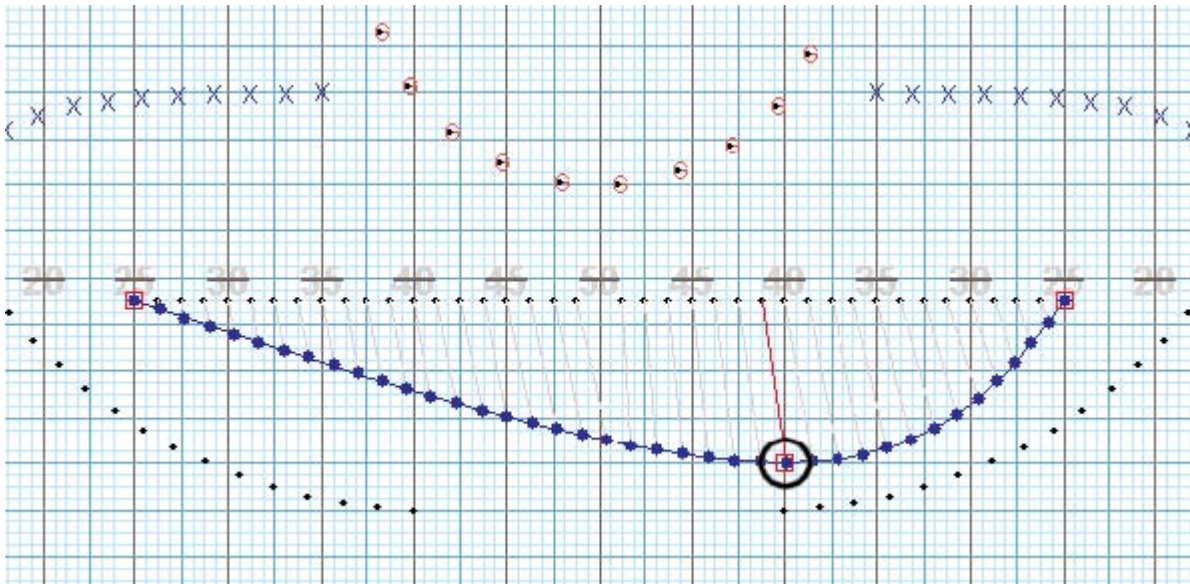
Click on the **Delete Half** (handles) option in the **Control Panel**. The fewer number of editing handles you work with, the more fluid shapes will become.



Continue to click the **Delete Half** button until only three handles are remaining on the shape. If you click too many times, click **Revert** and try again.



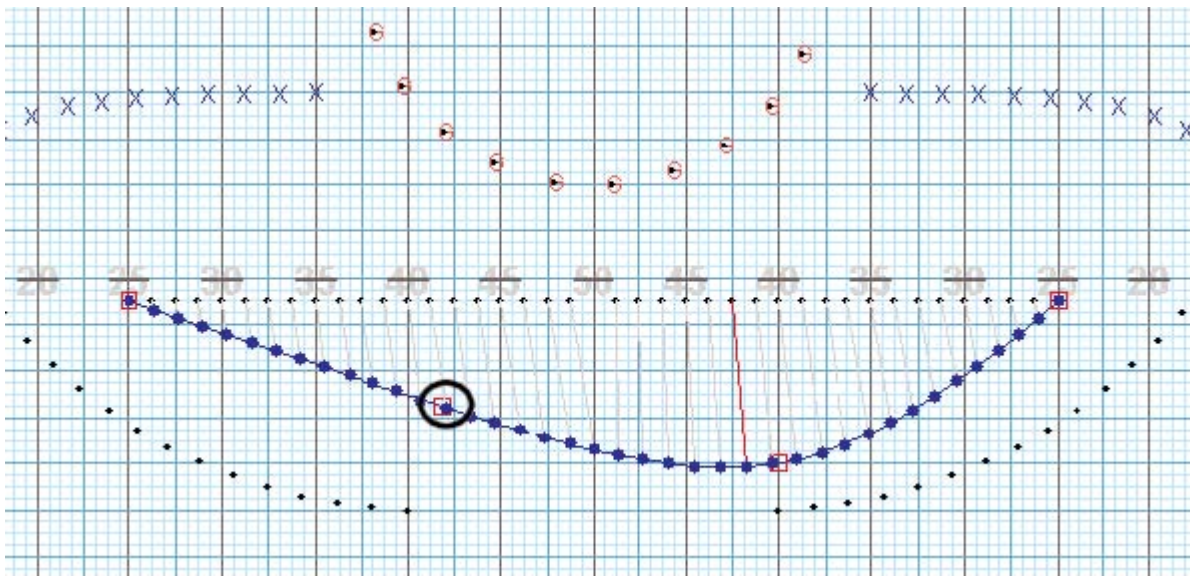
Drag the second **editing handle** until the **Location Indicator** reads **(Right) 40 yds 0.00 steps | 12 steps**.



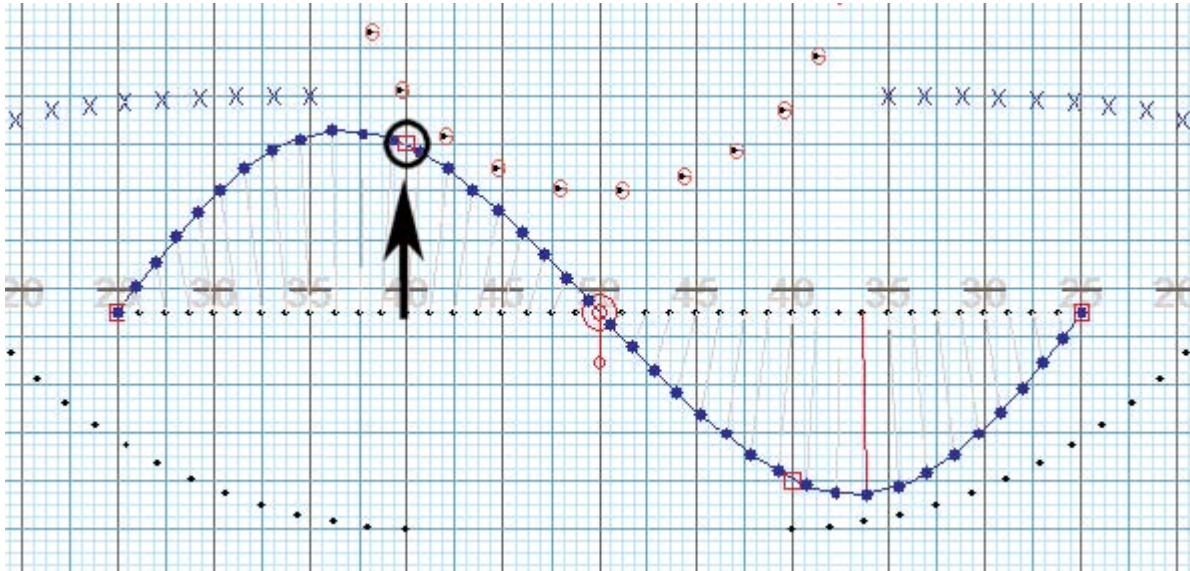
Use the **Play** button in the [Animation Controls](#) to preview these changes.

Adding an Editing Handle

Now we are going to put an **editing handle** back in the shape. Press and hold [SHIFT] while clicking the mouse on the left side of the second editing handle. A new editing handle will appear on the shape.



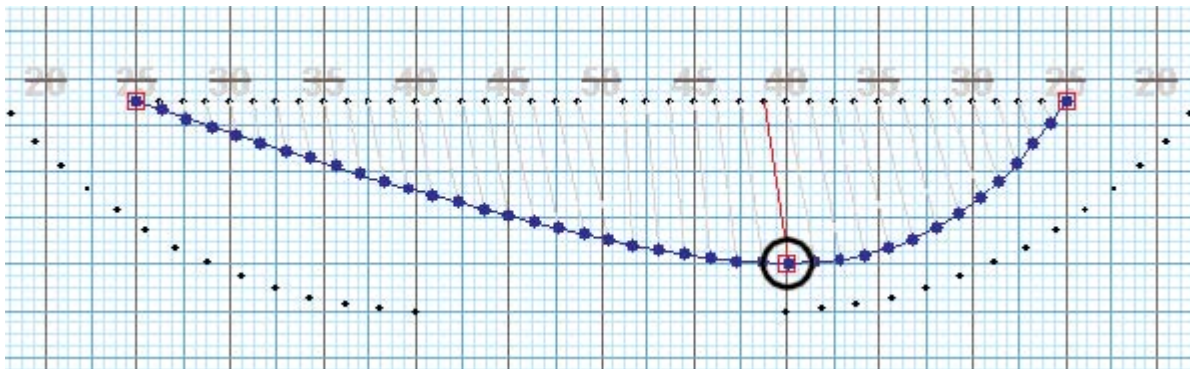
Click and drag the new **editing handle** to the location indicated by the **Location Indicator (Left) 40 yds 0.00 steps | 40 steps**.



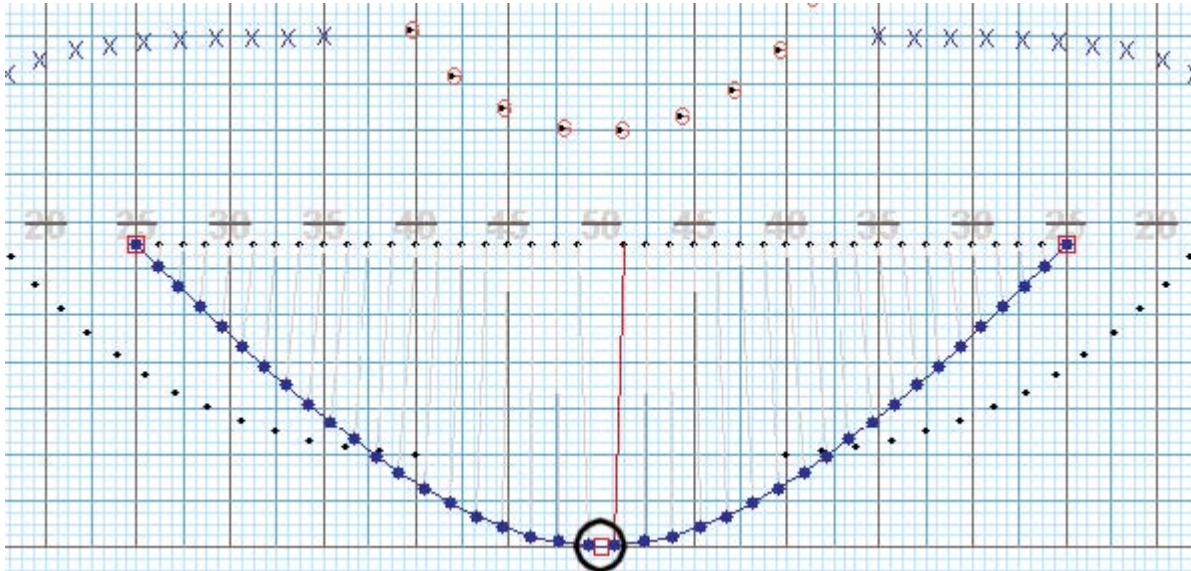
Use the **Play** button in the [Animation Controls](#) to preview these changes.

Removing an Editing Handle

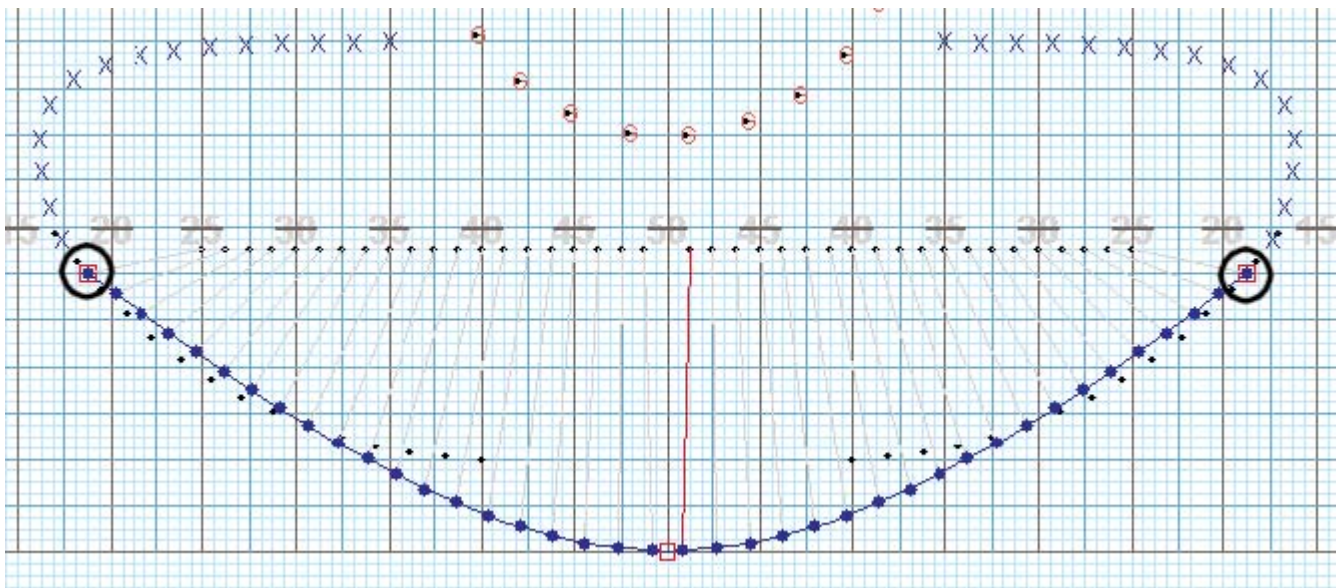
Now let's remove a single **editing handle**. Press and hold [SHIFT] and click directly on the second **editing handle** to the left of the 50 yard line. The handle will vanish and the shape will change accordingly.



Click and drag the next to last **editing handle** until the **Location Indicator** reads **50 yds 0.00 steps | 0.00 steps**.



Click and drag BOTH outside **editing handles** (the endpoints) until the **Location Indicator** reads **15 yds 6.00 steps | 24 steps**. If necessary, re-adjust the endpoints to connect with curvilinear forms on either side of the circle.



Use the **Play** button in the [Animation Controls](#) to preview these changes.

Click **Accept** to commit the morphed shape to the drill.

Save your work.

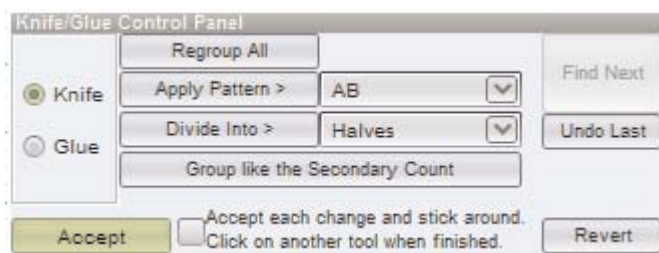
Pass Through Example

In this example we'll transform the circle into a meshed vertical line. To achieve this, we will use the [Knife](#) tool, [Glue](#) tool, and the [Morph](#) tool.

Make sure the [Count Track's](#) **Yellow Anchor** is at count 16 and the **Red Anchor** is set to count 48.

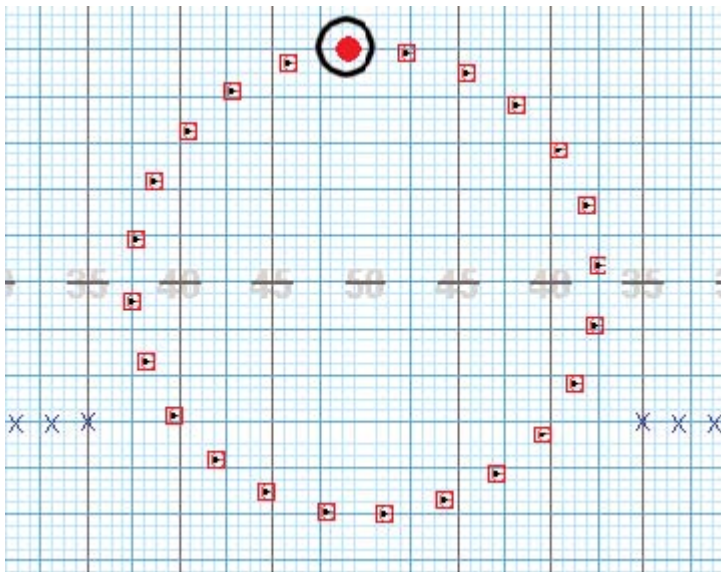
If not already selected, select the circle on the field using one of the [Selection](#) tools.

Click on the [Glue](#) tool in the [Tool Palette](#). A **Knife/Glue Control Panel** will appear.

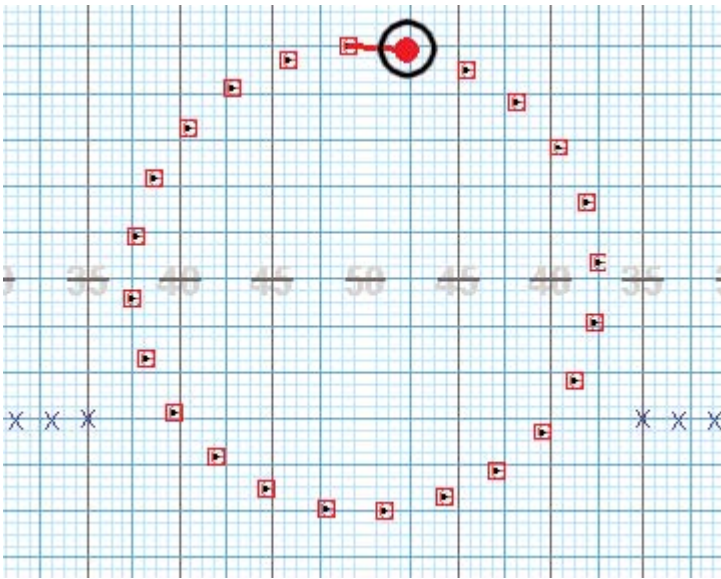


Click the **Regroup All** button in the **Control Panel**. Observe that the circle shape will segment into individual positions. Next, we will “reorder” the positions in a pattern to achieve our *X/O” grouping.

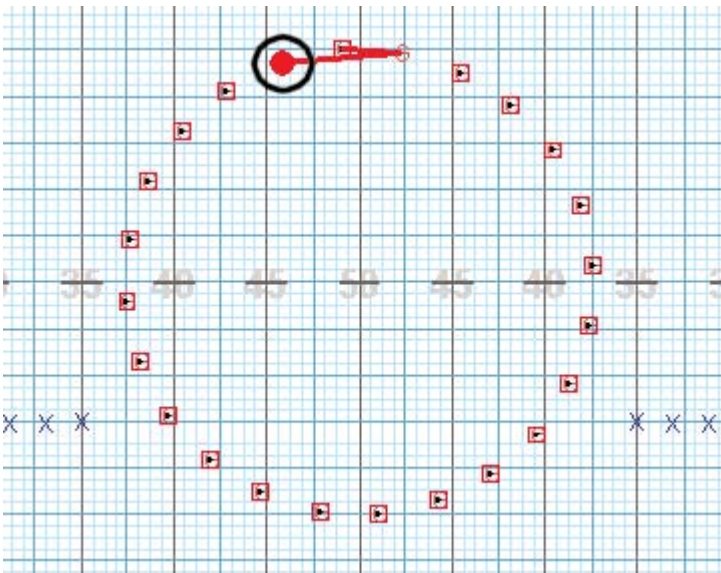
With the cursor, click on the position at the top of the circle and to the left of the 50 yard line. A red dot will appear on that position.



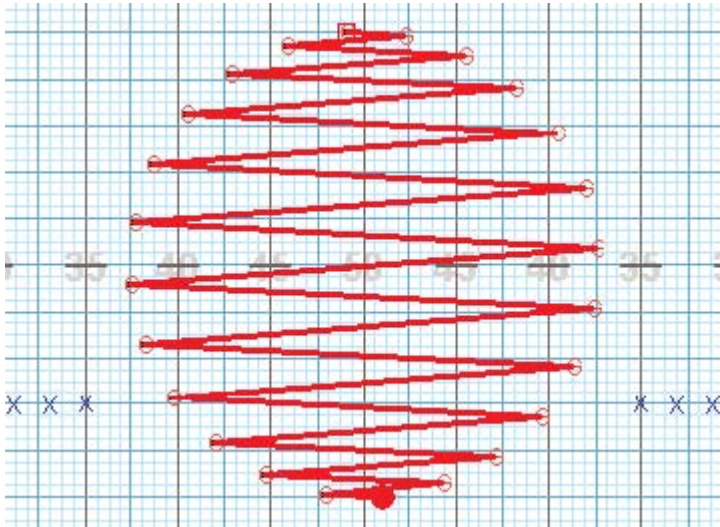
Move the cursor across the 50 yard line and click on the position at the top of the circle and to the right of the 50 yard line.



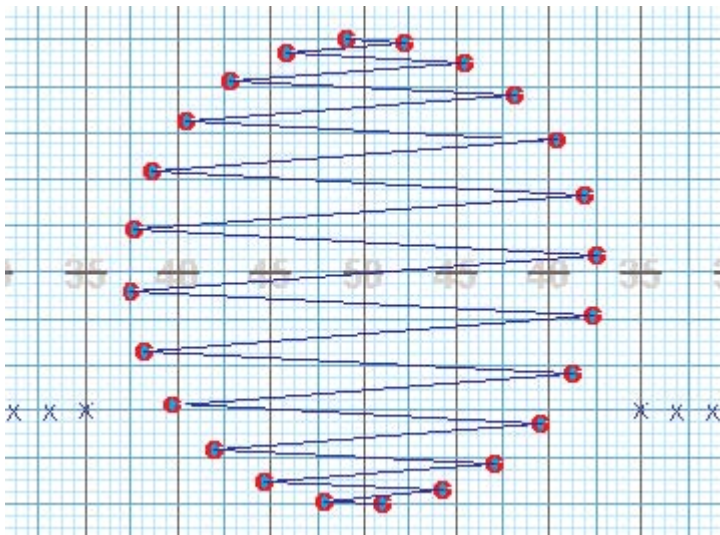
Move the cursor to the left and select the next position left of the 50 yard line.



Continue selecting each position of the circle in the same “zig/zag” pattern until all positions of the circle have been selected. If you mess up, simply click the **Undo Last** or **Regroup All** and start again.



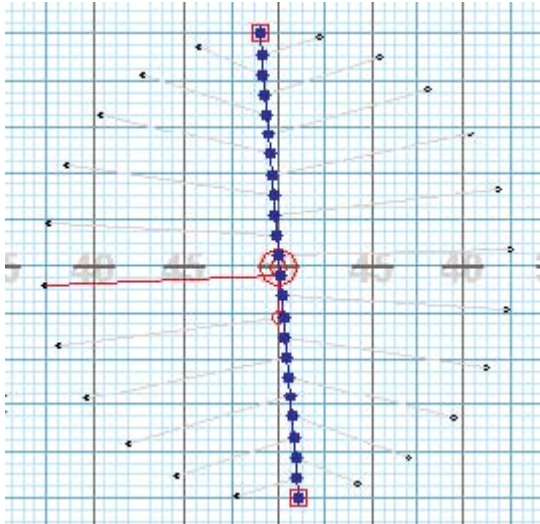
Once all positions in the circle have been regrouped, use a selection tool such as the [Pointer Selection](#) tool to select the circle. Notice that the blue lines in the selected circle have now been rearranged to indicate the new grouping order.



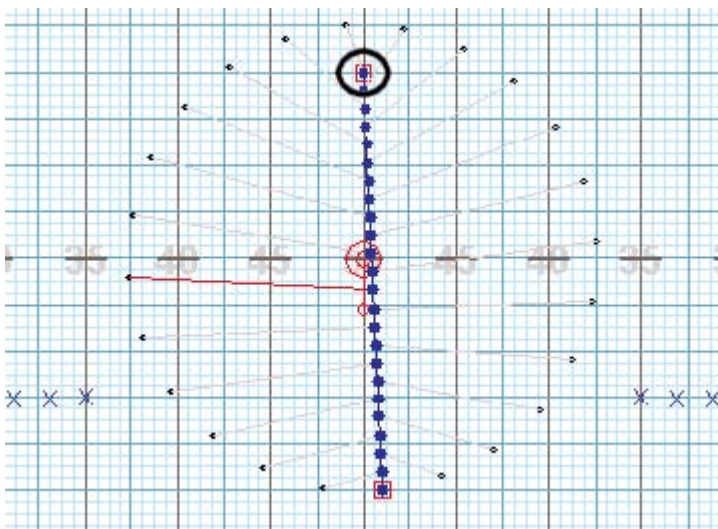
Now that we have regrouped the circle to a zig-zag pattern, if we morph the circle into a line, it will make the circle positions mesh. Click on the [Morph](#) tool in the [Tool Palette](#).



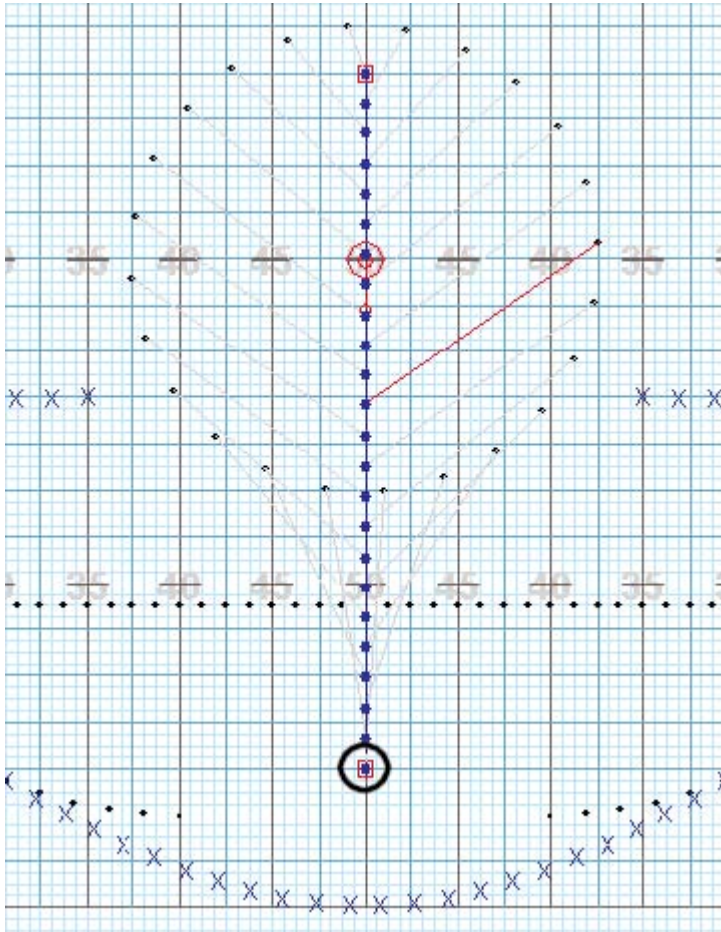
Click on the **Delete Half** button to remove editing handles in the **Morph Tool Control Panel** until all but the handles at the end points of the shape remain.



Click and drag the upper **editing handle** until the **Location Indicator** reads **50 yds 0.00 steps | 72 steps**.



Click and drag the lower **editing handle** until the **Location Indicator** reads **50 yds 0.00 steps | 12 steps**. The red line drawn from one of the positions designates the performer who is traveling the furthest distance during the transition. The **Step Length** and **Distance Traveled** by this performer is displayed (in red) in the **Console**.



Use the **Play** button in the [Animation Controls](#) to preview these changes.

Click **Accept** to commit the changes to the drill.

Save your work.

Creating Set #4

You have completed the first 48 counts of drill. Let's move on to the next set. In the final set of the drill we will:

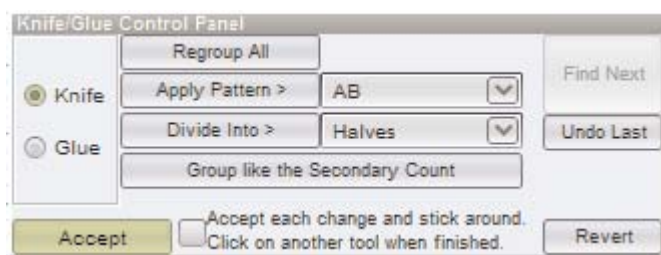
1. Segment the large arc into two smaller arcs
2. Draw two new mirrored shapes on count 72 with performers coming from two preexisting arcs
3. Match the positions of the preexisting arcs on count 48 to positions of the two new mirrored shapes on 72

Click on **Page Tab #4**. The **Yellow Anchor** will jump to count 48 and the **Red Anchor** will jump to count 72.

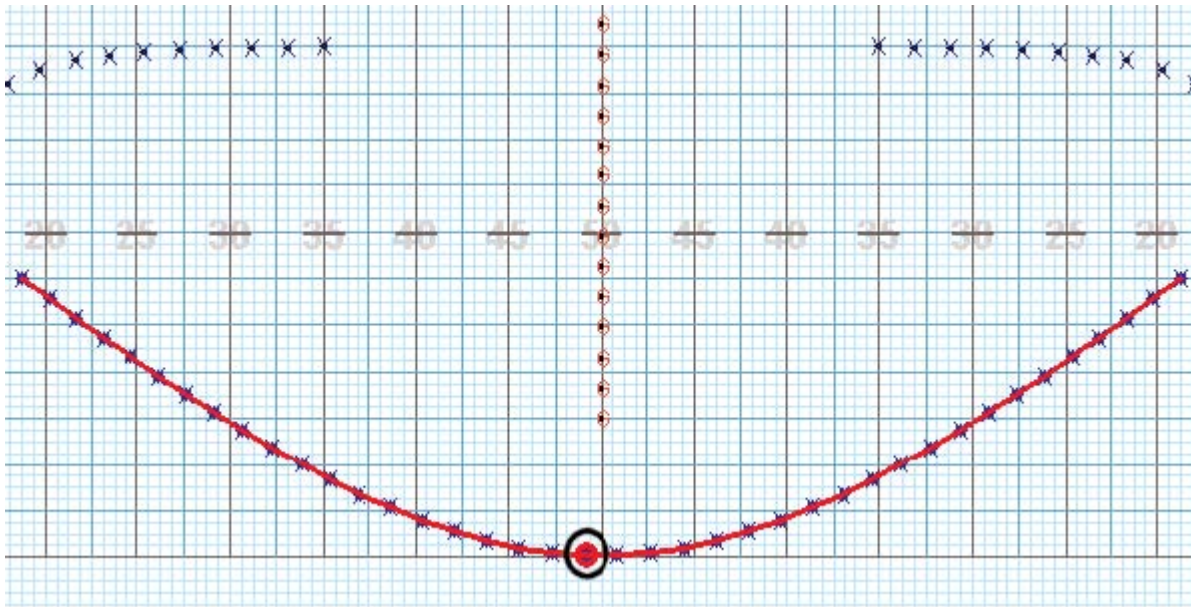


Select the large arc using a [Selection](#) tool.

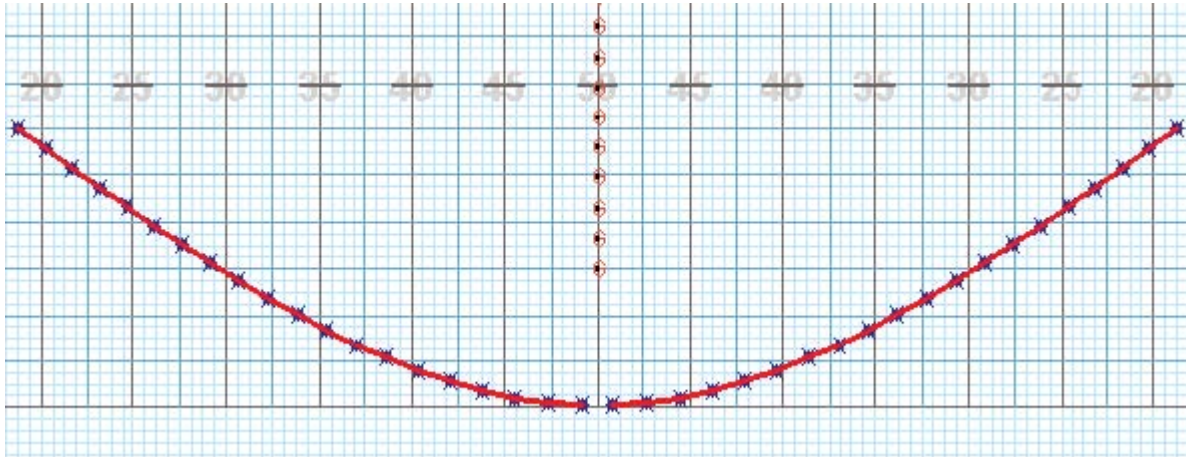
Click on the [Knife](#) tool in the [Tool Palette](#). A **Knife/Glue Control Panel** will appear



We will cut the arc into two smaller arcs. With your cursor, click on one of the two positions closest to the left of the 50 yard line. A red bubble will appear.

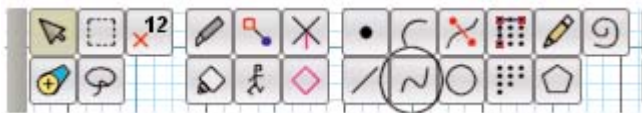


Now click on the other position closest to the 50 yard line. A gap will appear between the two positions indicating the large arc is now two smaller arcs.

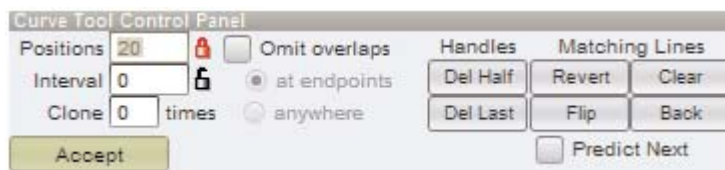


Select both arcs again using either the [Pointer Selection](#) tool, [Box Selection](#) tool, or [Lasso](#) tool.

Click on the [Curve](#) tool in the [Tool Palette](#). A **Curve Tool Control Panel** will appear.



In the **Curve Tool Control Panel**, enter "20" in the **Positions** text box.



Uncheck the **Omit Overlaps** option. Check the **Predict Next** option.



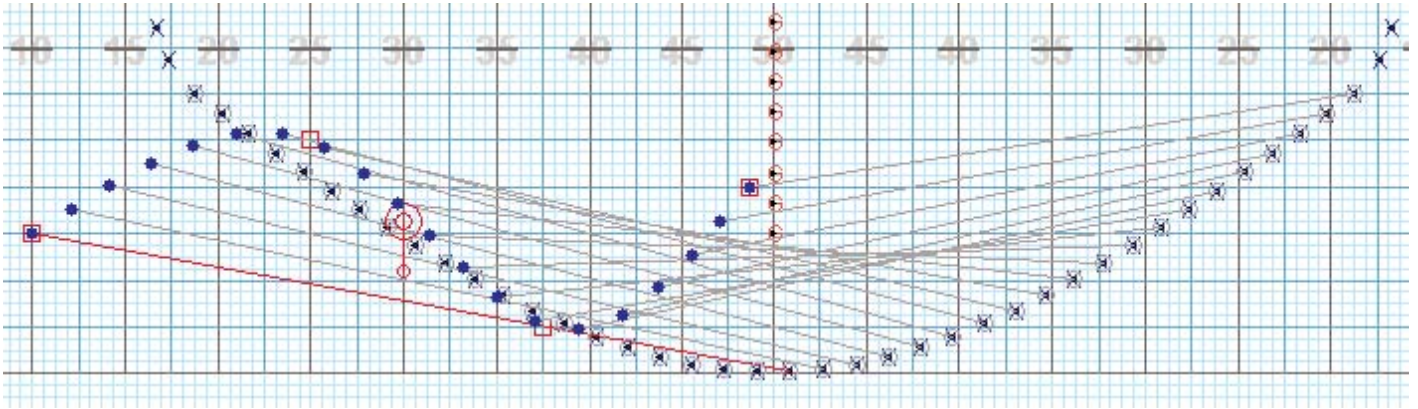
On the field, click the following points to create the shape of the curved form.

LEFT 45 yds 6.00 steps | 16.00 steps

LEFT 35 yds 4.00 steps | 4.00 steps

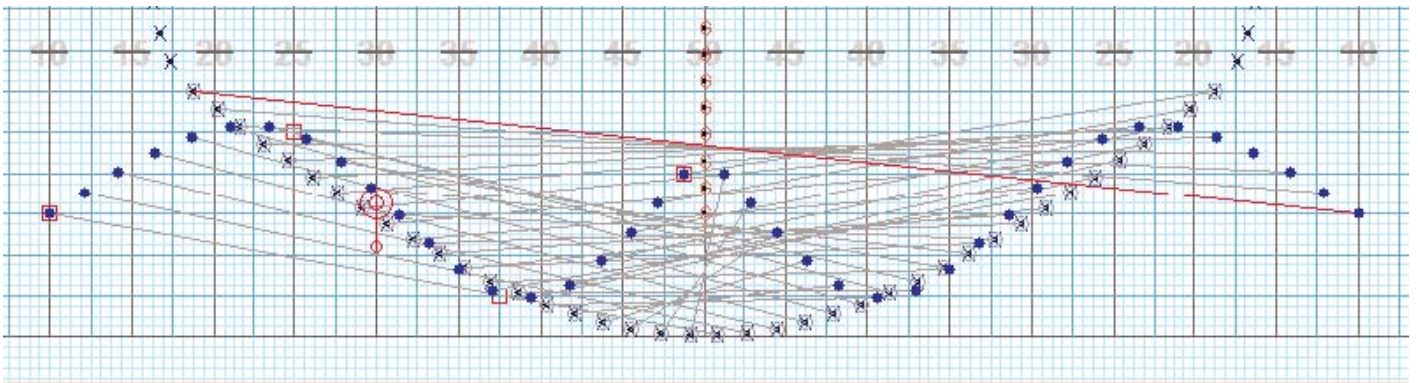
LEFT 25 yds 0.00 steps | 20.00 steps

LEFT 10 yds 0.00 steps | 12.00 steps



While entering these points, the red **editing handles** will appear at each point. These **editing handles** can be dragged to adjust the shape. We are creating this curve with only four points because the fewer number of **editing handles** the smoother the curves of the shape will be.

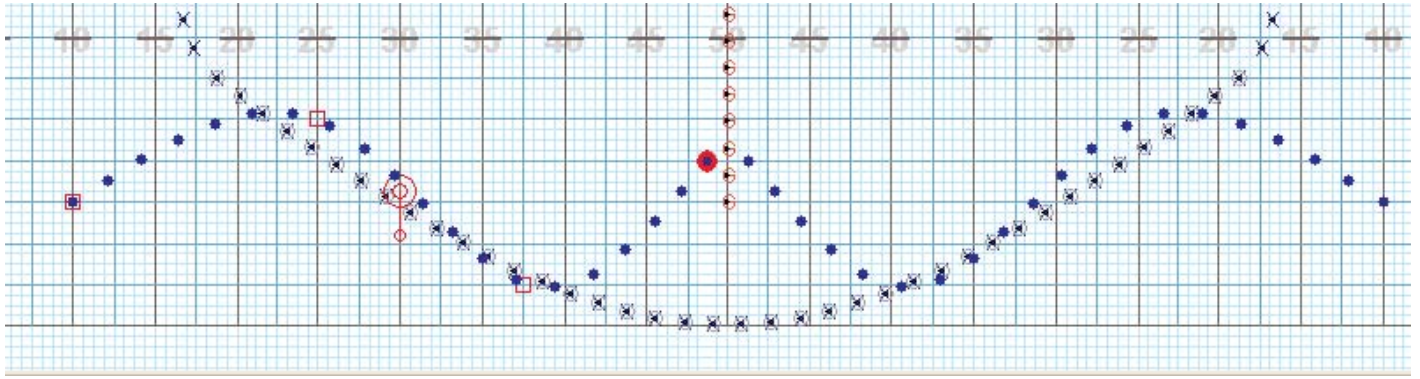
Enter in the **Clone** text box “1”. Two mirrored shapes of 20 positions will appear.



Matching Positions

Currently displayed are gray matching “crisscrossing” lines, connecting some of the performers of the preexisting arcs to the places in the newly designed curves. The matching lines indicate which performers in the preexisting arcs will move into the places in the new curved shapes. These gray matching lines display the current “matching order”. Crisscrossing paths typically aren’t a desired result, so we’ll need to change the pathways of these performers. We will enter a new matching order by rearranging the matching lines to connect or “move” the performers from their current positions in the arcs to their new places in the curves.

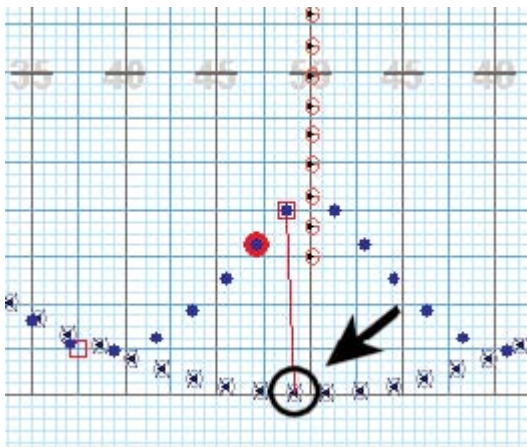
Click on the **Clear** button in the **Curve Tool Control Panel**. All of the gray matching lines will vanish, and a red bubble will appear on the endpoint of one of the new curves. The red bubble indicates the new place that we will be matching first.



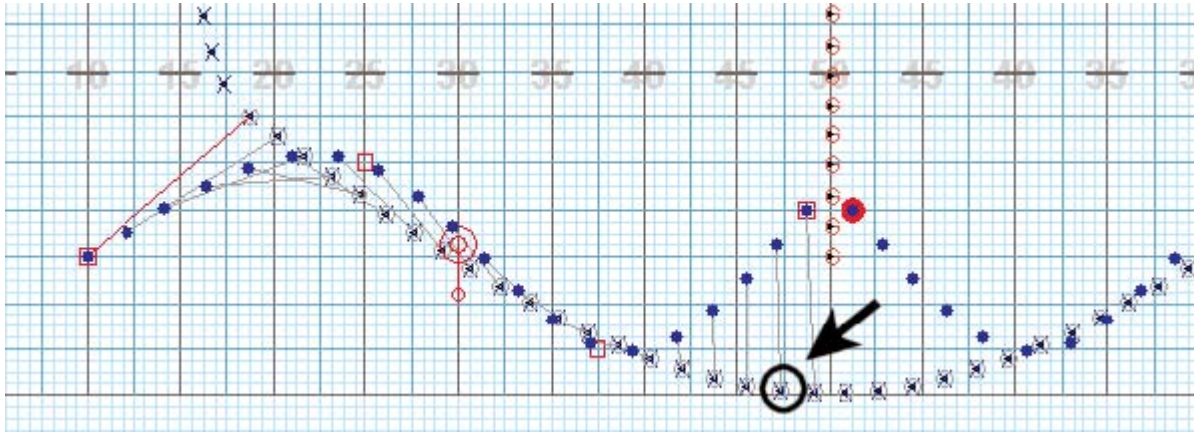
3D has a matching prediction function that will attempt to complete the matching order based on your first few matches. In the **Control Panel**, click the **Predict Next** option ON in order to enable this feature.

To get the matching prediction function started, you will need to make the first match. The new position inside the red bubble needs to be matched with one of the performers of the arc. To do that, click on the performer at the endpoint of the LEFT preexisting arc. This is the performers that we want to be moved into the new place highlighted by the red bubble.

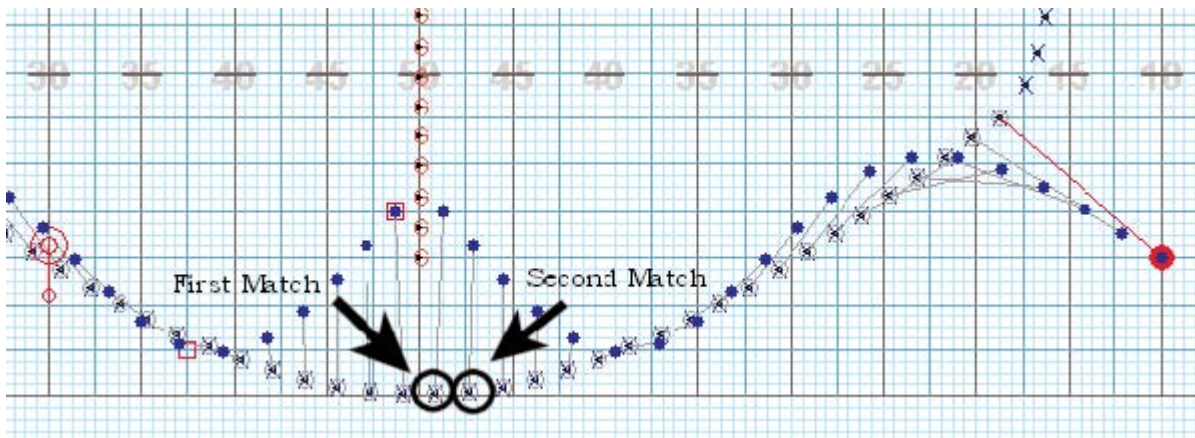
As shown here, the red bubble advances to the next place in the new curve after the first match was made.



Click on the next performer of the preexisting arc. Again, this will move the performer currently located in the arc to the new place in the curve highlighted by the red bubble. After this match, the **Predict Next** function will take over and attempt to correctly match the remaining positions of the first shape according to your initial matches as shown here.



Move to the opposite shape and repeat the same process.



Animate the drill if you want to preview your matching. Should you think you made mistakes and want to start over, click the **Clear** button and try this section again.

Click **Accept** to commit the curves to the drill.

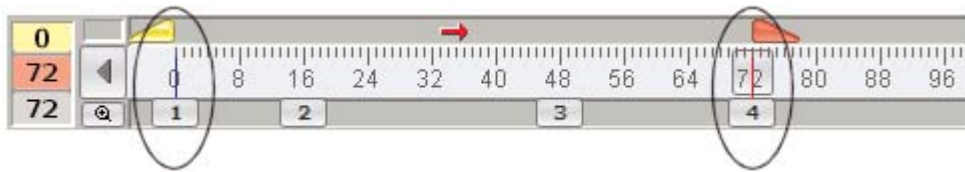
Save your work.

Reviewing Sets

Let's see what we have so far.

On the [Count Track](#), drag the **Yellow Anchor** back to count 0.

Make sure the **Red Anchor** is on count 72.

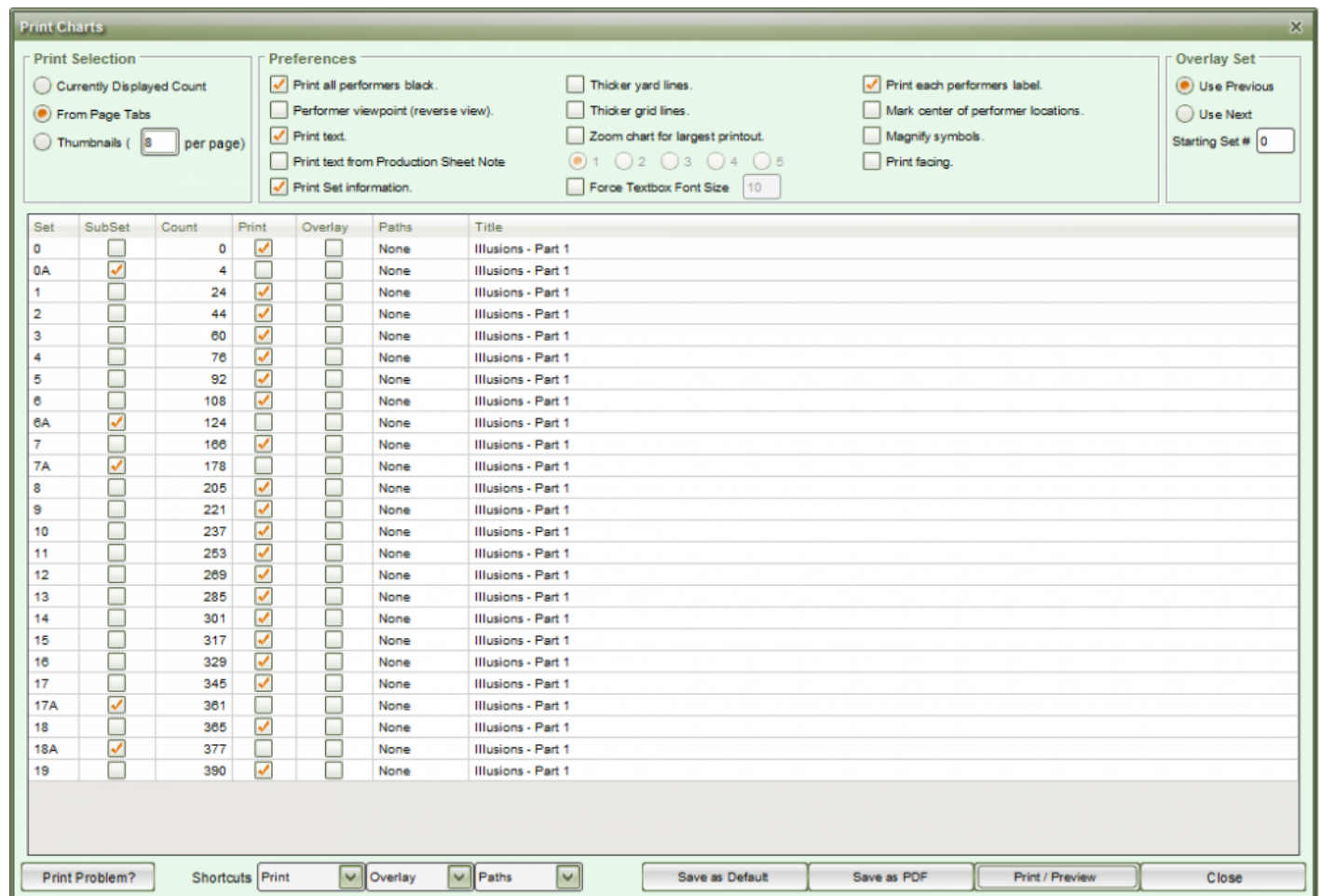


In the [Animation Controls](#), click on the **Play** Button.

Printing Your Drill

Since **Page Tabs** have already been inserted, it will be very simple to print desired pages.

From the **File** menu, choose **Print Charts**. A dialog box will appear allow you to configure the way in which your charts are to be printed.



In the **Print Selection** options, choose **From Page Tabs**.

In the **Overlay Set** options, choose **Use Previous**.

Click the **Print/Preview** button. A dialog box will appear allowing you to preview the printout and configure **Page Setup** options. The **Page Setup** dialog box can differ, depending on the printer you are using.

Click **Print** and your printer's dialog will appear. Click **OK** (or **Print**) will start your print job.

Finish

You have completed the Pyware 3D tutorial!

We've tried to show you many of the basic design elements of 3D to get you accustomed to our drill design application, however there is still much more! We encourage you to review the manual to get the most out of your design efforts.



If you have designed drills prior to completing the demo, we recommend charting those drills in 3D. You'll be able to pick up 3D's functionality quicker as you already know how the drill is supposed to progress. This allows you to focus more on program use as opposed to design.

Menu Bar

The following topics cover everything you will find in 3D's menu bar.

Click on the arrow next to **Menu Bar** in the Table of Contents to the left to expand this section and begin.

File Menu

The File menu contains standard File menu options; options for creating [new drills](#) or [opening existing ones](#), [saving](#), and [printing](#). You'll also find options for both the drill you're working on ([Document Options](#)), or options that apply to the entire program ([Application Options](#)).

File: New Drill

3D Data File Types

3D has three types of data files:

- 3D Drill file, the original data file in Pyware 3D.
- 3D Drill Package file which is a combination of a 3D Drill file and its external files. External files consist of audio files, prop images, floor covers, fabrics, surfaces and grounds.
- 3D Production files which are a collection of 3D Drill Packages. When Drill Packages are combined, they make an entire show (production).

New Drill

New Drill is used to create a new drill file or continue an existing drill from another file. Selecting **New Drill** from the **File** menu will display the **New Drill File** dialog.

New 3D Drill File

Drill Title:

Maximum Counts: Only one musical number per drill is recommended.

Field/Stage Grid Layout:

Real View Venue:

Real View Sky:

Real View Ground:

Real View Surface:

This drill file is:

☒ a new drill. It is not continued from a previous file.

☐ a continuation of the drill from the selected file:

☒ Continue from the last count of drill in the selected file.

☐ Continue from count of the selected file.

Drill Title is the title of the drill as it appears on printouts and in productions.

Field/Stage Grid Layout is the type of grid that is used for the design and performance surface. Clicking **Browse** will display the list of available fields. You can create your own grid layouts from the **Grid Designer** found in the **Utilities** menu.

Maximum Counts is the number of counts in the new drill file.

Real View Venue will add an environment setting, such as a stadium, gymnasium, or parade route to the [Real View](#) window.

Real View Sky option has various skies to choose from to enhance the [Real View](#) scenery.

Real View Ground will replace the ground surface and surrounding field areas with whichever option you choose. When loading a Ground, we recommend choosing a surface file as well, such as a High School Football Field.

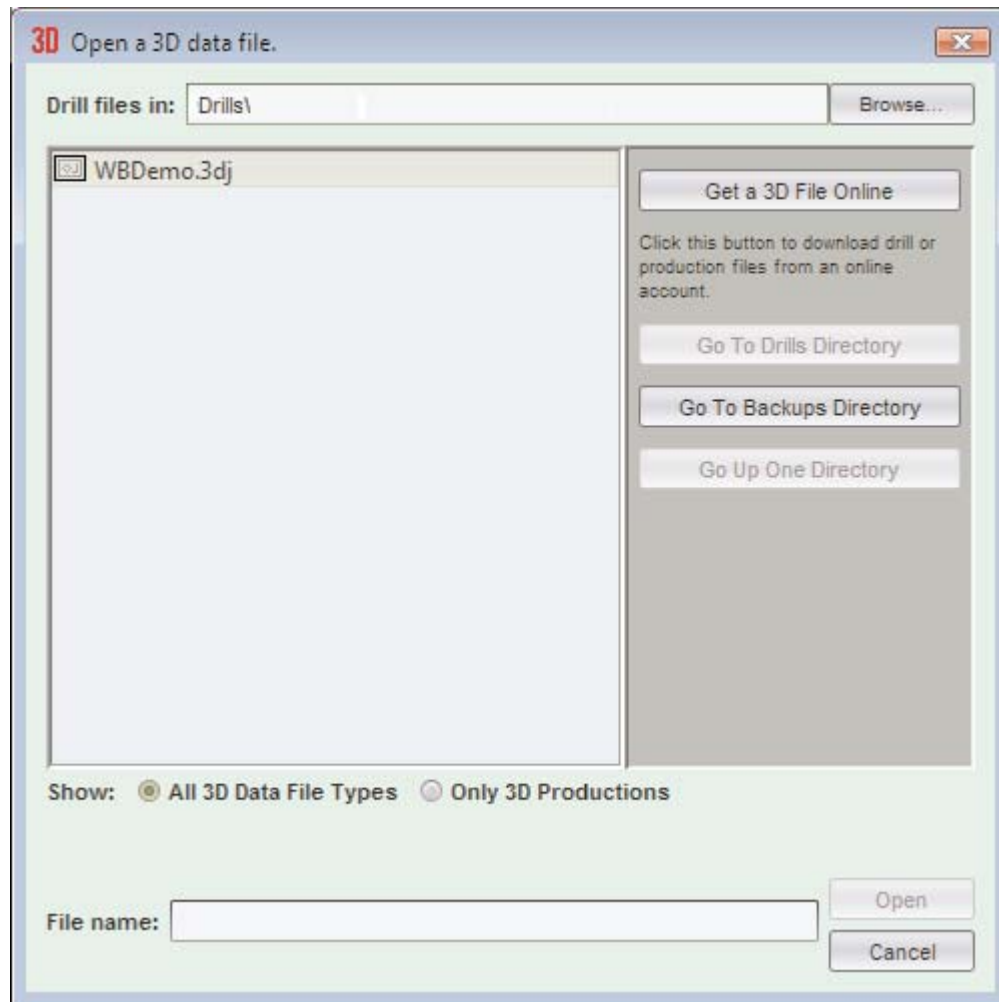
Real View Surface allows you to import a performance surface to overlay on the field. This aids with customization of the performance surface, as you could use images that represent tarps, football fields, basketball courts, etc.



We recommend that you create separate files of major segments of the show or each musical selection. This will make writing and teaching the drill much more manageable. 3D will allow you to copy the last set of one drill in a file and paste it to a new file as the first set.

File: Open Drill

Open is used to open a file located on a storage device such as your hard drive. Selecting **Open** from the **File** menu will display the **Open a Drill File** dialog.



“**Drill files in**” shows the directory on the storage device that is displayed in the file list. **Browse** allows you to choose a different directory to look in.

The drill file list contains drill files, drill packages and folders. Clicking on any of them and clicking **Open** will open the selection in the list.

The **Get a 3D File Online** button will open the **Online File Manager** where you can select a file to download from a 3D online account. The **Online File Manager** is covered in detail in the **Interactive** menu. *(This features is available in Interactive and Professional editions only)*

Go to Drills Directory will show the list of drill files in the default drill files directory.

Go to Backups Directory will show the list of drill files in the default backup drill files directory. The location of the backup drill files directory can be changed from the [Application Options: Backups](#) tab of the **File** menu.

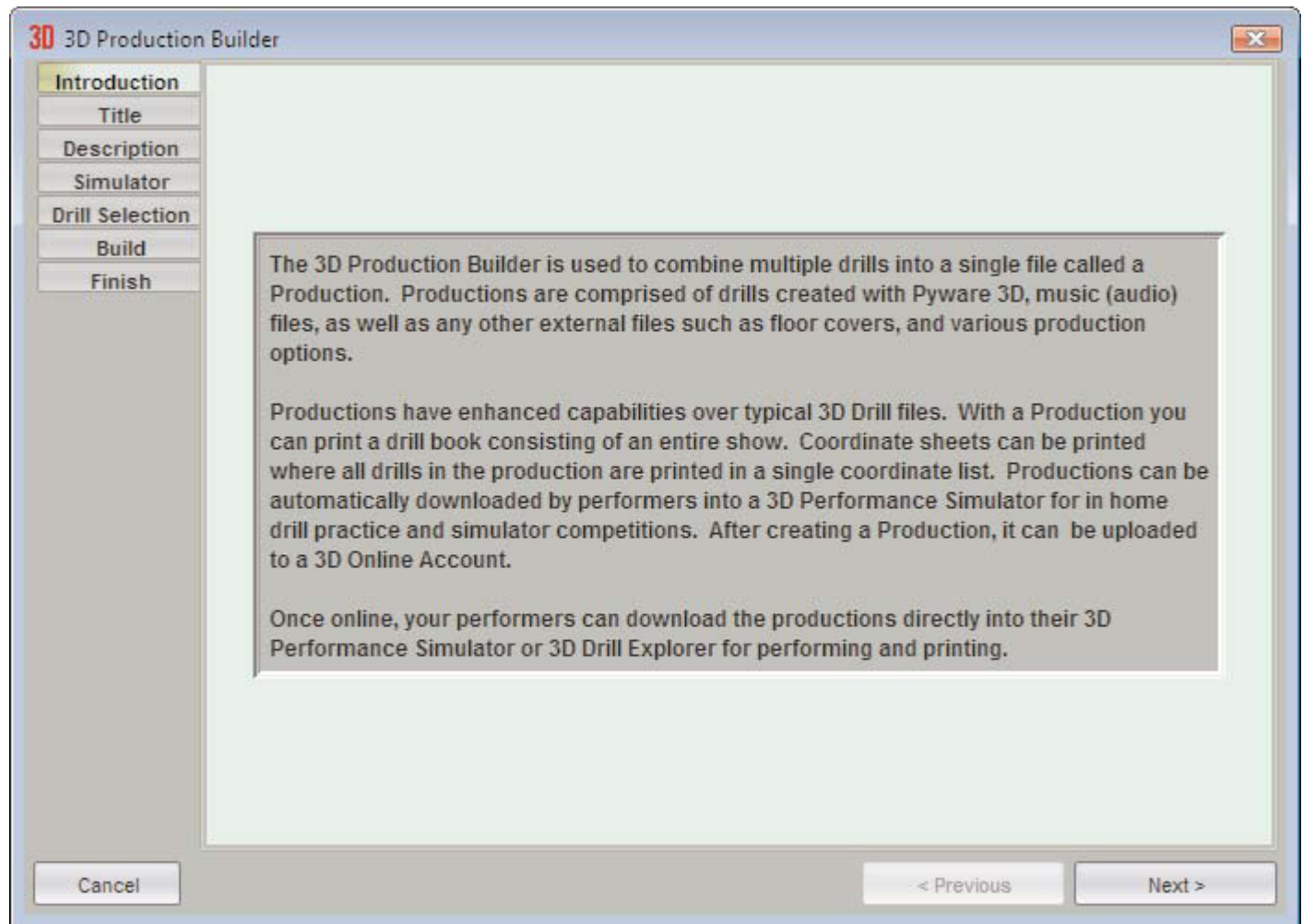
Go Up One Directory will move up one directory from any sub-folders found in the directory you are currently viewing.

File: New Production

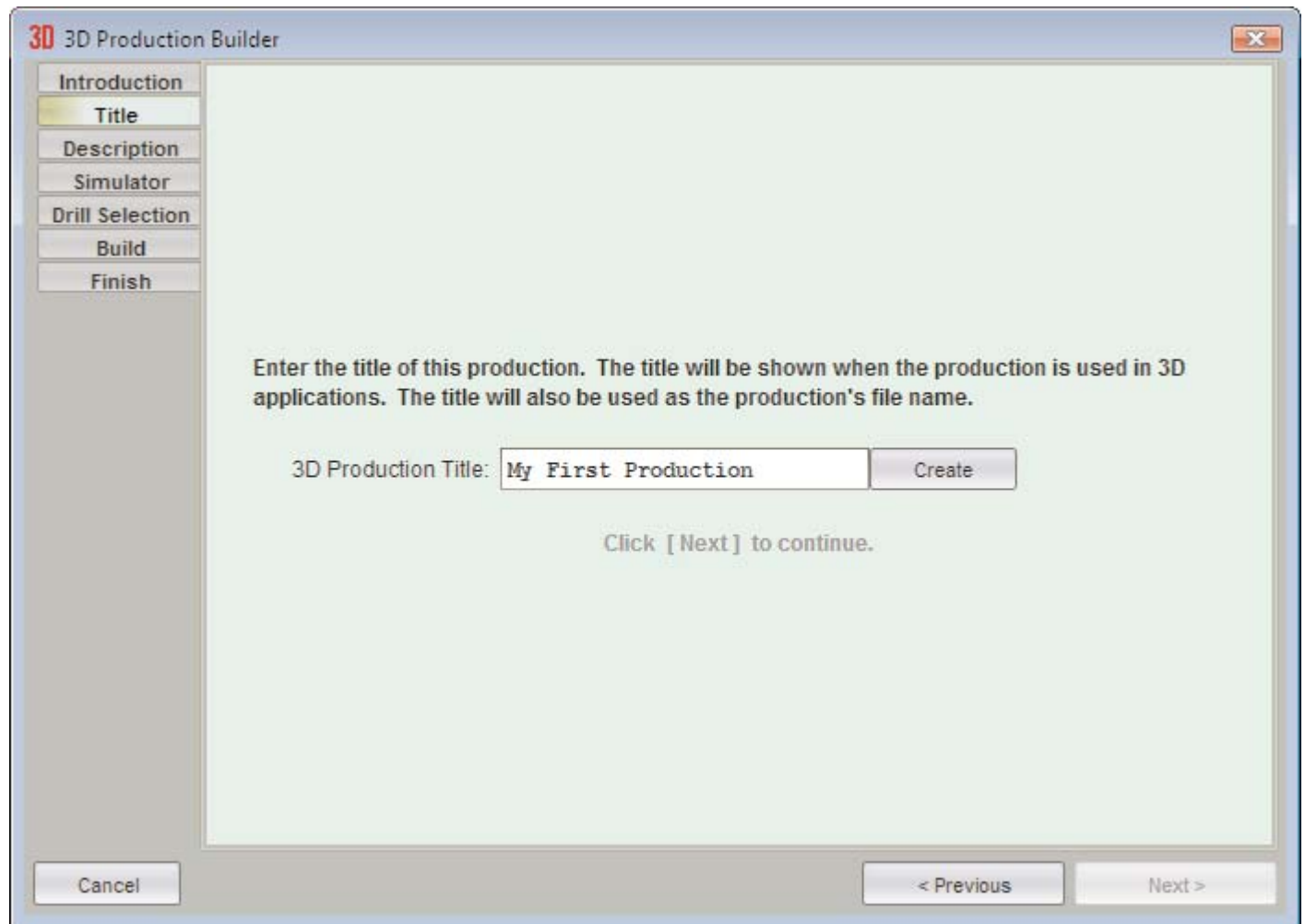
Since a production is essentially a collection of drills that when combined make a whole show, you must have at least one saved drill available to put into your new production before you can create the production. When a drill is added to a production it is moved from the “Drills” folder into the production file. *You will no longer find your drill in the “Drills” folder.* You will, however, find your drill when you open the production.

A production will appear in the **Open Drills** dialog just like a drill or drill package. When you open the production you will see the list of drills in the production in the **Open Drill** dialog. The production behaves similarly to a sub-folder in the “Drills” folder.

Select **New Production** from the **File** menu and the following dialog will display. Click **Next** to continue to the next step.



Enter the title of the production. The production title will be used as the file name of the production's main title. After entering the production title, click **Create** and then click **Next** to continue to the next step. If there is a production with the same title in your **Drills** folder you will be asked to choose another.



The screenshot shows the '3D Production Builder' window. On the left is a vertical sidebar with buttons: 'Introduction', 'Title' (highlighted), 'Description', 'Simulator', 'Drill Selection', 'Build', and 'Finish'. The main area has a light green background. It contains the following text: 'Enter the title of this production. The title will be shown when the production is used in 3D applications. The title will also be used as the production's file name.' Below this is a text input field labeled '3D Production Title:' containing the text 'My First Production', followed by a 'Create' button. At the bottom of the main area is the text 'Click [Next] to continue.' At the bottom of the window are three buttons: 'Cancel', '< Previous', and 'Next >'.

Enter the description of the production that will appear on cover sheets. Click **Next** to continue.

The screenshot shows a software window titled "3D Production Builder". On the left is a vertical sidebar with buttons for "Introduction", "Title", "Description" (which is highlighted), "Simulator", "Drill Selection", "Build", and "Finish". The main area of the window has a light green background and contains the following text: "Enter a short four line description of this production. The description will appear in applications such as a 3D Performance Simulator when the production is selected." Below this is the heading "3D Production Description" and a text input box containing the text "My First Production" and "Performed by Pygraphics High School Band". At the bottom of the window are three buttons: "Cancel" on the left, and "< Previous" and "Next >" on the right.

The 3D production file is a very powerful file. 3D Productions can be sent online (using a 3D Online Account) for performers (students) who can in turn download directly into their **3D Performer's Practice Tools** program where they can use the Production file to do the following:

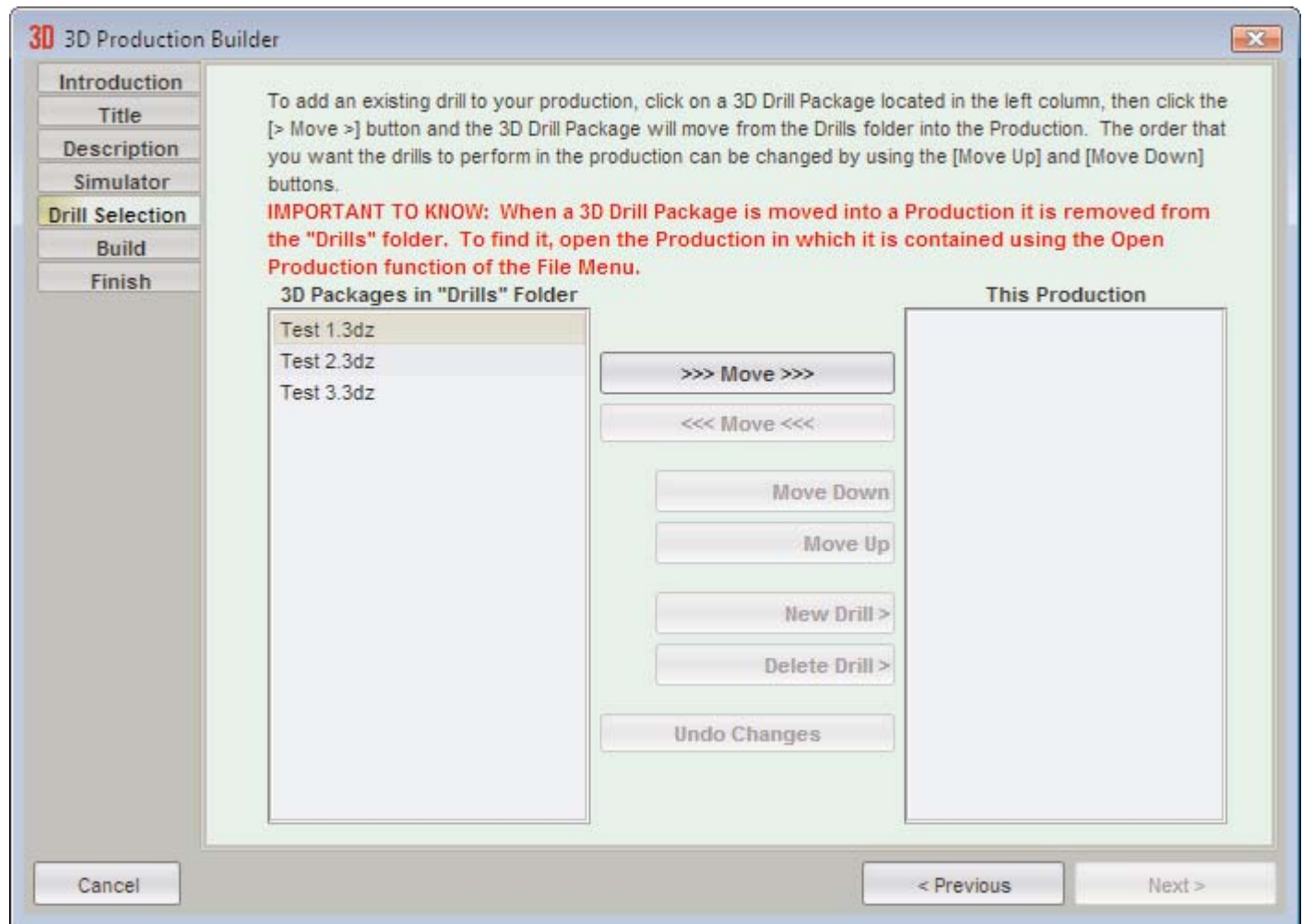
- Productions can be opened in the **3D Performance Simulator** where performers can practice their drills for scores.
- Production drill books can be printed that include all of the drills in a production in a single book.
- Production coordinates can be printed that include all of the drills in a production in a single list.



Setting **Enable Print Functions** will control whether or not a production can be printed from within the Performer's Practice Tools program. Occasionally, if a designer has uploaded a production for preview only, they do not want the performers to be able to print. Drills can also be individually locked from printing and editing. If a drill has been locked it will not be able to print even if the **Enable Print Functions** is selected.

Setting **Enable Leader Board Functions** will control whether or not a production will have leader boards. Some designers or directors) may choose to disable the ***Leader Board** functions.

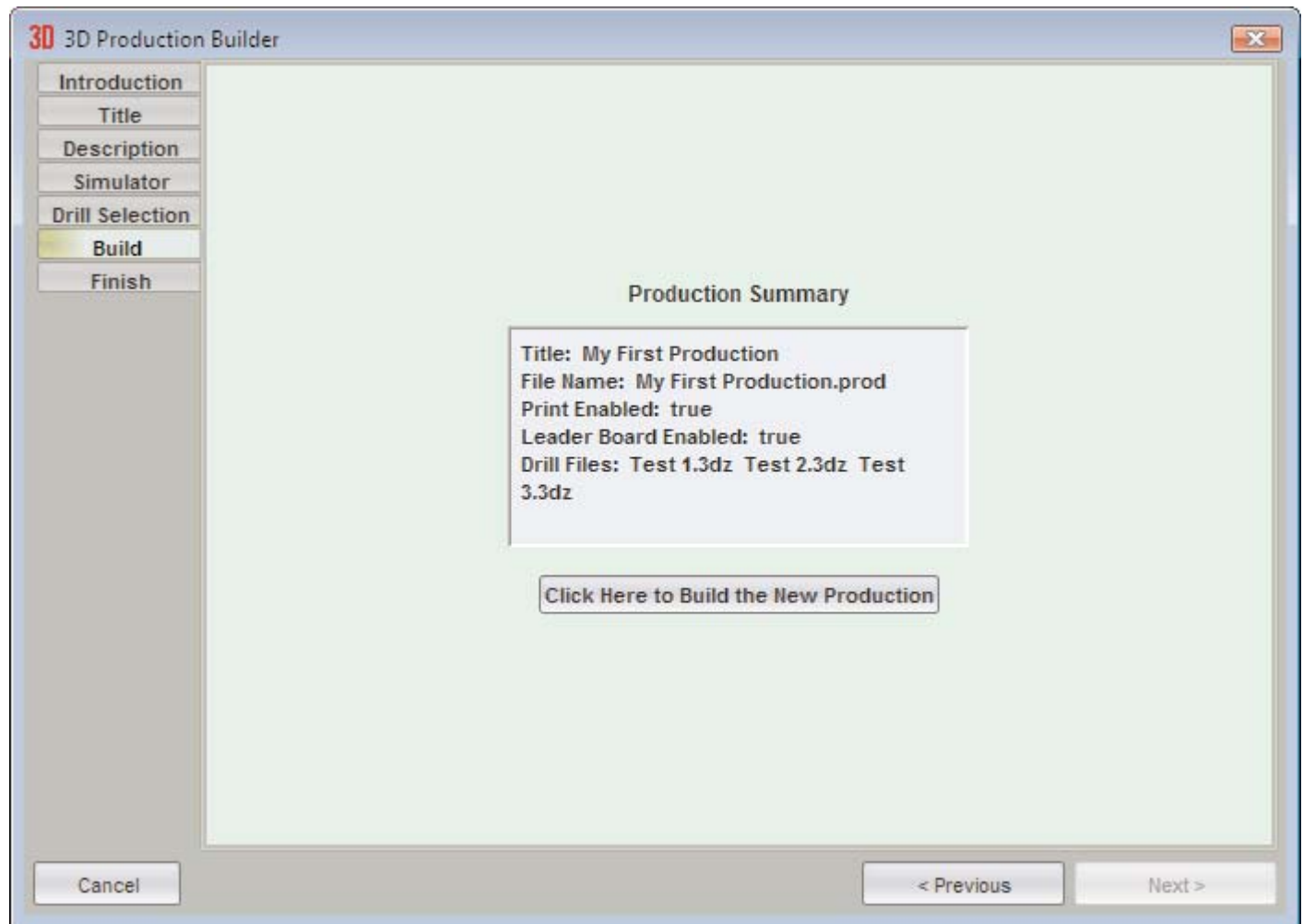
Choose which drill files you want included in your production. The drill files must have been saved as **Drill Packages** and they must have any audio files included. To move a drill into the production click on the drill, and then click the move (right) button. To move a drill out of a production, click on it in the production list, and then click move (left).



You can also rearrange the order the drills will appear in the production by clicking on a drill in the production list and clicking move up or down.

Remember, when you move a drill into a production you will no longer find it loose in the drills folder. You will find it by opening the production then opening a drill within the production. The production is like a sub-folder in the "Drills" folder.

The summary will display showing the production setup. Click **Build Production** and you are done. Now if you want performers to download the production, you must first upload it to your 3D account. Use the **Online File Manager** from the **Interactive** menu to do that.



File: Open Production

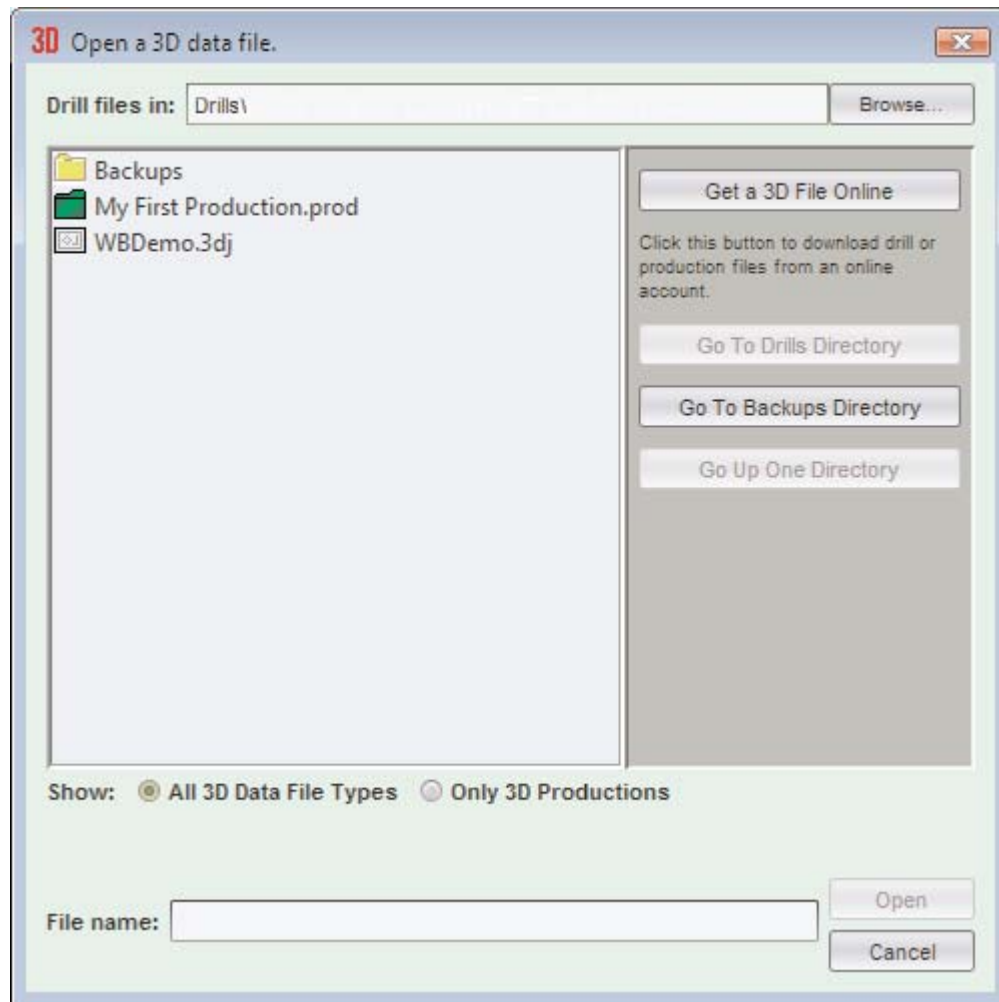
Productions are collections of drills combined into one file to make a production. When you select **Open Production** you will see the list of drills within the production to open.

Select **Open Production** from the **File** menu.

You will see in the **Open** dialog the list of productions. Click on a production you want to open and click **Open**.

The list of drills found in the production will display. Click on the drill within the production you want to open and click **Open**.

When a production is opened you can only work with drills in that production. To work with other drills not in the production you will need to first close the production by using **Close Production** from the **File** menu.



File: Add/Remove Drills In Production

When a production is opened you can change which files are in the production with this function. You can also create a new drill or create a continuation drill of an existing drill in the production. This is handy when you have finished one drill and want to move on to the next.

File: Production Options

Production Options consist of the production description, **Performer's Practice Tools** settings, and the list of drills that are in the production. **Production Options** will be available only if you have a production currently opened. (see [Open Production](#) or [New Production](#)). The **Production Options** are the same as the options that you set when you create a **New Production** (see [New Production](#) for details).

File: Close Production

When productions are opened, you can only work with drills that are in that production. When you are ready to work with a drill that is not in the production you will need to close the currently opened production first. To close a production, select **Close Production** from the **File** menu.

File: Save / Save As

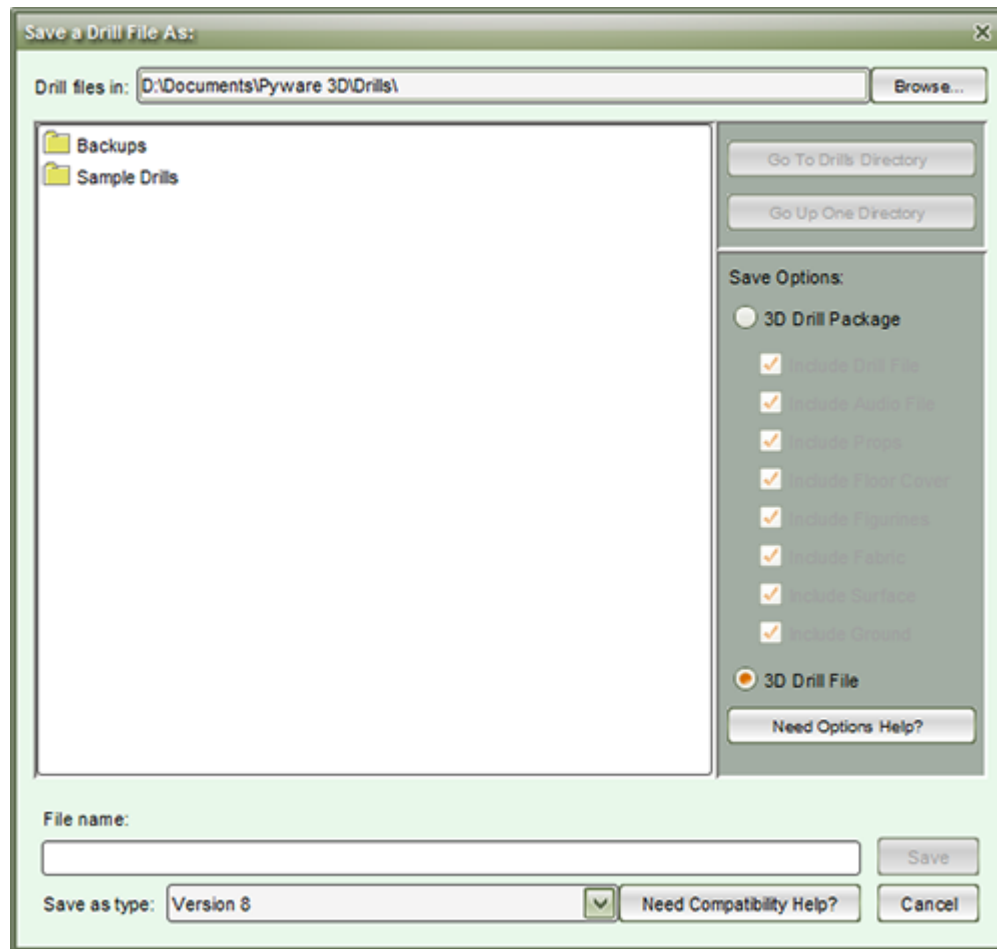
Save

Selecting **Save** from the **File** menu will save your recent changes to the file. If a file has not been saved before, a **Save As** dialog will display for you to name the file on the storage device (typically the hard disk).

Save As

You can also choose **Save As** for a file that has already been saved. This will allow you to save another copy of the drill file with a new name. This is a great way to keep copies of earlier versions of a file should you choose to go back for some reason. To keep your file versions straight we recommend you rename the file by adding a number to the end of the name such as: opener01, opener02, opener03...

This is the dialog that appears for **Save As**:



Drill files in shows the directory on the storage device that is displaying in the file list. **Browse** will change the directory shown in the list.

The drill file list contains drill files, drill packages and folders. Clicking on any of them and clicking **Save** will save the file to the location in the list.

The **Go To Drills Directory** will show the list of drill files in the default drill files directory.

Go Up One Directory will move up one directory from any sub-folder of the currently viewed directory.

Save Options

The **Save Options** contain options available for the type of file that is being saved.

3D Interactive Package is a package that contains not only the standard 3D Drill file but also contains any external files such as audio, fabrics, props, and floor covers used within the drill file. All external files are optional.

3D Drill File is a standard drill file that includes no external files, only drill data.

Save as type (*Interactive and Professional editions only*): Unless otherwise specified, drill files will save with your current version compatibility. Any user with any edition of your same version will be able to open these files (example: version users can open your version 8 files). To share a file with a user that has an older version of 3D, select the compatibility option appropriate for them. Newer features will not be saved with this compatibility.

All **Basic Edition** files are saved as that version file type.

Auto-Save

See the Backups section of [Application Options](#) for Auto-Save options.

File: Save As Template

Save As template will save a drill file as template file. Template files are helpful for those of you that frequently design with grids and layouts setup in a particular way. The **Include Performers** option will save any performers on the field, when selected.



Before editing a template you open, be sure to immediately save the template as a different name so you will not overwrite your template file.

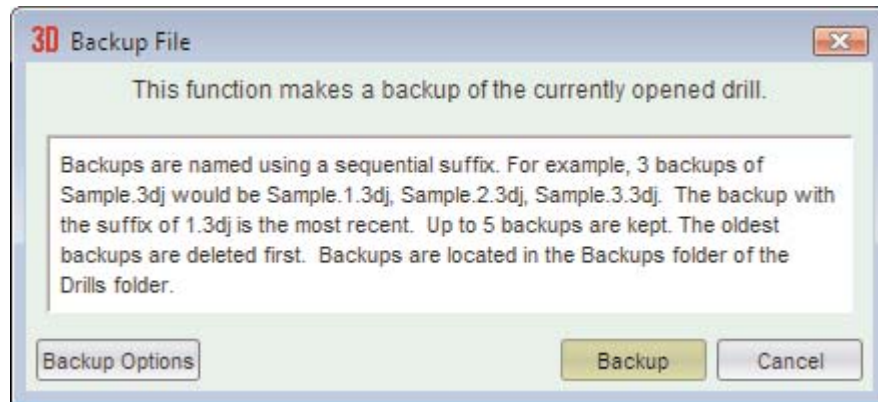
File: Save As 3D App File

The **Save As 3D App File** option in the file menu will save a copy of the currently open drill as a .3da file type. These .3da file types, also known as mobile app files, can be viewed in the 3D Viewer application.

To save a mobile app file, first [open the drill](#) from the [File](#) menu. Once the drill is open, go to the **File** menu and choose **Save As 3D App File**. A new window will open where you can give the file a name, and specify which directory you would like to save the file to. Once you have decided on a destination and file name, press **Save**.

File: Backup

This function is used to backup the currently opened drill file. The backup is saved in the default backup files directory. Selecting **Backup** from the File menu will display:



Backup Options opens the **Application Options** dialog to the **Backup** tab where you can change the default backup directory as well as other backup options. See [Application Options](#) for details.

File: Revert to Saved

The **Revert to Saved** will roll back your file to the last saved copy of your file. Any changes you had made since the last save would not be kept.

File: Print...

Opens the Unified Print window, where you can set preferences and print any or all of 3D's available outputs.

See the [Printing](#) section for detailed explanations of this window.

File: Document Options

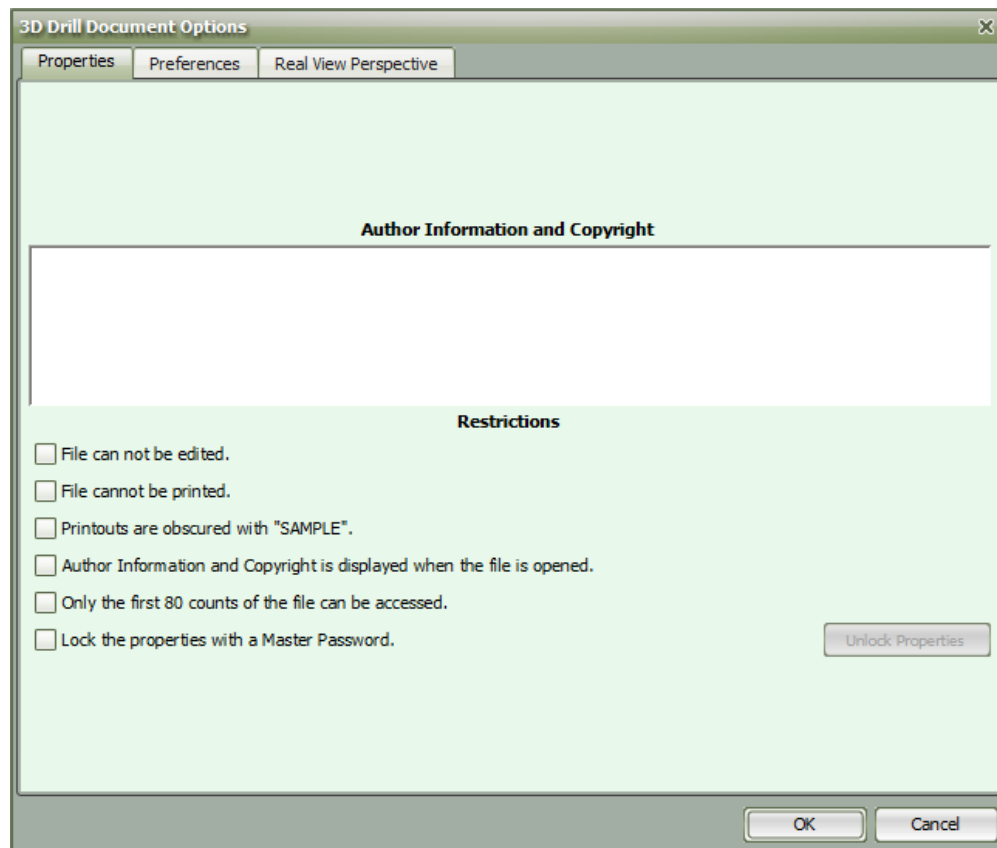
Document Options contains many features to change the properties and preferences of a particular file. For example, you can change a file's symbol fonts, file locking properties, copyright information, and drill title. To display the **Document Options**, select **Document Options** from the **File** menu.

Properties

The **Properties** tab contains settings that are the file characteristics which define the use of a file you are creating. There is a section for typing your **Author Information and Copyright**. You can set the file up to not allow editing, if for example, you wanted the file strictly to be used as a demo.

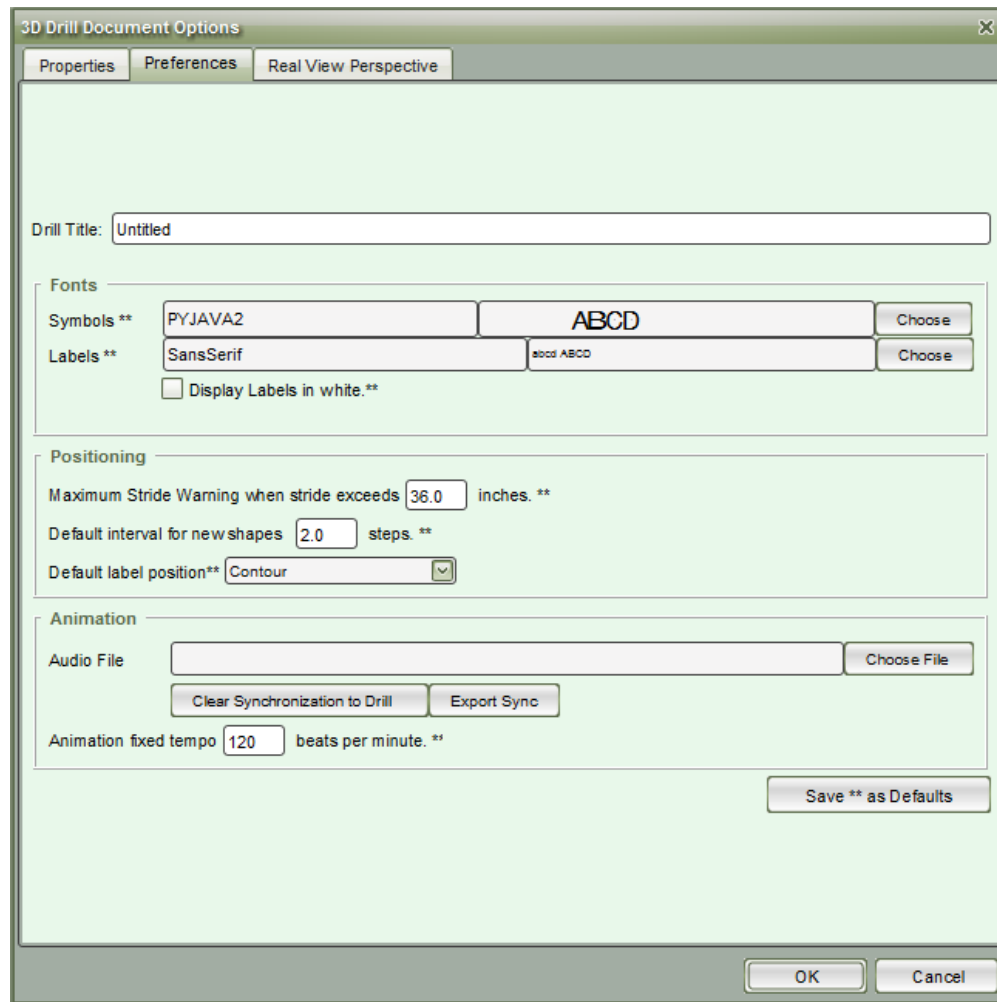
The properties can be changed and then locked with a Master password. This is useful if you would like to distribute your drill file but make it operate as a demo. Its value is most seen on the internet.

You can create a drill file, put a company name and contact number in the file that displays when the file is opened, restrict its use for only previewing, and post it on your web site for sale or upload the file to your Pyware account. Anyone can download your file for preview. Should they want to purchase your drill, you can unlock their copy of the file for use by giving the customer a key that only works one time.



Preferences

Preferences contains settings that define the characteristics of the file you are working on.



Drill Title is the title that is used when printing. If this title is left blank then printouts will use the name the file was saved as.

Symbol Font is the font used to represent the performers on the field.

Label Font is the font used to label (or number) the performers on the field.

Default Label Position is the location of a label that appears next to a performer symbol on new formations.

Default Interval is the interval first entered into a drawing tool control panel to determine the spacing between performers in a shape. This is just the initial value and can be changed while using a drawing tool. Its default is 2 steps. You may want to change this value if you find you consistently use an interval other than 2.

Audio File is the music file that contains music you wish played during animation of the drill.



While not required, entering music before writing the drill provides an excellent musical reference during the creative process.

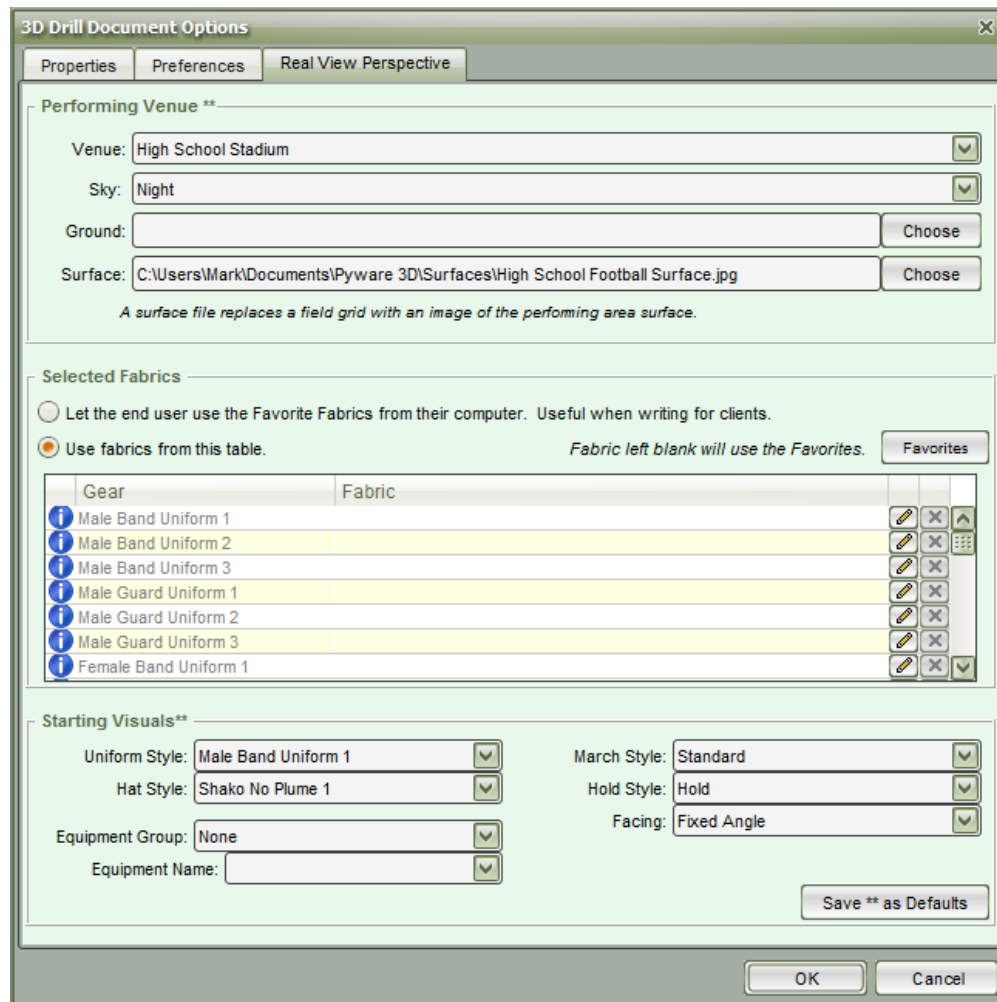
A drill file can be synchronized to one of three types of sound files: (MID=MIDI, WAV=wave audio file, OGG=Ogg/Vorbis audio file). To set up an audio file for use with a drill file, do the following:

1. With a drill file opened, select the **Preferences** section of **Document Options** of the **File** menu.
2. Click **Choose File** for the audio file and select an audio file.
3. The next time you click ON the animate with music button, you will be instructed to synchronize the music to the drill.

Animation Fixed Tempo is used to set the speed of the animation that is played with no music.

Real View Perspective

The **Real View Perspective** tab contains options for settings used in the [Real View](#) window, such as uniform fabrics, flag fabrics, performance surfaces and venues, and any starting visuals.



The dialog box is titled "3D Drill Document Options" and has three tabs: "Properties", "Preferences", and "Real View Perspective". The "Real View Perspective" tab is selected.

Performing Venue **

Venue: High School Stadium (dropdown menu)

Sky: Night (dropdown menu)

Ground: (text field) Choose (button)

Surface: C:\Users\Mark\Documents\Pyware 3D\Surfaces\High School Football Surface.jpg (text field) Choose (button)

A surface file replaces a field grid with an image of the performing area surface.

Selected Fabrics

☐ Let the end user use the Favorite Fabrics from their computer. Useful when writing for clients.

☒ Use fabrics from this table. *Fabric left blank will use the Favorites.* Favorites (button)

Gear	Fabric			
Male Band Uniform 1				
Male Band Uniform 2				
Male Band Uniform 3				
Male Guard Uniform 1				
Male Guard Uniform 2				
Male Guard Uniform 3				
Female Band Uniform 1				

Starting Visuals**

Uniform Style: Male Band Uniform 1 (dropdown menu)

Hat Style: Shako No Plume 1 (dropdown menu)

Equipment Group: None (dropdown menu)

Equipment Name: (text field)

March Style: Standard (dropdown menu)

Hold Style: Hold (dropdown menu)

Facing: Fixed Angle (dropdown menu)

Save ** as Defaults (button)

OK (button) Cancel (button)

The Performing Venue section is where you would import performance surfaces and set venues, such as stadiums, to display in the Real View.

Venues will add an environment setting, such as a stadium, gymnasium, or parade route to the Real View window.

The **Sky** option has various skies to choose from to enhance the Real View scenery.

The **Ground** option will replace the ground surface and surrounding field areas with whichever option you choose. When loading a ground, we recommend choosing a surface file as well, such as a High School Football Field.

Surface allows you to import a performance surface to overlay on the field. This aids with customization of the performance surface, as you could use images that represents tarps, football fields, basketball courts, etc.

The **Selected Fabrics** section is where you edit which fabrics are used for a specific drill. There are two options in this section, to let the end user (such as your client) use their own fabrics from their machine, or to use the fabrics from the table below.

Allowing the user to select fabrics from their machine is an absolute time saver. If the user has favorite fabrics set in their 3D program, these will be used for any drill they open, as opposed to having to sort through a list and choose which fabrics to use for their drills.

Opting to use the fabrics from the table will save any selected fabrics in the table and include them in a drill package (.3dz). Fabrics will not be included in a standard (.3dj) drill file.

If you have a custom fabric (such as a uniform, flag silk, or drum shells) that you would like to use in the drill, you can import the fabric by selecting the **Edit** button for the respective fabric you would like to change. A new window will open where you can browse your machine for the fabric to use.

To clear a used fabric, press the **Delete** button for the fabric you would like to remove. This will not delete the fabric; it will only be removed for use in this drill.

Any fabrics left blank will use the Favorite Fabrics specified in the Application Options of 3D. Click the **Favorites** button to open the Favorite Fabrics tab in Application Options.

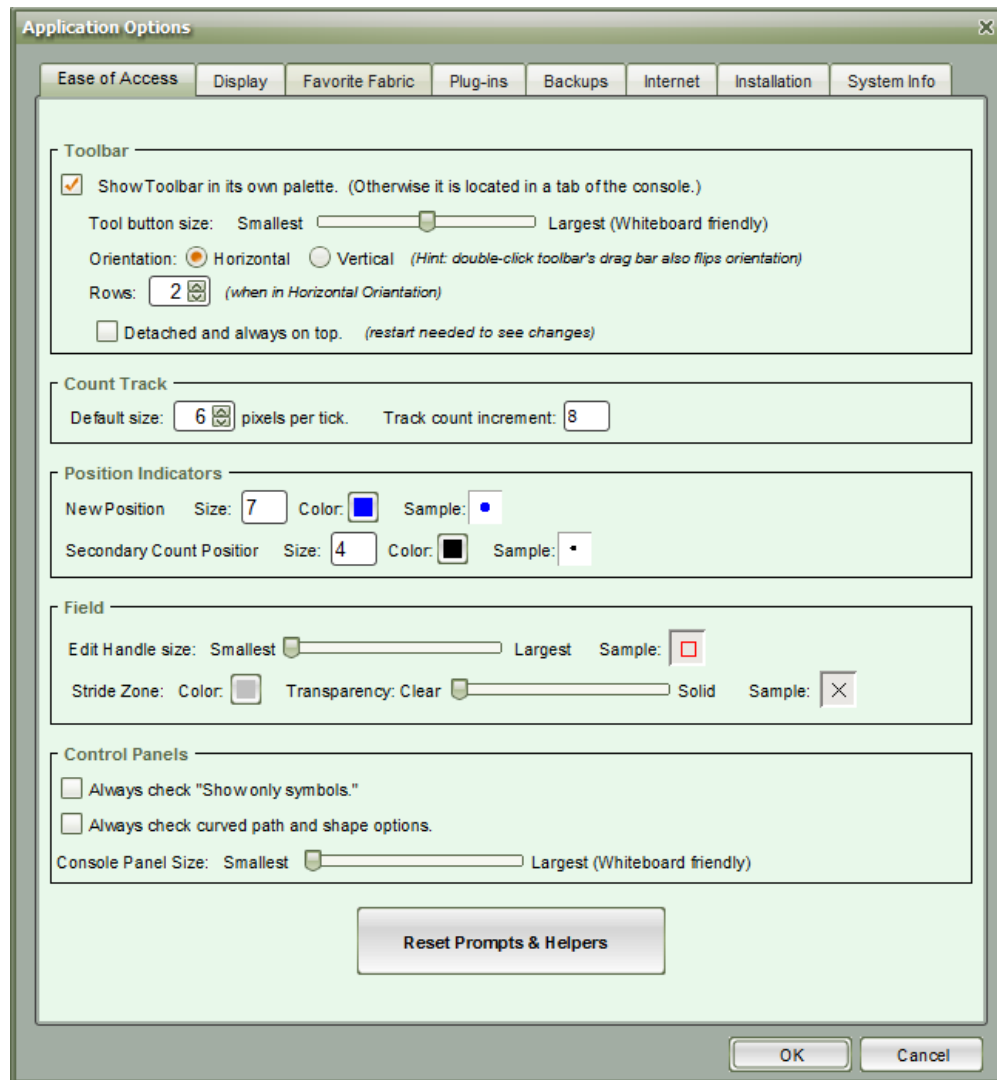
The Starting Visuals section allows you to change default uniforms, equipment carried, march & hold style, as well as facing when working on new drills. These values will be used until performers are edited using the Visuals Editor.

File: Application Options

Application Options is used to change the preferences of the 3D application. These include, but are not limited to: secondary and new symbol display size/color, count track settings, tool palette setup, and installation information.

Ease of Access

Ease of Access allows users to customize options in 3D that would make the program more accessible for various size of monitors and displays.



Toolbar – select the checkbox to show the toolbar in its own palette. If this is not selected, then the toolbar will be a tab on the console.

Tool Button Size adjusts button size on the tool palette. We recommend moving the slide bar to “largest” for Whiteboard and touch screen monitor use.

Orientation – choosing the “horizontal” or “vertical” radio buttons will switch the direction that the Toolbar is displayed. You can change the number of rows the toolbar has by adjusting the “rows” number.

Count Track – changes the “count increments” of the count track. Typically showing a number every 8 counts is preferred.

Position Indicators allow you to adjust size and color of both new and secondary count positions. At low screen resolutions the secondary dots will be larger on the screen, so you may want to draw the smaller

symbols than the default settings. If you are new to 3D, this setting can be changed anytime. Its usefulness will become easier to understand after using the program.

Adjust the size of **Edit Handles** by moving the slide bar.

Select the color box to change the color of the **Stride Zone**, or adjust the slide bar to change transparency.

Always check “Show Only Symbols” will always display the symbols when in a tool control panel.

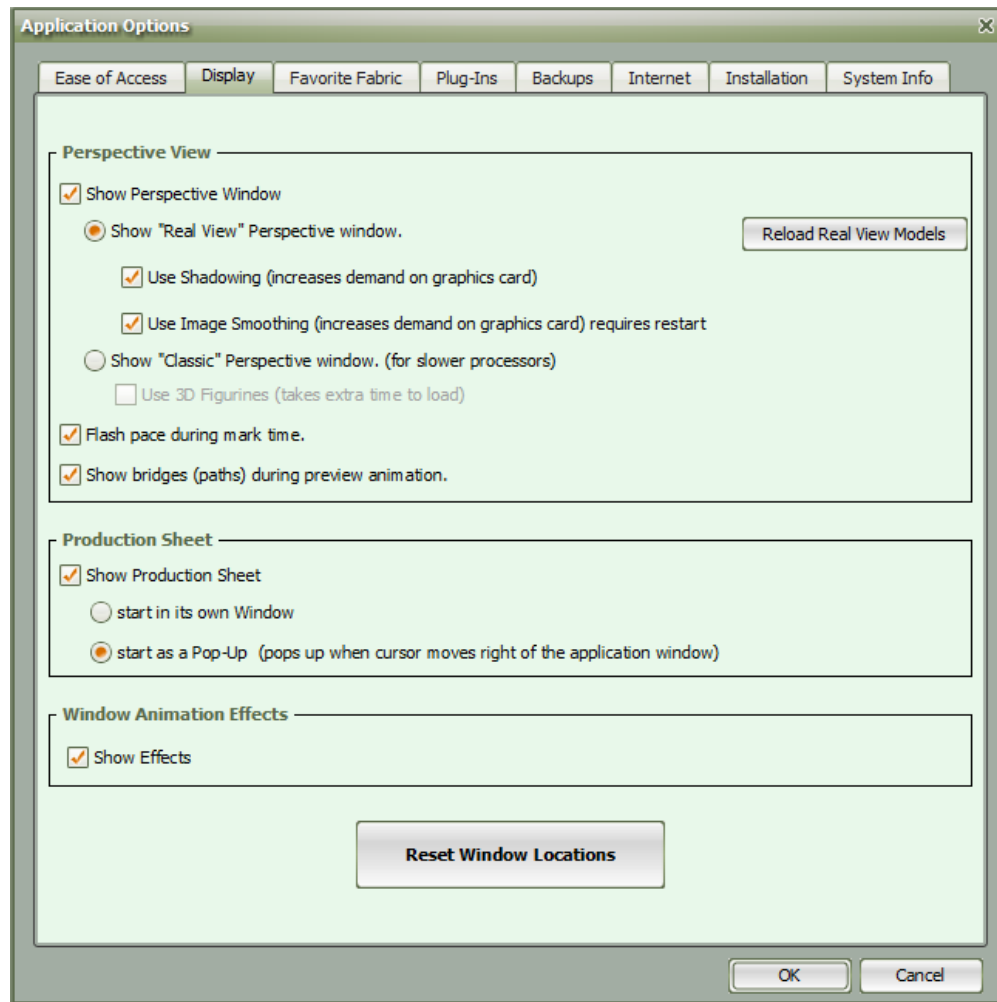
Always check curved path and shape options will always create a curved path or shape, if the form allows it.

Console Panel Size adjusts the size of the console window.

Reset Prompts & Helpers – Some prompts will appear during the use of the program for the purpose of providing extra guidance. These prompts could pop up in tools, functions, and options throughout the program. The prompts will only appear once if the user clicks “Don’t display this again”. **Reset Prompts & Helpers** will reset the “Don’t display this again” check box on all of these prompts.

Display

The **Display** tab contains options pertaining to the appearance of items and windows.



Show Perspective Window – shows or hides the perspective window. This is useful on slower computers or computers that are close to or below the hardware requirement threshold. Unchecking “Show Perspective View” will make 3D run faster and with less memory and graphics demand.

Show “Real View” Perspective Window – enables the Real View window.

Reload Real View Models will download the current set of models and optional assets available from Pygraphics, Inc.

Use Shadowing displays shadows in the Real View window for any models or props. While this adds realism, it can increase demand on your graphics card. Disabling this function may improve sluggish performance.

Use Image Smoothing (or multi-sampling), simply put, smoothes pixels on images where they might look jagged from pixels not representing lines and curves perfectly. This is one of the more demanding (in terms

of graphics power) features of our software. If you notice sluggish performance in the Real View window, try disabling this feature. Disabling Image Smoothing requires a restart of the program to take effect.

Show Classic Perspective is an option available for machines that do not meet the graphics requirements of the 3D Real View.

Use 3D Figurines shows figures with uniforms defined through the Figurine Editor.

Flash Pace during mark time – when this is enabled, performers that are “marking time” will flash yellow during animation. To disable this flash, uncheck this option.

Show bridges (paths) during preview animation – switches on or off the matching bridges to help provide a cleaner animation while drawing new forms.

Show Production Sheet – enables the **Production Sheet** to be displayed in 3D. This is only available on 3D Interactive and Professional editions.

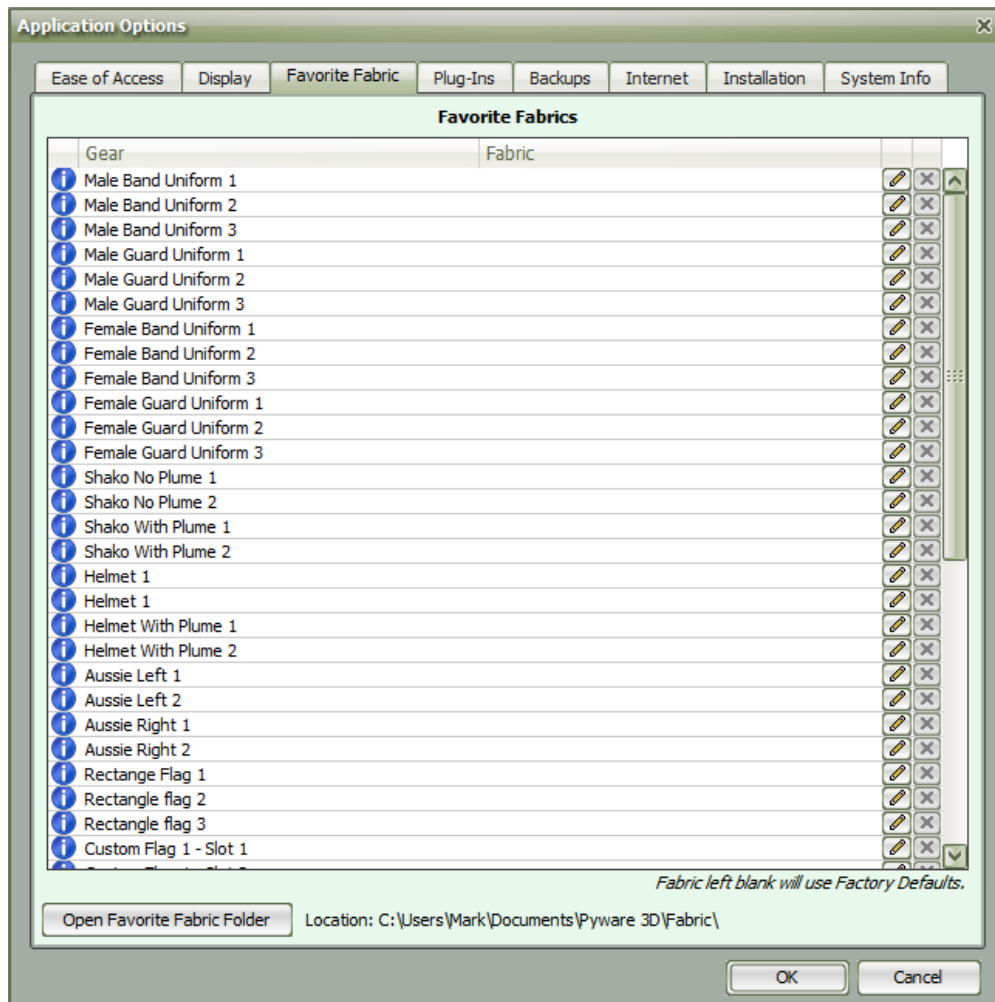
Window Animation Effects will turn on or off the animation effects of windows in 3D.

Reset Window Locations – resets the location of windows and tool palettes to their default location on the screen.

Favorite Fabric

The **Favorite Fabric** tab lists all fabrics to be used on the performer and equipment models in the 3D Real View. Fabrics in 3D include, but aren't limited to: model skin tone, uniforms, equipment, flag silks and drum shells.

When opening a drill, if no fabric has been specified, the fabrics from the list on this tab will be used.



To change a fabric, select the Edit (pencil) button on the row for the fabric you would like to change. A new window will appear where you may select the fabric of your choice.

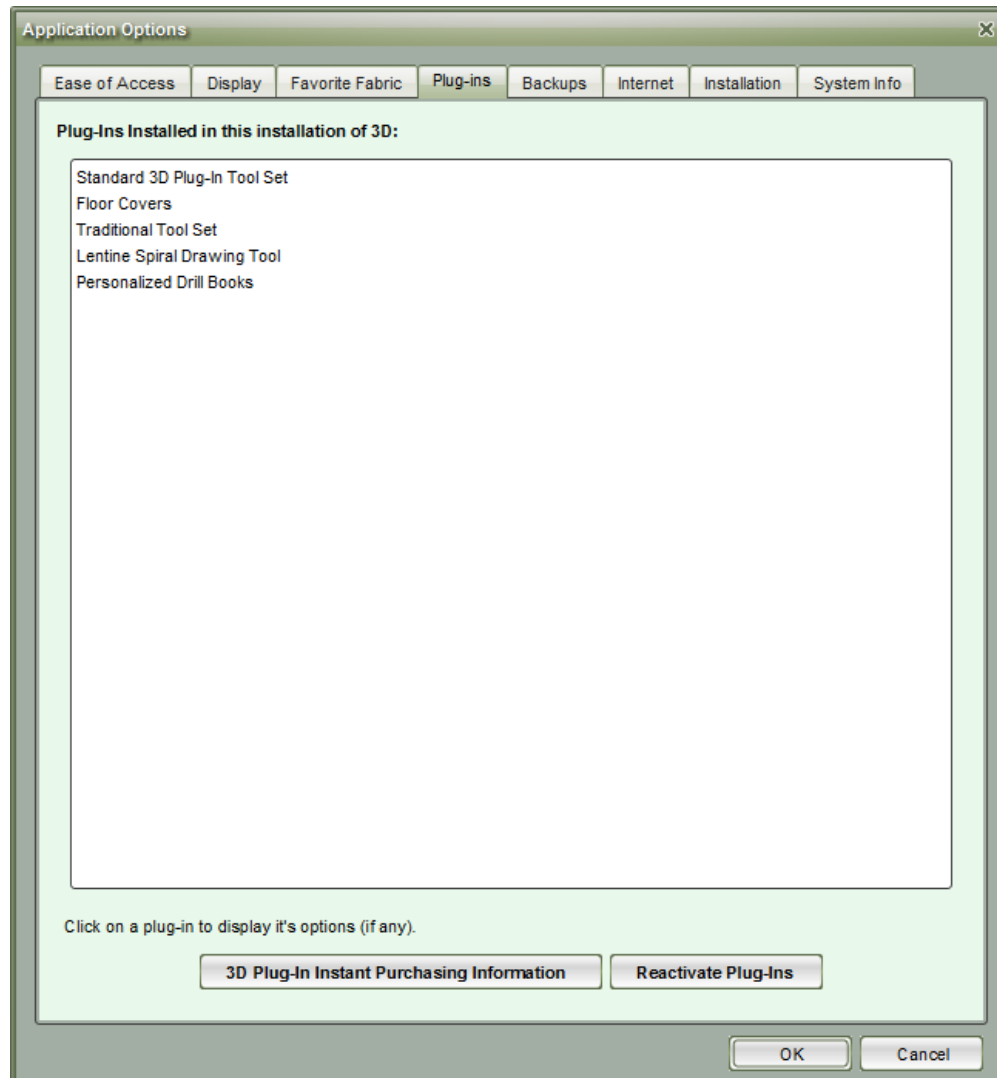
To create your own custom fabrics for use in the 3D Real View, please visit the [Custom Fabrics](#) guide.

Plug-ins

The **Plug-ins** tab lists all of the plug-ins that are installed on your installation of Pyware 3D.

3D Plug-in Instant Purchasing information – selecting this button brings up a new window with pricing and accessibility for purchasing 3D Upgrades and Accessories. A valid credit card and internet access is required to complete the purchase.

Reactivate Plug-ins – selecting this button brings up a new window that allows you to reactivate a 3D Plug-in you have previously purchased. It will be necessary to reactivate your plug-ins should you need to reinstall your software.



Backups

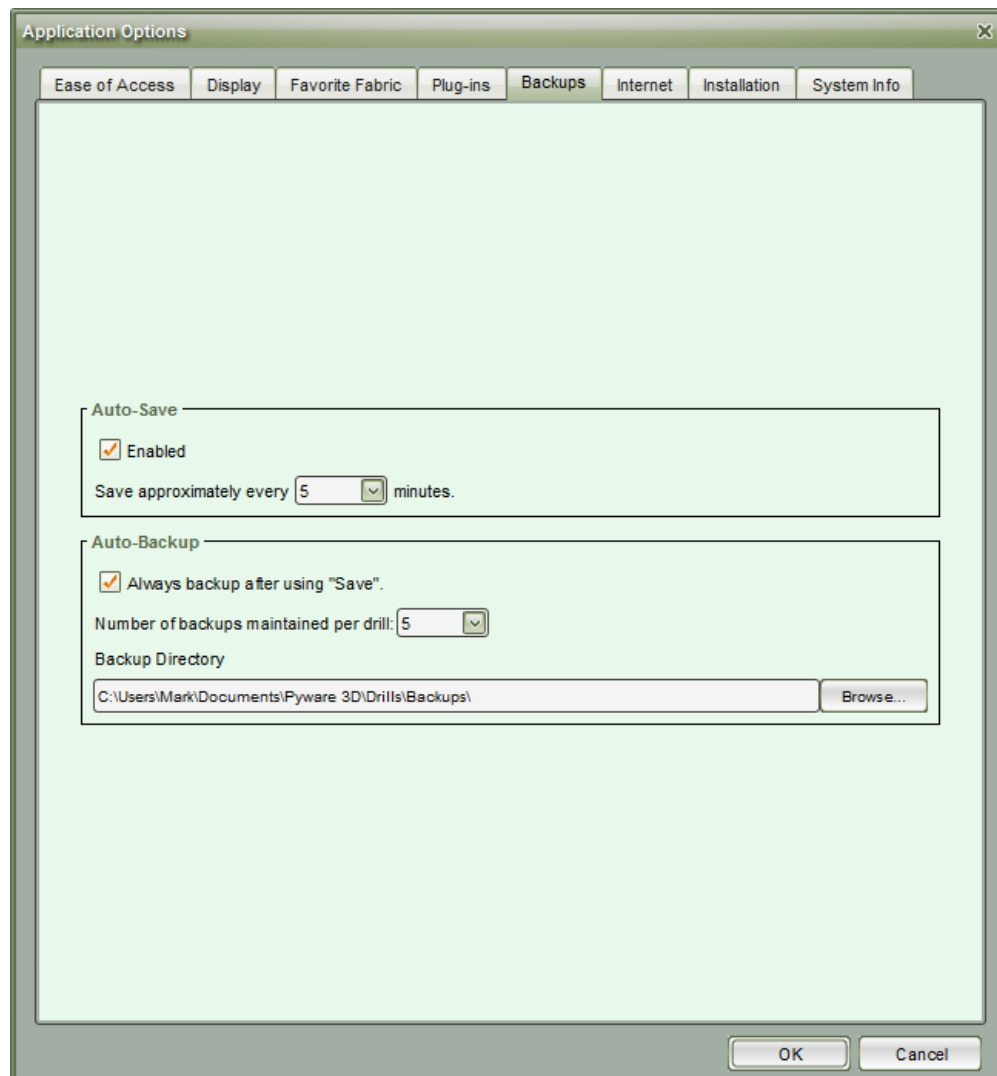
The **Backups** tab contains options for controlling the automatic backup and auto-save features.

Enabling **Auto-Save** will save every X minutes (where X is the number you specify from the menu) if any changes have been made to the drill, and after you have selected a selection tool. Auto-Save will not begin to automatically save the file until the file has been created and saved at least once.

Backup Directory is the location of your backup file folder.

Number of backups maintained per drill option changed the maximum number of copies created.

Always backup after using Save option turns on or off the automatic backup feature. When on (checked) a new backup file is saved every time you choose **Save** from the **File** menu.



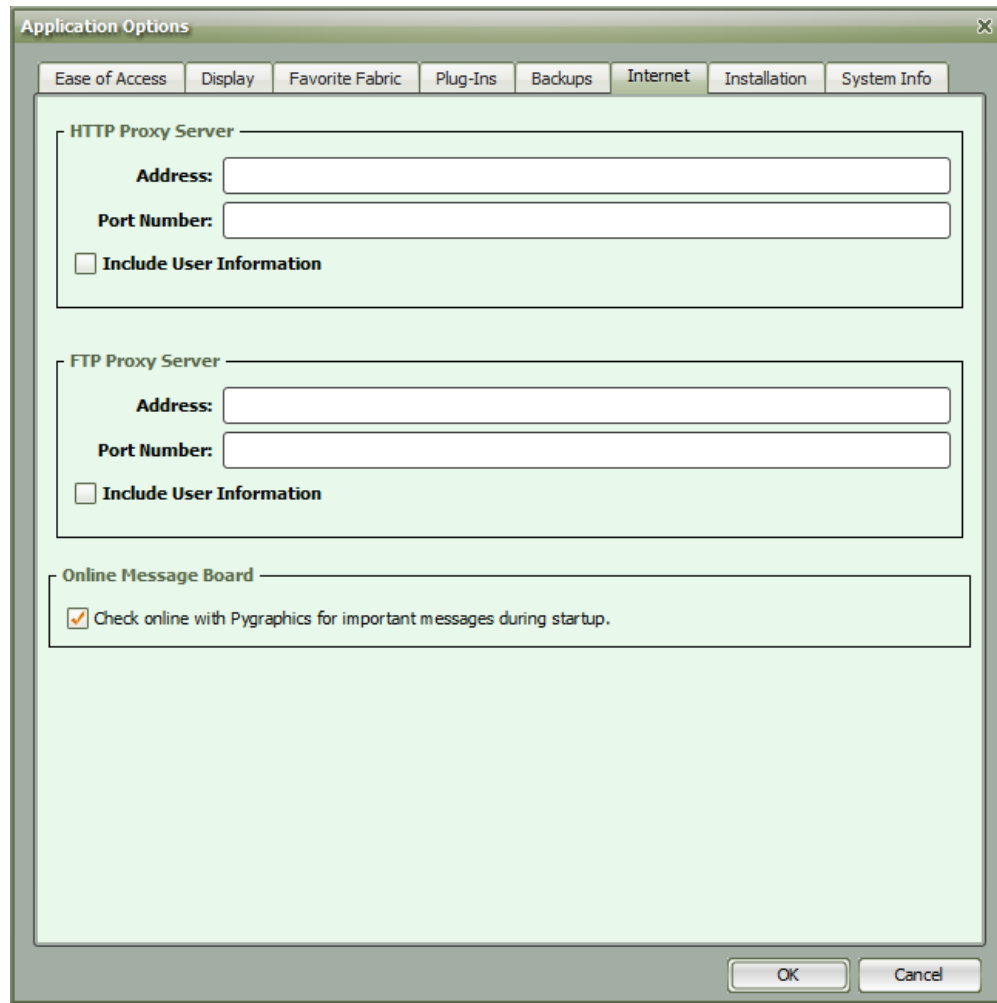
Internet

The **Internet** tab aids in connecting to Pygraphics' servers when your network might be blocking access. Included on the tab are options to enter HTTP and/or FTP Proxy Server information.

The HTTP Proxy Server information is helpful in allowing items such as new Real View models to be pushed out to your machine.

The FTP Proxy Server information is helpful in allowing authorization of the installation of 3D as well as access to the Online File Manager.

Disabling the Online Message Board will not allow 3D to check for any messages from Pygraphics' headquarters.



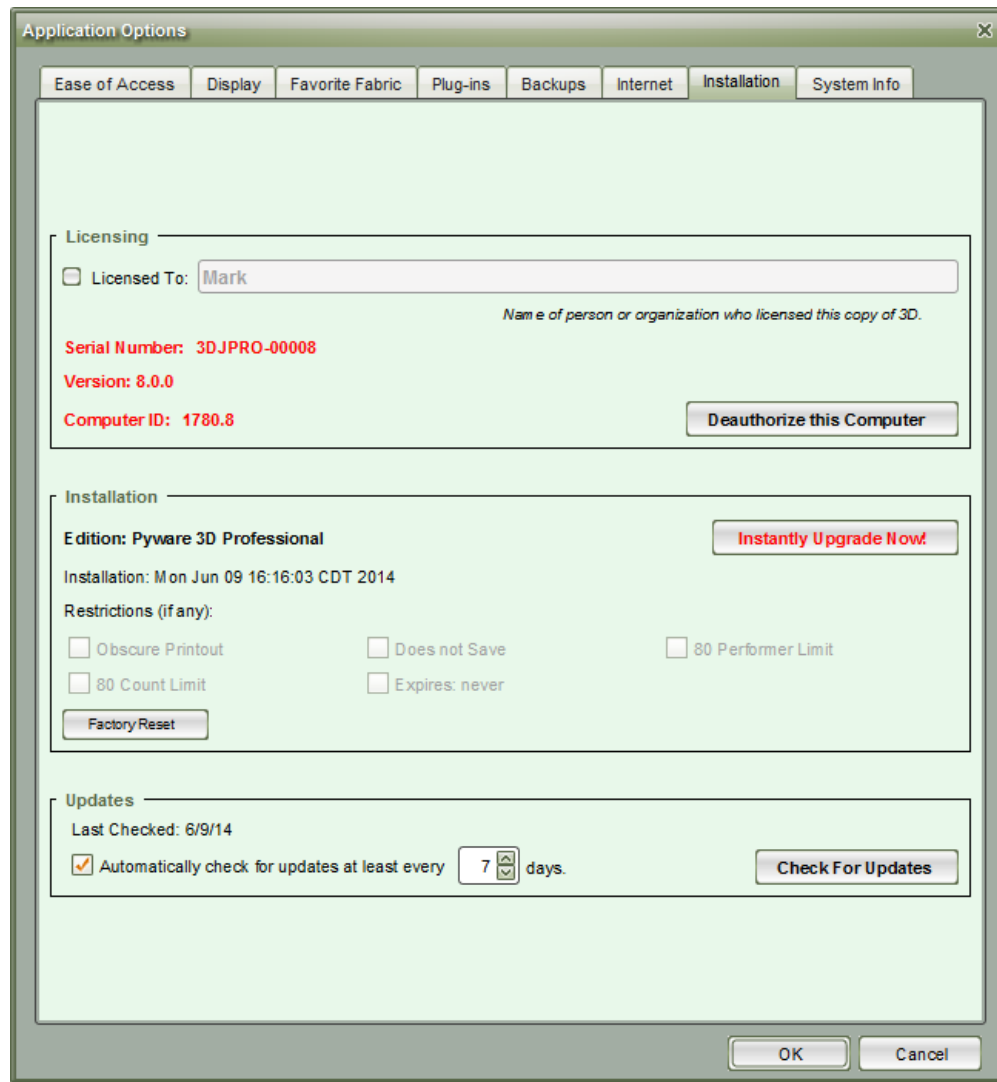
The screenshot shows the 'Application Options' dialog box with the 'Internet' tab selected. The dialog has a title bar with a close button. Below the title bar is a tabbed interface with tabs for 'Ease of Access', 'Display', 'Favorite Fabric', 'Plug-Ins', 'Backups', 'Internet', 'Installation', and 'System Info'. The 'Internet' tab is active and contains three sections:

- HTTP Proxy Server**: Includes fields for 'Address' and 'Port Number', and a checkbox labeled 'Include User Information' which is currently unchecked.
- FTP Proxy Server**: Includes fields for 'Address' and 'Port Number', and a checkbox labeled 'Include User Information' which is currently unchecked.
- Online Message Board**: Includes a checkbox labeled 'Check online with Pygraphics for important messages during startup.' which is currently checked.

At the bottom right of the dialog are 'OK' and 'Cancel' buttons.

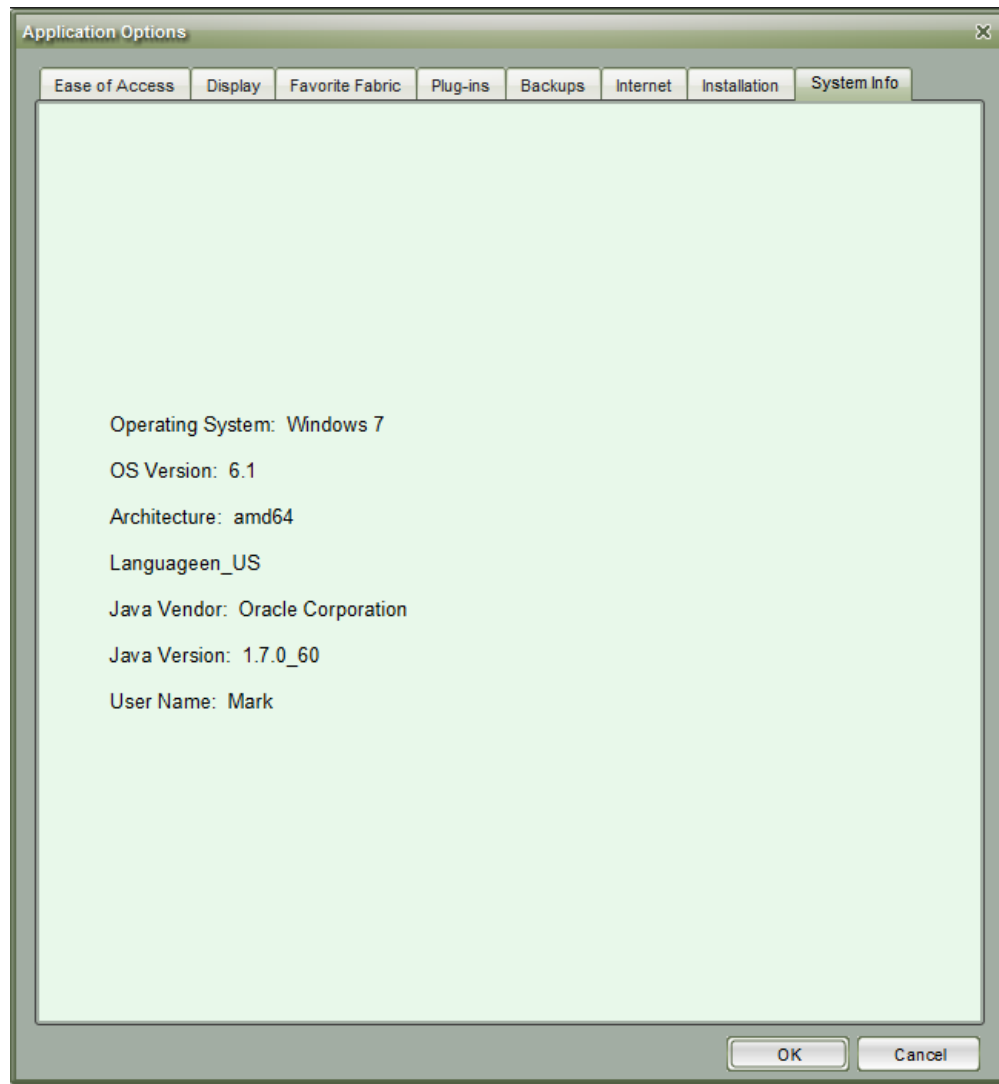
Installation

The **Installation** tab contains activation and registration information. If you have not entered your activation information, the 3D program will function as a demo. The activation information is entered the first time the program is run.



System Info

The **System Info** tab displays system information such as the computer's operating system and version of the Java™ machine.



Edit Menu

The Edit menu contains many standard Edit menu functions (such as [undo](#) and [redo](#), [copy](#), [cut](#), and [paste](#)), as well as some functions that are unique ([Snap To](#), [Shorten/Lengthen Transition](#)) to 3D.

Edit: Undo

Undo will undo the last performed function in a drill file. 3D remembers the last 100 changed in a drill, so there will always be a list of undo-able action to cycle through.

To Undo a function in 3D, go to the **Edit** menu and choose “Undo ____.” A notification will appear in the middle of your screen stating what function was undone. The Undo function will reselect performers and open the last tool that was used.

Edit: Redo

The **Redo** function will revert the last change that the **Undo** function removed. If multiple changes were removed via the Undo function, reverting them via the Redo function will add the changes back in order that the changes occurred.

For example: If you add a page tab on count 0, then choose to Undo the change, the page tab on count 0 would be removed. Selecting Redo will add the page tab back to count 0, as that was the last action that was undone.

Edit: Delete

Both performers and transitions can be “deleted” from a drill.

Highlight performers on the field, then go to the **Edit** menu and choose **Delete**. A **Delete Options** will appear, where you will have two choices:



Delete Transition resets the **transition** between counts X and X (whichever **page tabs** your **red** and **yellow anchors** are on at the same time) of the selected positions to a “Hold” (or mark time). After selecting the **Delete Transition** radio button and clicking the Delete Transition button, you will not be prompted to confirm.

Delete Performers permanently deletes the selected positions from the entire drill. Upon selecting the **Delete Performers** radio button, then clicking the **Delete Performers** button, you will be prompted to

confirm the permanent deletion of the marked positions. For your safety, on this window, you cannot hit [ENTER] to confirm the deletion. You must click the *Delete button.

Edit: Copy

If performers are selected, the **copy** function will copy the selected performer (including visuals, equipment, and uniform) between your secondary and primary anchors.

If no one is selected, the **copy** function will copy the entire range of drill between your secondary and primary anchors.

To copy a selection of drill, spread your anchors over a range of counts you would like to copy, then go to **Edit** and choose **Copy Range**.

Any selection you would like to copy can encompass multiple page tabs.

Edit: Cut Range

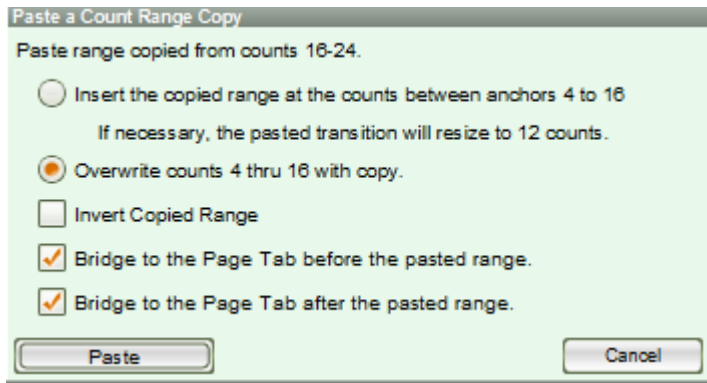
Choosing **Cut Range** from the **Edit** menu will copy all information within the anchors on your Count Track, and remove counts and range from the drill. Once a range has been cut, the Count Track will adjust accordingly. All performers and drill data (including but not limited to: transitions, text boxes, prop locations, arrows, etc.) are copied.

To cut a range of drill, spread your anchors for the section of drill you would like to cut, then choose **Edit** and **Cut Range**.

Edit: Paste Range

Paste Range will paste a copied (or cut) range of counts into a new range of counts. When pasting a range of drill, you can choose to either insert counts or overwrite an existing range of counts.

To paste a section of drill, it must first be copied or cut. Once you have copied/cut a range of drill, move your yellow (secondary) and red (primary) anchors on the count track to where you want the pasted drill to begin, then choose **Edit > Paste Range**. The dialog below will appear with options for you to either insert or overwrite the existing drill.



When inserting counts (the top radio button), the count at which your secondary (yellow) anchor is will be replaced with copied secondary (yellow) anchor information. Or in other words, the drill that you copied/cut from, starting at the yellow anchor, will replace the drill that you are inserting at, or where the yellow anchor is now. Pasting a range this way will paste counts to the range you have selected. 3D will then shift the existing transitions forward and create new bridges automatically.

When overwriting counts (the 2nd radio button), the pasted range will overwrite any drill from your secondary (yellow) to primary (red) anchor. No counts will be added to the drill.

Invert Copied Range will flip, or invert, the transitions when pasted. For example, if you copy a range of transitions that moves from a box, to an arc, to a wedge, when you choose **Invert Copied Range** and paste the range, the transition would start with a wedge, which goes to the arc, then ends with the box.

There are two options to bridge the pasted range to the page tabs before and after the pasted range automatically. If either option is selected, 3D will attempt to bridge the transitions from the pages before and after the pasted range. If you choose to not use this option, you may have to go back and manually regroup performers to avoid any possible collisions.

Edit: Paste Performers

This function pastes performers that have been stored in the clipboard with the **Copy** function. If nothing is stored in the clipboard the **Paste** function will be dim. Select **Paste** from the **Edit** menu and the following will display:



Paste with the same matching order

Pastes the performers into current count of drill and maintains their same identity (matching order) as the performers they were copied from.

Paste with different matching order

This option will only be available if performers were selected on the currently displayed count prior to choosing **Paste**. The selected performers will be performers 3D will try to move (match) the pasted performers into. **Matching Controls** will display in the right area of the **Paste Control Panel**. **Matching Controls** are used to match the positions of the pasted shape to their respective performers in the drill. On the field display matching lines are drawn between the positions of the pasted shape and the selected performers. Often the positions in the line are matched correctly or simply need to be flipped over to be correct using the **Flip** button. If more matching control is necessary, clicking the **Clear** button will clear all of the matching lines for you to replace manually.

Paste as new performers

This option will enter the performers as new performers. This is typically done at count 0 of the drill. New performers are rarely entered at any other count. The only time you might want to enter new performers at a count other than count 0 is when you are starting a new drill by creating your first time performers at set #2 and plan to chart backwards to set #1.

Mirroring / Less Options

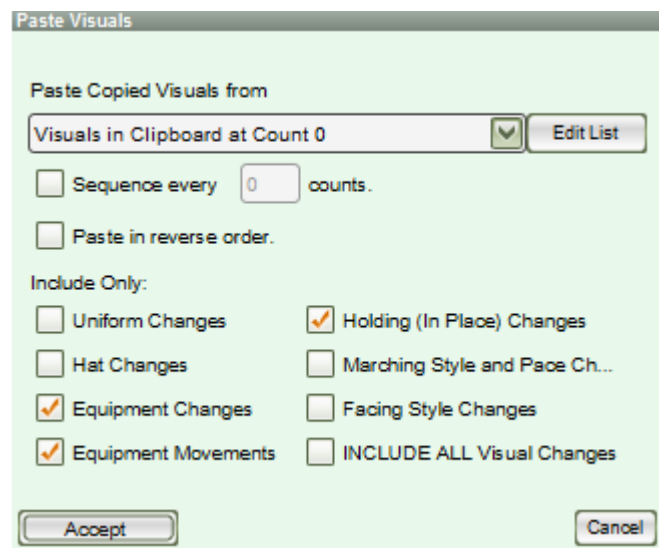
Clicking this button expands the **Paste Control Panel** to show **Mirroring Options**, which allow you to **Invert paste shape vertically**, **horizontally**, and **across mid stage**. This inverts the copied shape prior to pasting it on the current count of drill.

Edit: Paste Visuals

This function pastes visuals that have been stored in the clipboard with the **Copy** function. If nothing is stored in the clipboard the **Paste Visuals** function will be dim.

Pasting Visuals is a great way to quickly create ripple effects, as well as copy and paste frequently used visuals.

Select **Paste Visuals** from the **Edit** menu and the following will display:



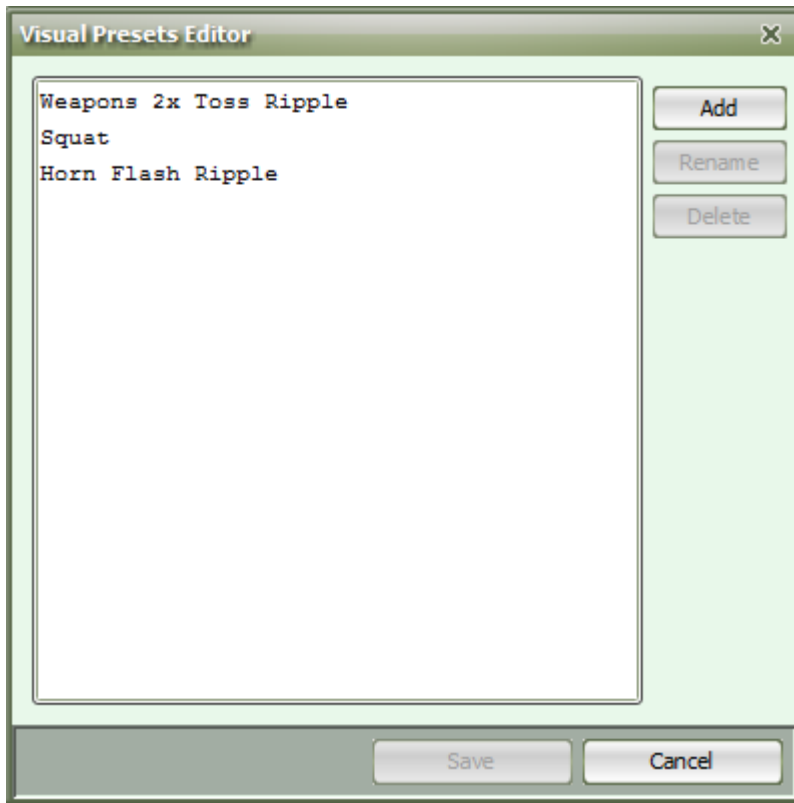
The drop down menu shows both saved visuals (See: *Visuals Presets Editor) as well as copied visuals from the drill file.

The **Sequence** option will have the performers perform the pasted visuals every X number of counts, where X is the number of counts you specify.

For example, let's say you wanted to have a flag toss ripple every 2 counts. You would copy a performer's flag toss, set your anchors for the range duration, and select the performers to perform the ripple. Choose Paste Visuals from the Edit menu, then choose to **Sequence** every 2 counts. Be sure to have the "Equipment Movements" option checked.

Visuals Presets Editor

The Visuals Presets Editor allows you to save presets of visuals. This grants the option to have even less setup for pasting in frequently used visuals, as Visuals Presets can be saved outside of the drill file (vs. copied visuals, which are not remembered once a drill is closed).



To save a visual as a preset, you must first copy the visual. Once copied, highlight performers where you would like the visual to occur, and choose Edit > Paste Visuals. In the Paste Visuals window, choose **Edit List**. This will open the **Visuals Presets Editor**. Pressing “Add” will open a new window, prompting you to name the visual preset you would like to save. Press OK once you have entered a name, then Save in the Visual Presets Editor. The visual preset will now be remembered and can be used in any drill in 3D.

Paste in reverse order will invert any pasted visuals. For example, if you had a horizontal line that had a ripple from left to right, if you choose to copy and paste in reverse order, the ripple will go from right to left.

Any options you choose to include when pasting visuals will be remembered for quick access the next time you open the Paste Visuals dialog. Be sure to include/exclude the options you want pasted when pasting visuals.

Edit: Select Recent

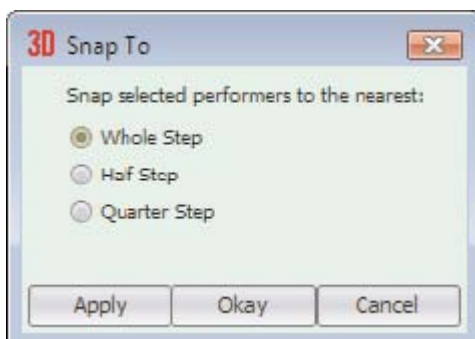
Choosing **Select Recent** from the **Edit** menu re-selects the last made selection of performers. If a new shape is entered, then the performers of that shape will be selected. Double-clicking on the **Pointer** tool does the same as **Select Recent**.

Edit: Select All

Choosing **Select All** from the **Edit** menu selects all performers displayed on the current count of drill.

Edit: Snap To

This function snaps the selected performers to the nearest whole, half or quarter step. Choosing **Snap To** from the **Edit** menu will display the **Snap to** dialog where you can choose the snap resolution.

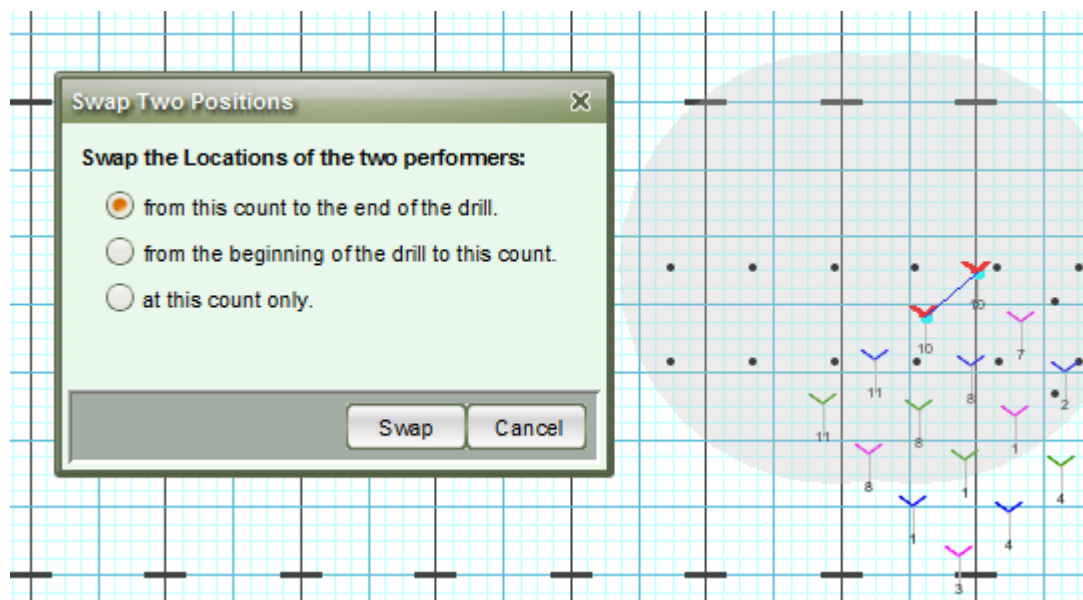


Edit: Adjust To

The [Adjuster editing tool](#) is used for quickly moving and/or adjusting performer's locations and transitions without having to first select the individual performers.

Edit: Swap Two Positions

Swap Two Positions is a way to quickly switch the spots of two performers in a drill. When two performers are selected, you can go to the Edit menu and choose **Swap Two Positions**. The Swap Two Positions window will appear with the following options:



From this count to the end of the drill – the selected performers will switch positions at the count your Primary (red) Anchor is located at on the [Count Track](#), and apply to every count after, until the end of the drill.

From the beginning of the drill to this count – the selected performers will switch positions from the beginning of the drill up to the count where your Primary (red) Anchor is located at on the [Count Track](#).

At this count only – the selected performers will switch positions on the count where your Primary (red) Anchor is located on the [Count Track](#).

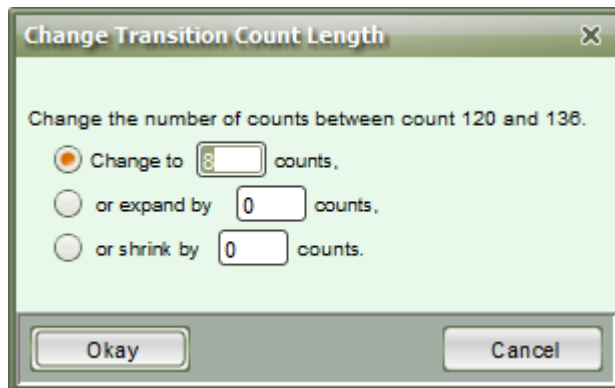
Press **Swap** in the window to commit the change.

Edit: Lengthen/Shorten Transition

Transitions between pages (sets) can be quickly lengthened or shortened, depending on your need. To lengthen or shorten a transition, do the following:

- Set your anchors at the beginning and end of the transition you would like to edit. This can be done quickly and accurately by clicking on the page tab at the end of the transition. Your anchors will snap to the appropriate page tabs.
- Go to the Edit menu, choose **Lengthen/Shorten Transition**.
- If you know the new count structure (total counts) for the transition, choose the top button, to change to X counts (X being the new count structure you want for the transition). Otherwise, choose to Expand or Shrink (both separate options) by X counts.

- Once you make your selection and press Okay, 3D will lengthen or shorten the existing transition, depending on the choice you made.



Tools Menu

The **Tools** menu contains many of the same tools as in the [Tool Palette](#). The tools in this menu are some of the most used tools. They are found in the Tools menu as another handy way to select tools, especially through the menu shortcuts. Your preference of shortcuts used in the **Tools** menu can be changed through the [Shortcut Editor](#) of the [Utilities](#) menu.

Display Menu

The **Display** menu contains functions which control the way the counts of drill appear on the field. Many of which are also shown as buttons on the title bar of the Field Display window and the Console. These are some of the most used display related tools. They are found in the **Display** menu as another handy way to change display characteristics, especially through the menu tools shortcuts. Your preference of shortcuts used in the **Display** menu can be changed through the **Shortcut Editor** of the **Utilities** menu.

Whole Step option causes the cursor to jump to whole step intervals when entering location on the field.

Similarly **Half Step**, **Quarter Step**, **Eighth Step**, and **Sixteenth Step** behave like **Whole Step**. These options are also found as buttons in the upper right corner of the **Console**.

Show/Hide Props switch controls the display of props on the field. This switch is also found on the right side of the title bar of the **Field Display Window**.

Show/Hide Labels switch controls the display of labels on the field. This switch is also found on the right side of the title bar of the **Field Display Window**.

Show/Hide Text switch controls the display of text on the field. This switch is also found on the right side of the title bar of the **Field Display Window**.

Zoom Grid function zooms the display on the field in or out. This function is also found on the right side of the title bar of the **Field Display Window**.

Shift Grid function slides the display of the field in any direction. This function is also found on the right side of the title bar of the **Field Display Window**.

Center Grid function centers the field back to the middle of the **Field Display Window**. This function is also executed by clicking on the **Shift Grid** function while holding the [ALT] key.

Measure function measures the distance between any two points on the field. After selecting measure, clicking on two points shows the distance in the **Console**. This continues until the **Measure** function is deselected or the mouse is double-clicked.

Animate function is the same as clicking **Animate** from the **Animation Controls** on the **Count Track**.

Next Page Tab jumps the Red and Yellow Anchors of the **Count Track** on page tab to the right.

Previous Page Tab jumps the Red and Yellow Anchors of the **Count Track** one page tab to the left.

First Count jumps the Red and Yellow Anchors of the **Count Track** to the first count on the track.

Last Count jumps the Red and Yellow Anchors of the **Count Track** to the last count on the track.

Hide Selection hides the selected performers throughout the drill. This is useful when performers that you are not currently editing are in the way of performers that you are editing.

Lock Selection locks your selection of performers from editing and/or selecting.

Unlock All will unlock any performer(s) that were locked in the drill.

Show All sets any performers that you have currently hidden to be visible again.

Utilities Menu

The Utilities menu contains various options for customizing the drill file, as well as the ability to [create movies](#) of your drills.

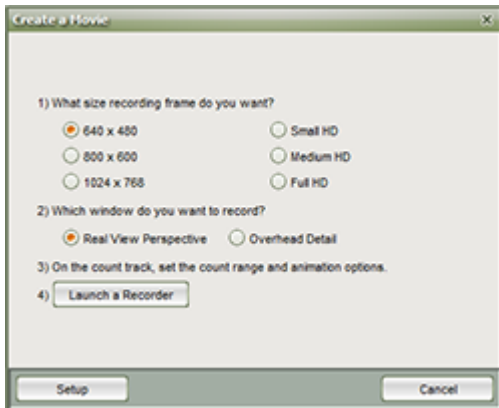
Utilities: Create Movie



For a step by step guide on recording your drill's animation, click [here](#).

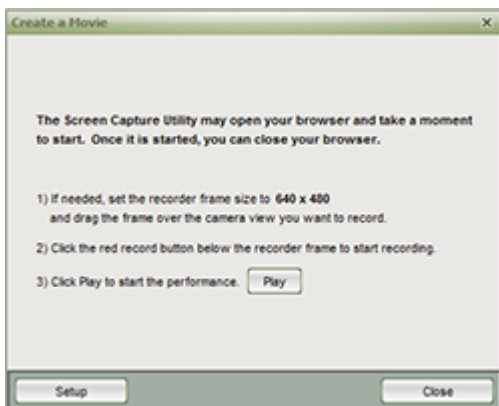
Movies of drills are a fantastic way to share your creation with clients, potential clients, and students (performers). Recording the drill animation is especially useful if your client does not have a copy of 3D to view the drill on their personal machine.

To create a movie of your drill, you'll need to go to the [Utilities](#) menu and choose [Create Movie](#). A new window will open with various recording options.



Set the size of the movie you would like to create, and then specify if you'll be recording the Real View or the design grid. Once these are set, be sure to prep your playback options (play from beginning to end, a certain range, audio, etc.) and then launch the recorder.

Two new windows should open, one from 3D with further instruction and the other for the screen recording.



Once you have set up the recording and are ready to start, press the record button. You'll have a small countdown before recording actually occurs so you may press Play.

Utilities: Drill Rewriter

The [Drill Rewriter](#) is found in the [Utilities](#) menu. The **Drill Rewriter** changes the number of performers in a drill by adjusting the spacing of the shapes within the drill. Performers can be removed or added to a set and the adjustment is made throughout the drill.

Utilities: Shift All Performers

[Shift All Performers](#) is a function found in the [Utilities](#) menu that will adjust all performers in a certain direction (that you specify) for the entirety of the drill. This is helpful if the show was written too far from the front side line and needs to be adjusted forward without rewriting each set.

Utilities: Count Editor

The [Count Editor](#) is found in the [Utilities](#) menu. The **Count Editor** adds or removes counts from a drill. Counts can be inserted or removed at any place within the drill. This function is most useful to extend the length of a drill when additional counts are needed at the end of the drill.

Utilities: Cast List Editor

The [Cast List Editor](#) is found in the [Utilities](#) menu. The **Cast List Editor** is an editor for creating a customized cast list or importing the cast list from an existing drill file.

In the Cast List Editor you'll also find the [Symbol Map Editor](#), where you can assign details for performers (such as uniforms and equipment carried) based on which symbol is assigned to them.

Utilities: Grid Designer

The [Grid Designer](#) is found in the [Utilities](#) menu. The **Grid Designer** is an editor for customized field grids. You can use this editor to design any type of grid such as winter guard floors, soccer fields, and parades.

Utilities: Page Tab Editor

This feature is only found on the Basic Edition, or versions 3 and earlier of 3D.

The [Page Tab Editor](#) is found in the [Utilities](#) menu. The **Page Tab Editor** is useful for entering page tab titles. Page tabs are considered sets when printing. If titles are entered, then the title is printed on the chart. Use this when you want to title a set for clarification. For example, Set #1 could be titled “Opening Formation” and Set #4 could be titled “Concert Formation”. The **Page Tab Editor** is also another way to enter page tabs. Typically, page tabs are entered from the Page Tab Editor button on the Count Track, however, they can be entered from this editor just as easily.

Page tabs can also represent sub-sets. Sub-sets (or sub tabs) are useful if you need to define a hit point for only part of the ensemble without advancing the total number of pages (sets).

For example, with two sub-tabs between set 2 and 3 the numbering sequence would be 1, 2, 2A, 2B, 3, 4, etc.

The option to print or not print sub-tabs is found in the **Print Charts** function.

Utilities: Production Sheet

Interactive and Professional editions only.

The [Production Sheet](#) allows you to map out your drill from beginning to end with helpful instructions or notes that can be quickly added to a chart. You may import any information on the **Production Sheet** into a **Text Box** by using the [Text Box](#) tool.

Utilities: Shortcut Editor

The [Shortcut Editor](#) is used to change the shortcuts assigned to menu items. You can set up shortcut profiles so each user can establish their own preferences for shortcuts.

Utilities: Helper Editor

The [Helper Editor](#) allows you to choose which helpers are displayed and which aren't. If you would like to turn all helpers off, or if you would like to set a helper to display again, this would be the tool for you.

Utilities: Figurine Editor

This feature is only used for figurines when the Classic Perspective View is enabled, and the Real View is disabled.

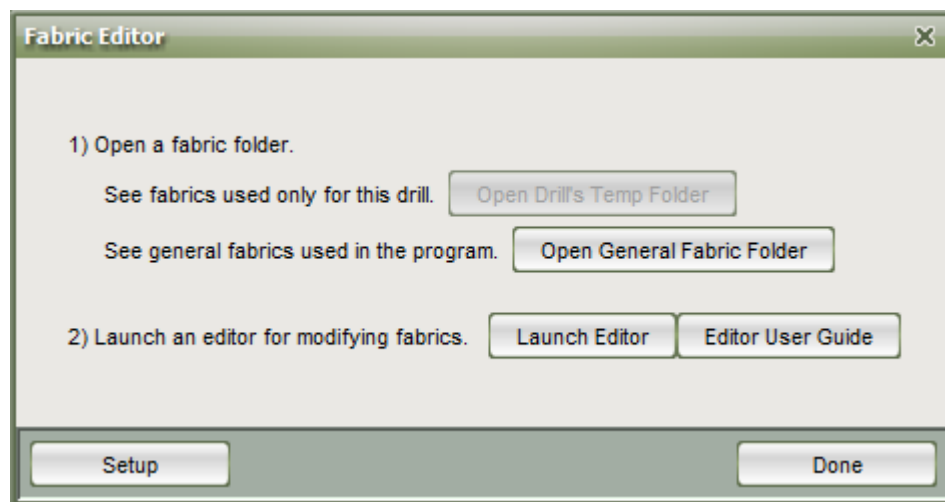
The [Figurine Editor](#) is used to change the uniform colors and types for the perspective view figures.

Utilities: Command Editor

The [Command Editor](#) allows you to edit Group Names and Transition Descriptions for [Instruction](#) printouts.

Utilities: Fabric Editor

The **Fabric Editor** allows you to customize fabrics (included, but not limited to: model skin tone, uniforms, equipment, flag silks, and drum shells) for use in the 3D Real View. When the Fabric Editor is opened, a new window will appear:



If fabrics were included with a drill (a drill package, or .3dz file) you can view these fabrics by selecting the **Open Drill's Temp Folder** option.

To see the fabric files that were included with 3D, choose **Open General Fabric Folder**.

You can also launch an image editing software directly from 3D. Choose the **Launch Editor** button to customize fabrics.

If you do not have an image editing software installed on your machine, click the **Setup** button to download the program we recommend.

Clinic Menu

Here you will find settings for the Virtual Clinic analyzers. See the [Virtual Clinic](#) page for details.

Interactive Menu

This menu contains all of the Interactive functions that use the 3D Online Account Service as well as Pyware messages and web sites.

Online File Manager

The online file manager is a utility that uploads and manages drill files on the online account.

Online User File Access & Passwords

This is a utility that allows the administrator to create additional users and modify passwords that access the online account.

Unlock This Drill

This is a utility that will allow a user to unlock a locked drill using a key that has been given to them by the creator of the drill.

Drill Lock Decoder

This is a utility that allows you to create keys to unlock files that have been locked by the creator so that the master password does not have to be released.

Check For Messages...

The Pyware Message Board is an automated information system that checks with Pygraphics Headquarters for any important notices such as updates that are currently available for you to download.

3D will check Pygraphics Headquarters for any new updates or important notices that you might be interested in and display the list of messages in the Subject box. If you want to read a message, click on the message listed in the **Subject** box and it will display.

Pyware Website

Launches your default browser to the Pyware website.

Frequently Asked Questions

Launches your default browser to the page of Frequently Asked Questions on the Pyware website.

De authorize This Computer

This function allows the computer 3D is installed on to be de authorized so that another machine may be authorized on the account.

Get Plug-ins & Accessories

This function allows you to instantly purchase plug-ins and program updates and upgrades online.

Instantly Upgrade My 3D Now

This function will allow you to instantly purchase an update or upgrade available for your installed version.

Contact Pygraphics

This will launch the Pyware website with contact information in your default web browser.

Reference: About 3D

About Pyware 3D is found in the **Reference** menu. This shows the program version information and the copyright information. Click on the **License Agreement** button to view the License Agreement.

Drawing Tools

Drawing tools in 3D can be used two ways: to add new performers to the file for the “First Time”, or create a shape that is the destination, or “Transition”, for existing performers.

First Time

When the **Red** and **Yellow Anchors** of the [Count Track](#) are on the same count of drill, drawing tools will be accessible on the [Tool Palette](#). If no performers are selected on the field, the places in the new shape created by a drawing tool will be filled with first time performers. This means that the performers of the shape do not yet exist anywhere in the drill.

To create a shape of first time performers the **Red** and **Yellow Anchors** must both be set to the same count, and NO performers should be selected on the field at that count when choosing a drawing tool. Only in rare cases are first time performers entered at any count other than count 0, such as when it is more convenient to start elsewhere in a file other than the beginning.

Transition

When designing on counts other than count 0, drawing tools are typically used to create shapes that define the end of a transition of existing performers. For example, let's take a line moving into a circle. The [Circle](#) tool will be used to create the destination of the transition from the line. the **Red Anchor** will be set to the count of drill where the circle will be drawn. The **Yellow Anchor** is set to the beginning of the transition into the circle which is usually the previous page tab. To indicate which performers on the field are moving into the circle *they must be selected*. In this example, you would select the line using a selection tool, then choose the [Circle](#) drawing tool. After the circle is created, **Matching Lines** indicate which performers in the line are moving into which new place in the circle.

Click on the arrow next to **Drawing Tools** in the Table of Contents to the left to expand this section and begin.

Line Tool

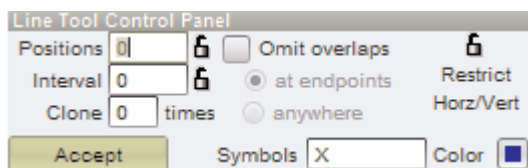
The **Line** tool is used to create a line of performers between two points.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the line to be drawn. To transition EXISTING performers into a line, move the **Red Anchor** to the count

where the selected performers should “hit” the line shape. Move the **Yellow Anchor** to the beginning count of the transition into the new line. This is usually the previous set in the drill. Select the existing performers that will be moving into the line using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



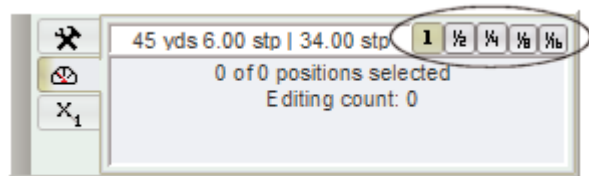
Clicking on the **Line** tool will display the **Line Tool Control Panel**.



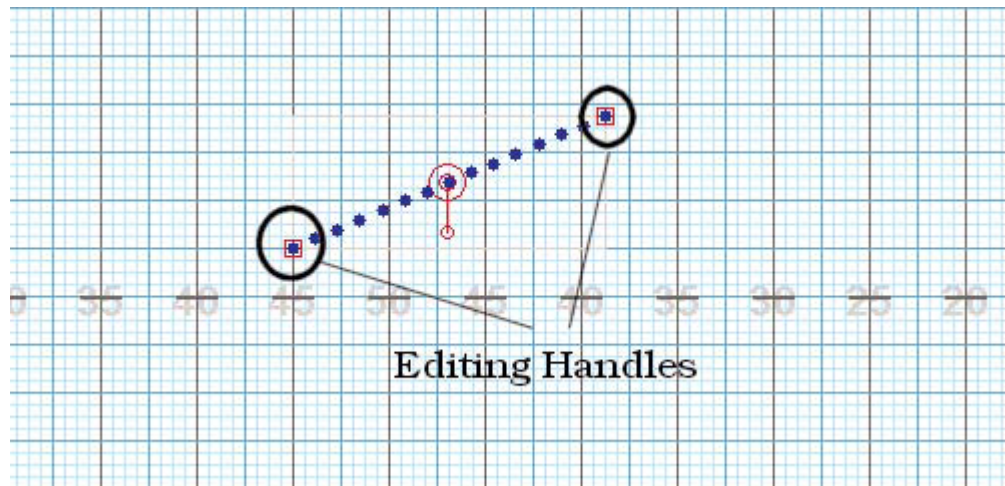
Drawing a Line

The line is drawn by clicking two points on the field display. The first click will enter the first endpoint and the second click will be the second endpoint.

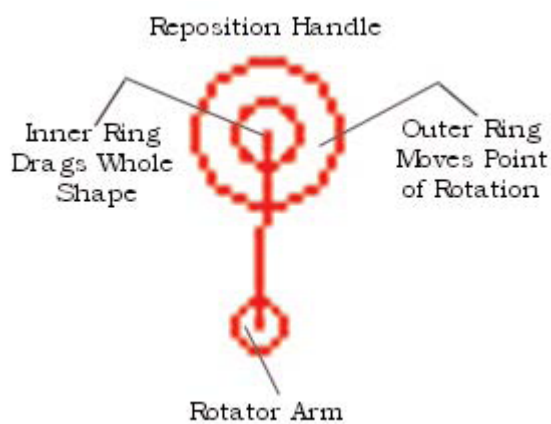
While entering endpoints, the cursor location is displayed in the console. The resolution of the cursor can be controlled by the **whole**, **half**, **quarter**, **eighth**, and **sixteenth** step switches in the upper right corner of the [Console](#).



Editing Handles will appear at the endpoints of the line. These handles appear as small red squares and can be dragged to reposition the line by changing the location of the line’s endpoints.

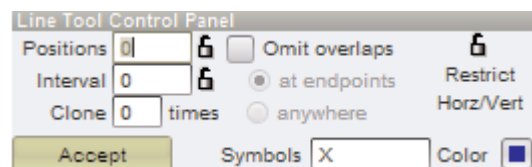


A **Reposition Handle** also appears at the midpoint of the line. This handle is useful for dragging the entire shape to a different location on the field. Drag the inner circle of the **Reposition Handle** to move the entire shape. The extended arm from the center of the **Reposition Handle** is called the **Rotator** and can be dragged to rotate the line to a new location. The **Point of Rotation** is the center of the **Reposition Handle**. To change the **Point of Rotation**, drag the outer circle of the **Reposition Handle** to a different place on the field.



Line Tool Control Panel Options

Entering the number of positions in the **Positions** box will lock the positions and the line will maintain the number entered while you move its **editing handles**. Since the number of positions of the line is locked, the line would grow or shrink by changing the interval between the positions.



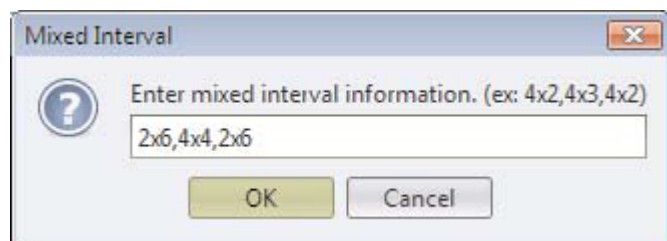
Similarly, entering the interval in the **Interval** box will lock the interval and the line will maintain the interval while you move its **editing handles**. Since the interval between positions is locked, the line would grow or shrink by changing the number of positions in the line.

Mixed Intervals are also entered in the **Interval** text box. This option will allow you to have different intervals in one form. Mixed Intervals are extremely useful when charting large instruments or instruments that are close together but vary in size (drum lines, for example).

To create a **Mixed Interval**, type the Interval value, followed by an "x", followed by the number of positions at that interval. For example, a line with 6 positions at a 2 step interval, followed by 4 positions at a 4 step interval, ending with 6 positions at a 2 step interval would be entered like this:

2x6,4x4,2x6

This should be typed into the **Interval** text box in the tool's control panel. To enter the **Mixed Interval** into a wider text box, hold the [ALT] key (or [OPTION] on Mac) while clicking in the **Interval** box.



Mixed Intervals can be entered before or after you create your shape, but must be entered before you **Accept** the form.

Positions and **Intervals** can be locked or unlocked by clicking on the respective padlock. When locked, the value cannot be recalculated by the computer if the size or shape of the form is modified.

Entering a number in the **Clone** box will clone the line across an axis for one clone, or across a point for two or more clones. The **Cloning Handle** will be placed in the center of the field and can be moved or rotated to reposition the cloned lines.

Omit Overlaps will watch for places where performers of a line are on top of other performers in the drill. The overlapping places in the line will be omitted. **Omit Overlaps** can watch for either overlaps involving only performers at the line's endpoints or overlaps involving any performer anywhere in the line.

Restrict Horizontal/Vertical forces the second endpoint to a location on the field that is in the line horizontally, vertically or 45 degrees diagonally with the first endpoint.

When entering the line as NEW performers, **Symbol** and **Color** is used to enter the symbol and colors for the new performers entered. **Symbol** and **Color** options are only shown for first time performers. To enter a symbol sequence such as X O X O, type the sequence one time. For example, "XO" will enter symbols X O X O X O throughout the line. Clicking on the Color Palette will display color options for the first time performers. The performer's symbol and color can be changed for existing performers using the [Performer Labeling](#) tool.

When creating a line from EXISTING performers, **Matching Lines** options are used to match the positions of the line to their respective performers in the drill. **Matching Lines** options are only shown when a shape is entered as the destination of a transition from a previous set. On the field display, matching lines are drawn between the positions in the line and the selected performers of the drill. Often the positions in the line are matched correctly, or simply need to be flipped over to be correct using **Flip** button. If more matching control is necessary, clicking the **Clear** button will clear all of the matching lines for you to replace manually. See the [Matching Lines](#) for details on matching.

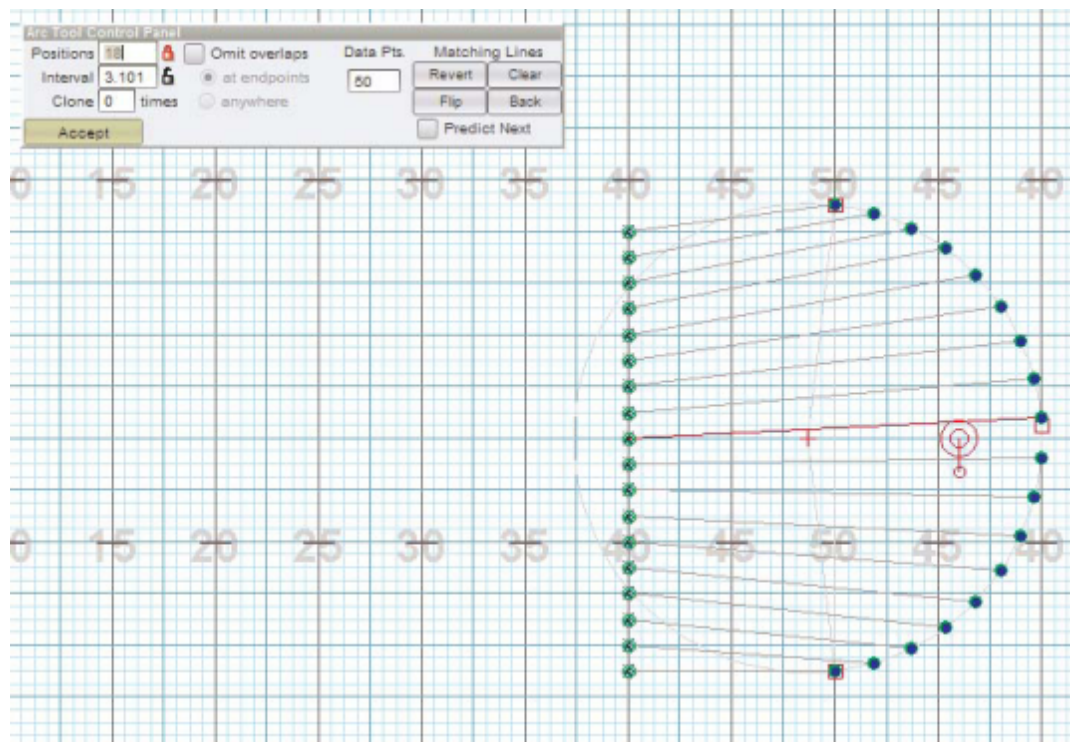
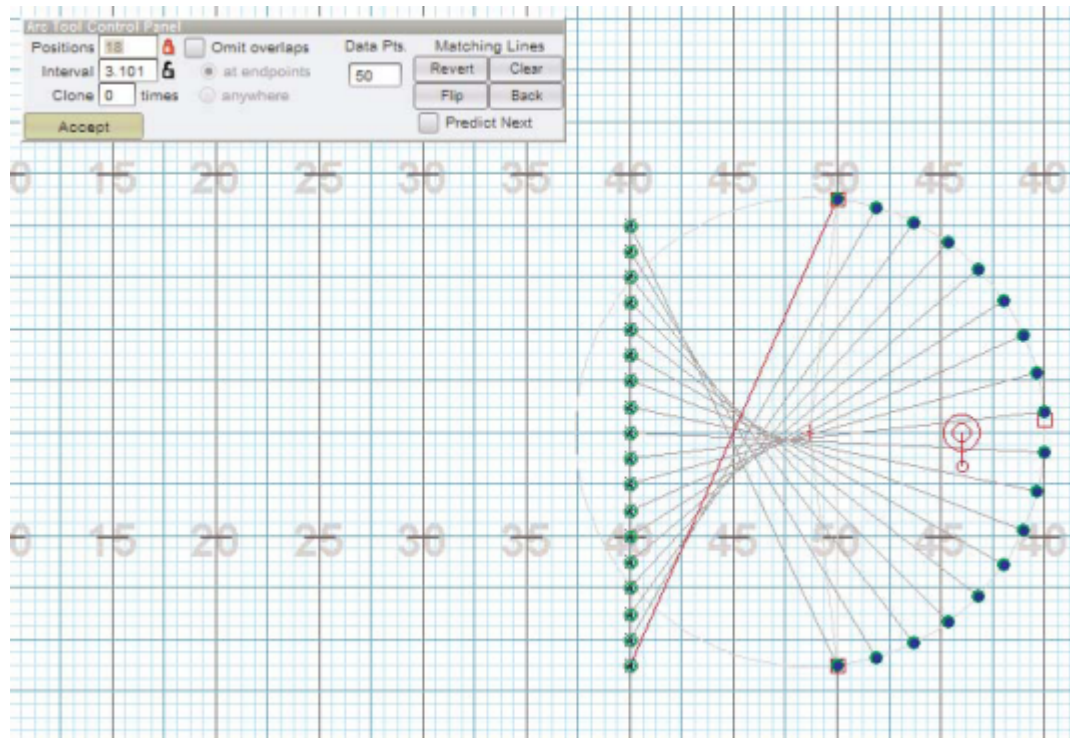
At any time the [Animation Controls](#) can be used to preview the line in the drill. Other useful options that can be accessed during entry of the line are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

The **Accept** button will commit the line to the drill page. Clicking on any tool without clicking **Accept** will cancel the line. The line can also be canceled by moving an anchor on the [Count Track](#), right-clicking anywhere on the field, or pressing [ESC] to close the tool.

Matching Lines

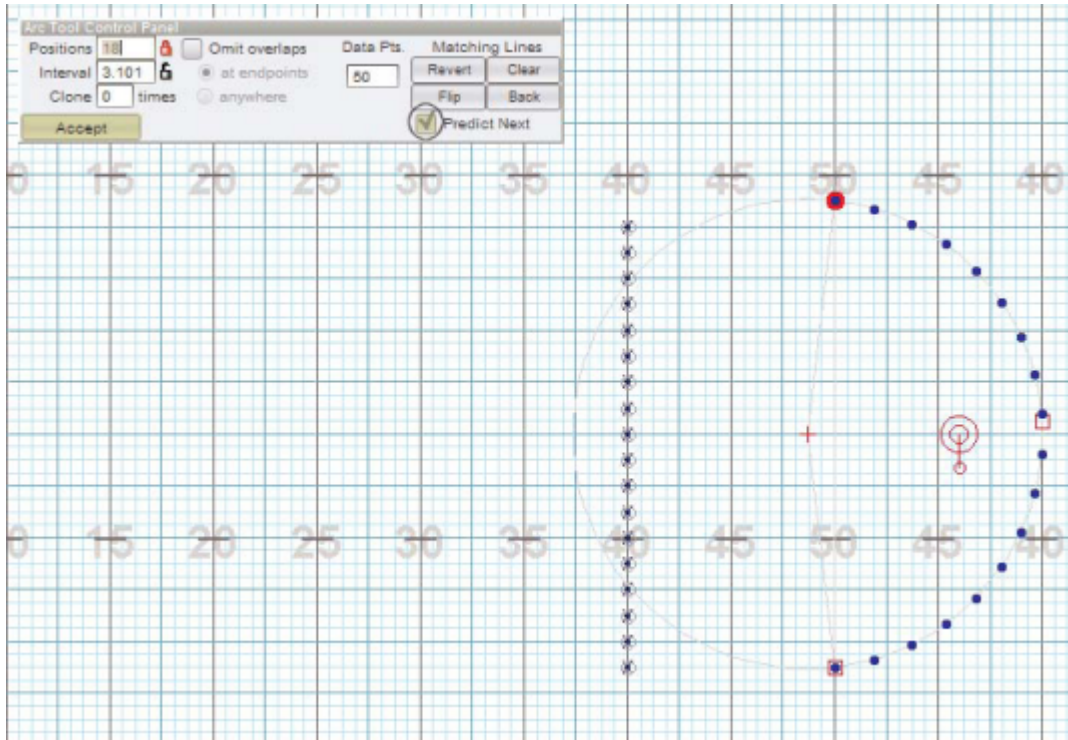
When drawing tools are used to create transitions of existing performers, you will need to identify (match) the new places made by the drawing tool with a selection of existing performers in the drill. This process is automatic in 3D and is shown by the matching lines extending from the new positions to the selected performers.

The matching order predicted by 3D is often correct, however you may need to occasionally adjust the order in which the forms are matched. The easiest, most common adjustment would be to flip the order by pressing the **Flip** button.

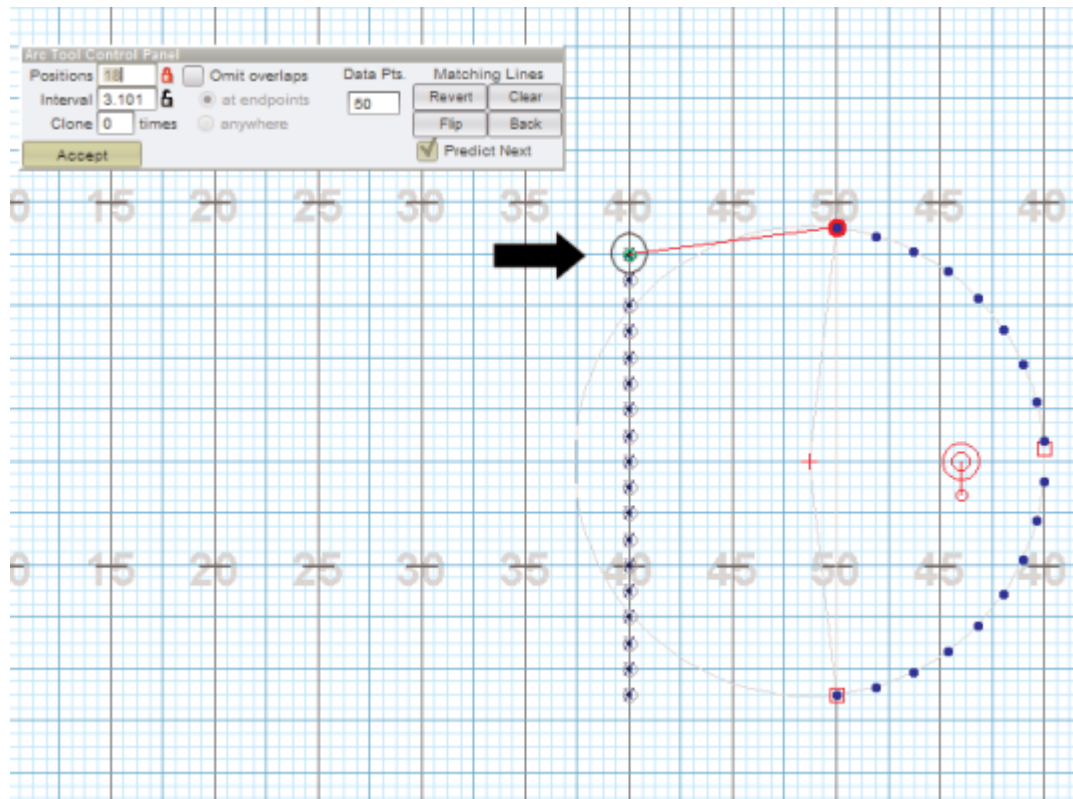


However, sometimes the matching order is not obvious enough for 3D to predict it correctly. In some situations, 3D may just need a little input to get started. Other times you may need to enter each of the matching lines yourself. When 3D has not found the correct matching order, the first thing to do is try to give it some help.

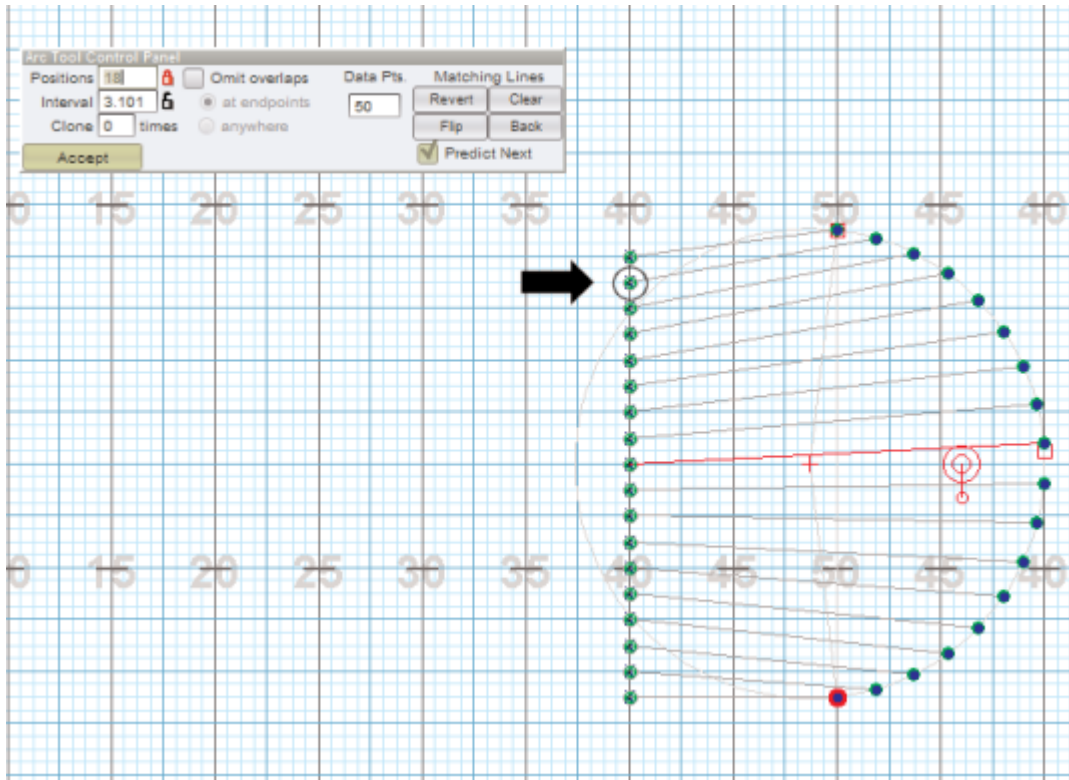
Click the **Clear** button to clear all of the matching lines and a red bubble will appear on top of the first new place. The red bubble indicates the new place that you will match to an existing performer.



With **Predict Next** checked, click on the selected performer that you want moved into the new place marked with the red bubble. A match line will connect the performers with the new place.



The red bubble will move to the next new place. Again, click on the selected performer that you want moved into this new place. Depending on the location of the selected performer, this may be enough matches for 3D to correctly predict all or some of the matches. Sometimes it may take one or two more manual matches for 3D to attempt a prediction depending on the matching order you are entering.

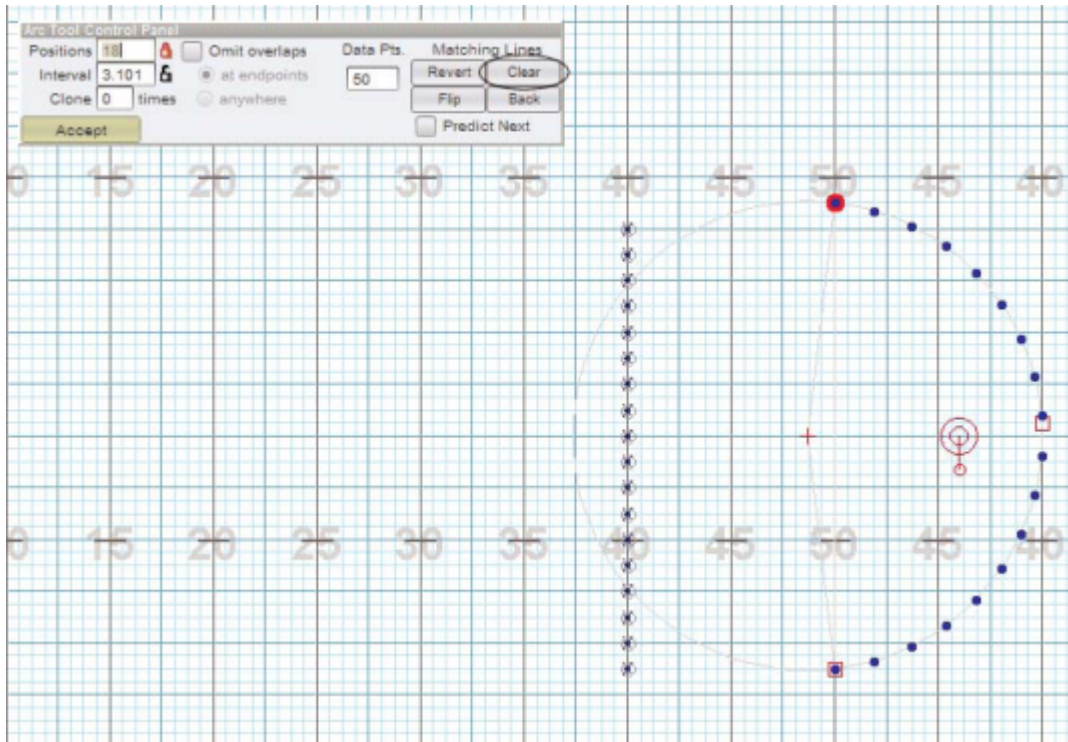


Sometimes 3D's prediction starts off well but goes astray. When that happens you can use the **Back** button to back up one match at a time. Once you get accustomed to 3D's prediction logic, you may find that combinations such as matching partly with **Predict Next** "on", then partly with **Predict Next** "off", will accomplish matching with the fewest steps.

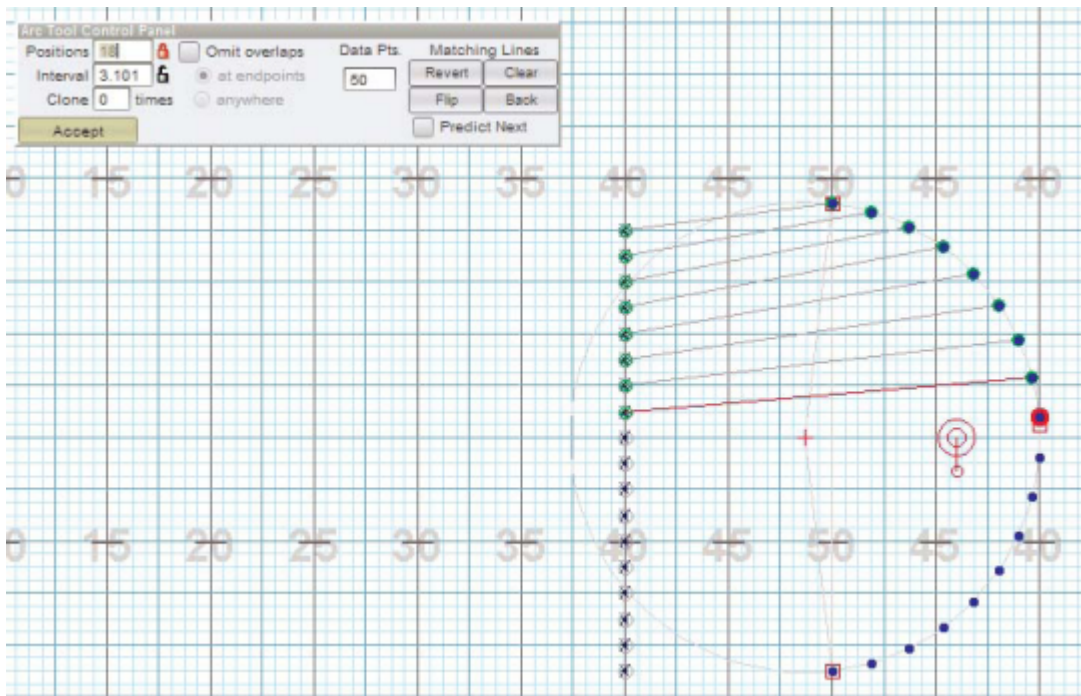
When the matching order follows no basic pattern that can be predicted by 3D, it is sometimes easier to just do the matching manually from scratch.

Turn off the **Predict Next** option.

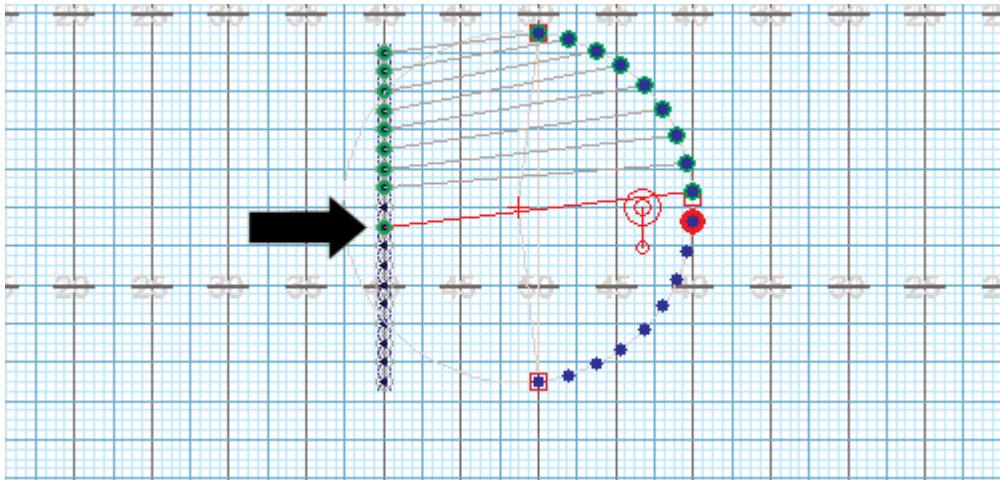
Click the **Clear** button to clear all of the matching lines and a red bubble will appear on top of the first new place.



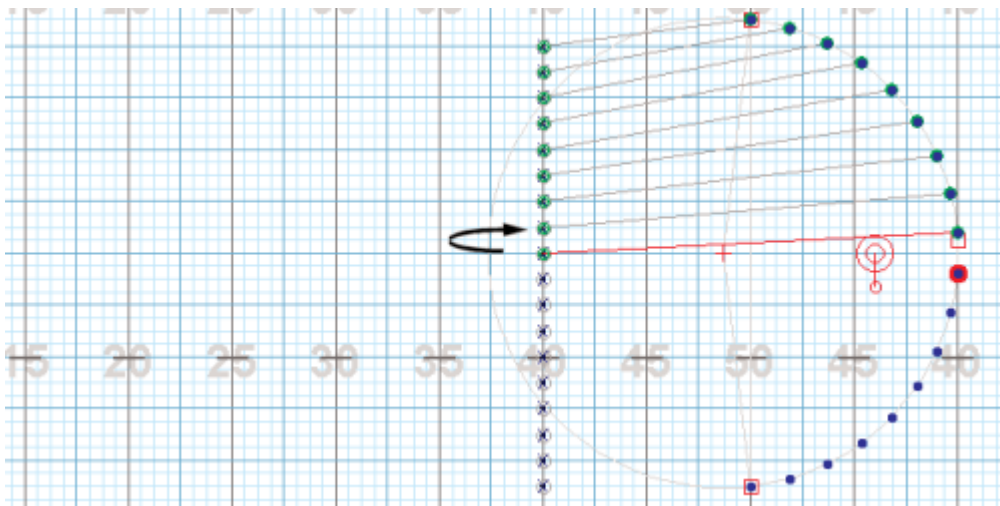
Click on the selected performer that identifies the new place marked with the red bubble. A match line will connect the performer with the new place.



The red bubble will move to the next place in the new shape. Matched Positions turn green to indicate they have been matched. Click on the selected performer that identifies this new place. Repeat this step for each new place.



If you make a mistake, click the **Back** button to back up one matched place. Another way to correct a mistake is to click on the matching line drawn over the incorrect performer and drag the line to the correct performer.



The [DOWN ARROW] key on the keyboard will advance the red bubble to the next new place. Likewise, the [UP ARROW] key will advance the red bubble to the previous new place. After pressing an arrow key, any matches done afterward will advance the red bubble in the same direction as the last arrow key press. Should the up/down arrow keys stop responding, click once in the Positions box.

At any time during the matching process the [Animation Controls](#) can be used to preview the transition in the drill.

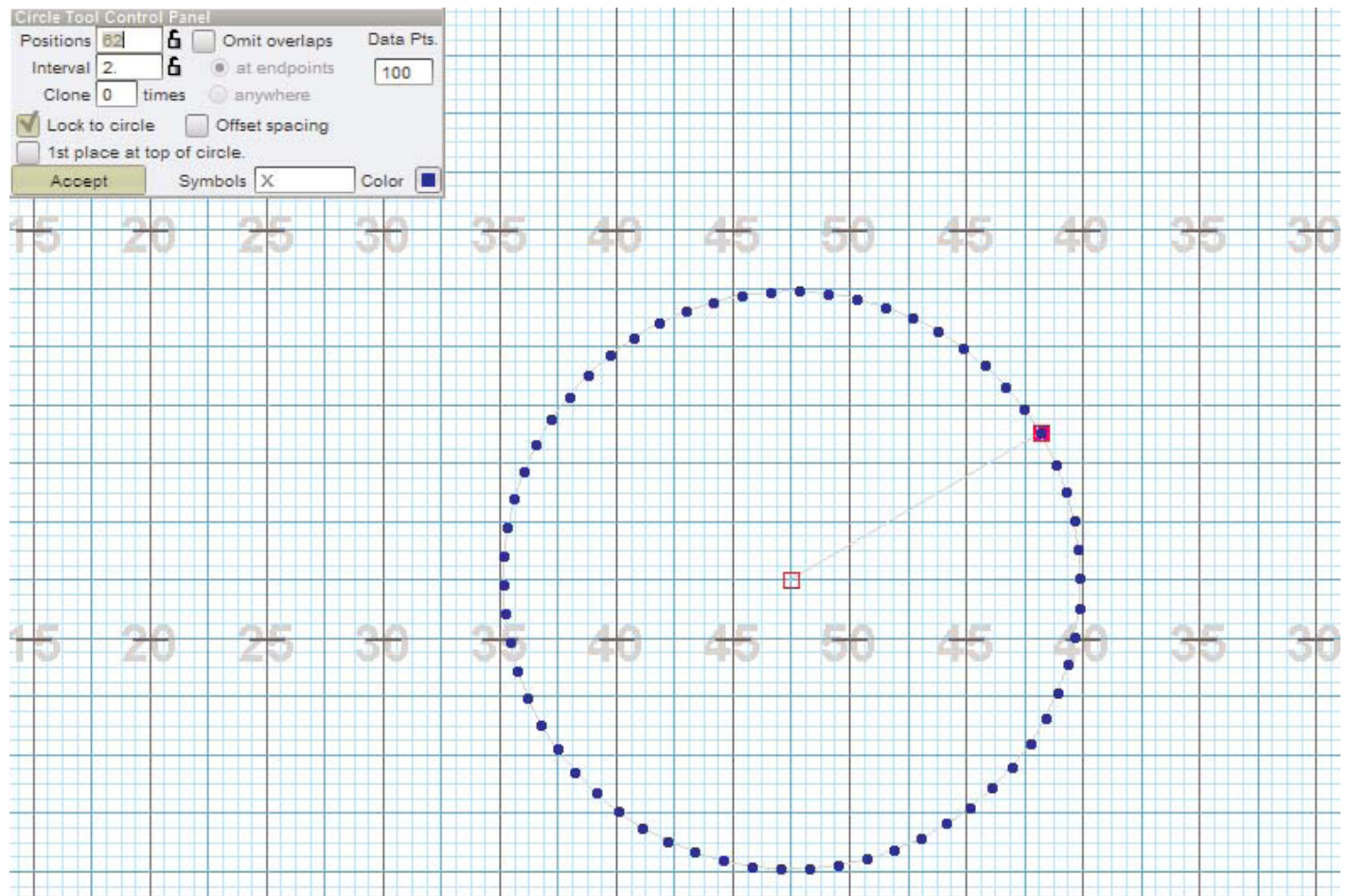
Circle Tool

The **Circle** tool is used to draw circles of various sizes.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the circle to be drawn. To transition EXISTING performers into a circle, move the **Red Anchor** to the count where the selected performers should “hit” the circle shape. Move the **Yellow Anchor** to the beginning count of the transition into the new circle. This is usually the previous set in the drill. Select the existing performers that will be moving into the circle using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Clicking on the **Circle** tool will display the **Circle Tool Control Panel**.



Drawing a Circle

The circle is drawn by clicking two points on the field display. The first click on the field will be the center point of the circle. The second click will be the first performers along the edge of the circle. The remaining performers will be drawn counter-clockwise from the first performer.

Circle Tool Control Panel Options

Many of the options in the **Circle Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Entering a number in the **Data Points** box will change the number of points in the circle. This is useful to create different shapes. For example, 3 data points creates a triangle, 4 would create a rectangle, and 5 data points would create a pentagon.

The **Offset Spacing** option will offset the first performer of the circle by half the interval. This is useful when you want an equal number of performers on each side of a yard line. Place the circle edge handle on the yard line and the performers will be spaced equally on each side of the line.

The **Lock to Circle** option will create a circle. Turning off this option will create an oval shape. When creating an oval there will be two **Editing Handles** which are used to define the inner size and outer size of the oval. Should you want to rotate the oval, use the **Rotation Arm** of the **Reposition Handle** located at the center of the oval.

The **First Place at Top of Circle** will make the matching order begin at the top of the circle. This can be aid in making matching of the circle easier.

Point Tool

The **Point** tool is used to add performers one at a time.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the point(s) to be entered. To transition EXISTING performers into the point(s), move the **Red Anchor** to the count where the point(s) should be drawn. Move the **Yellow Anchor** to the beginning count of the transition into the new point(s). This is usually the previous set in the drill. Select the existing performers that will be moving into the point(s) using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Clicking on the **Point** tool will display the **Point Tool Control Panel**.



Drawing Points

For NEW performers, each click on the field will add a performer at the exact spot on the field you clicked. To transition EXISTING performers into points, with the existing performers selected, open the Point tool. Add a click anywhere on the field for each selected position. Performers will be automatically matched to each point on the field you add.

Point Tool Control Panel Options

Many of the options in the **Point Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Arc Tool

The **Arc** tool creates an arc shape.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the arc to be drawn. To transition EXISTING performers into an arc, move the **Red Anchor** to the count where the selected performers should “hit” the arc shape. Move the **Yellow Anchor** to the beginning count of the transition into the new arc. This is usually the previous set in the drill. Select the existing performers that will be moving into the arc using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.

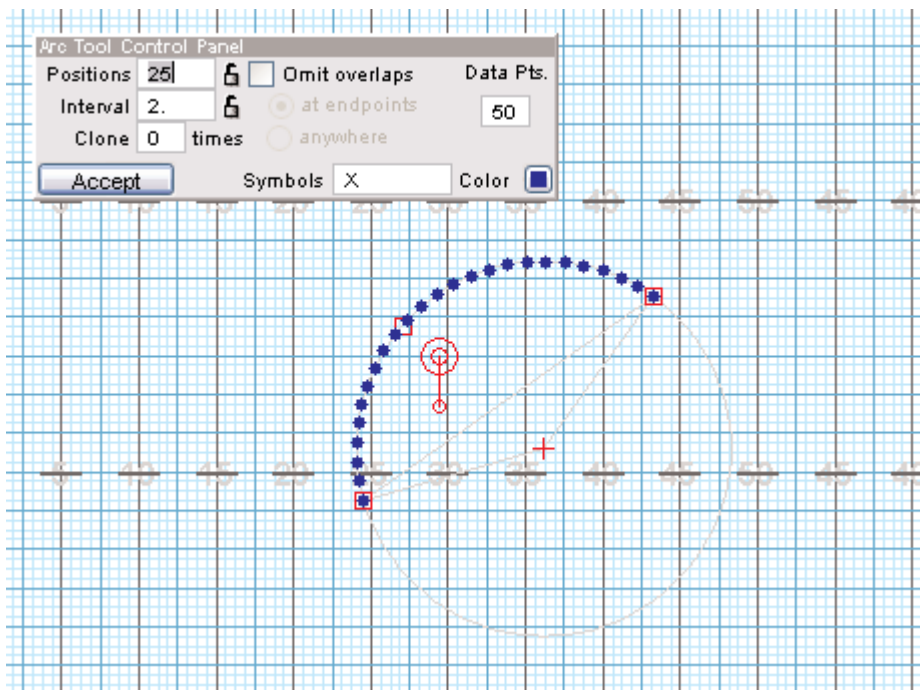


Clicking on the **Arc** tool will display the **Arc Tool Control Panel**.



Drawing an Arc

An arc is drawn by clicking three points on the field display. The first click on the field is the first endpoint of the arc. The second click on the field is the second endpoint of the arc. The third click on the field is a point along the edge of the arc.



Arc Tool Control Panel Options

Entering a number in the **Data Points** box will change the number of points in the arc. This is useful to create different shapes. For example, 3 data points will create a wedge.

Many of the options in the **Arc Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

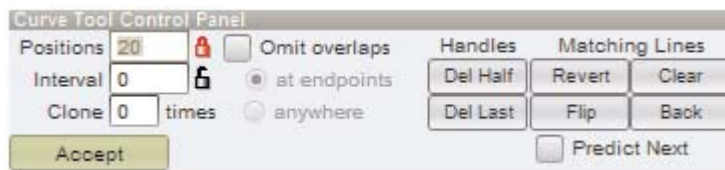
Curve Tool

The **Curve** tool is used to create curvilinear shapes, both symmetrical and asymmetrical.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the curve to be drawn. To transition EXISTING performers into a curve, move the **Red Anchor** to the count where the selected performers should “hit” the curve shape. Move the **Yellow Anchor** to the beginning count of the transition into the new curve. This is usually the previous set in the drill. Select the existing performers that will be moving into the curve using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Clicking on the **Curve** tool will display the **Curve Tool Control Panel**.

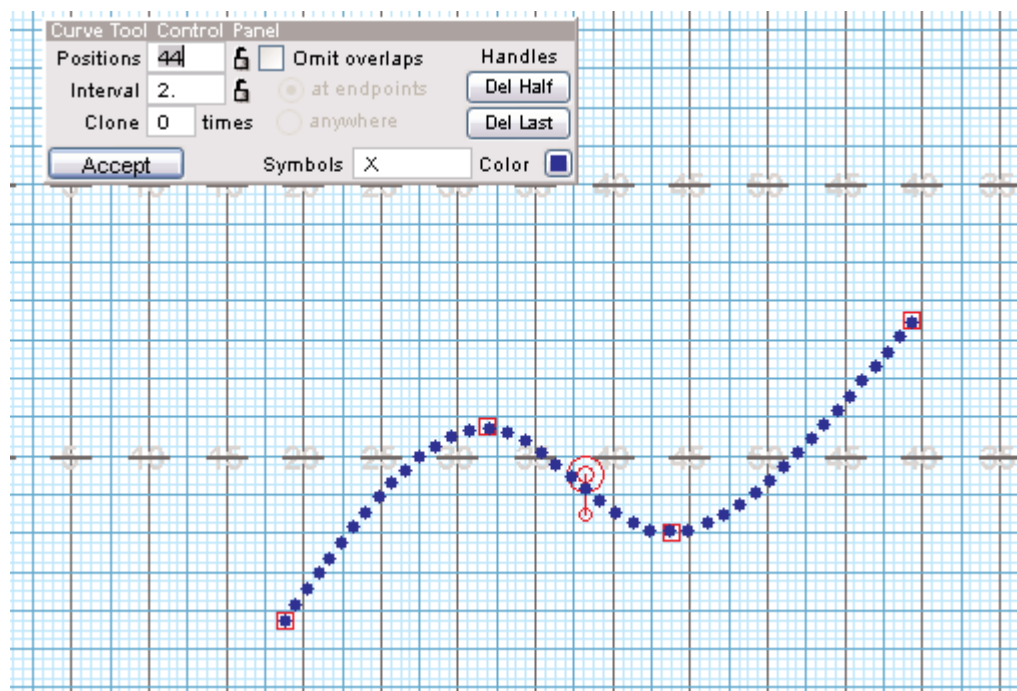


Drawing a Curve

The curve is drawn by clicking three or more points on the field display. The first click on the field is the first endpoint of the curve. Each consecutive click on the field will continue the curve shape, adding an editing handle for every click. You can use these handles to further modify the shape of the curve.



The less points you have on the curve, the smoother it will be.



Curve Tool Control Panel Options

The **Del Last** button is used to remove the last entered point when creating the curve.

The **Del Half** button is used to reduce the number of points entered in half by deleting every other point entered on the field. This is useful if you have too many points to form a smooth curve.

Many of the options in the **Curve Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Free Form Tool

The **Free Form** tool allows you to draw freely without the restriction of a certain shape. This tool would be most similar to a paintbrush/pencil/pen tool of graphic design applications.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the free form shape to be drawn. To transition EXISTING performers into a free form shape, move the **Red Anchor** to the count where the selected performers should “hit” the free form shape. Move the **Yellow Anchor** to the beginning count of the transition into the new shape. This is usually the previous set in the drill. Select the existing performers that will be moving into the free form shape using a [Selection Tool](#). See

the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



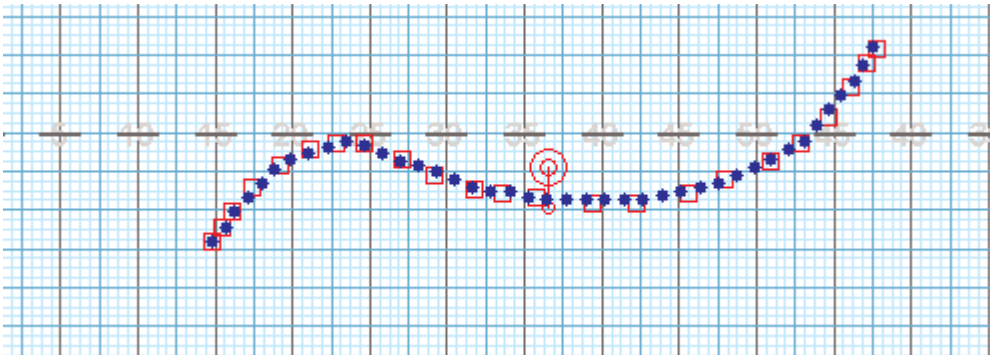
Clicking on the **Free Form** tool will display the **Free Form Control Panel**.



Drawing a Free Form Shape

The free form is drawn by clicking points on the field display. The first click on the field is the first endpoint of the free form. The second click on the field places an **editing handle** at the second point of the free form shape. By continuing to click on the field you add more **editing handles** that extend the shape.

You could also draw a free form shape by continuously holding the mouse button while moving the mouse across the field.



Free Form Tool Control Panel Options

Edit Handle Spacing allows you to adjust the frequency that new editing handles (red box) are added to a shape while drawing. For example, if you enter "2" in the **Edit Handle Spacing** box, while using the **Free Form** tool, an edit handle will appear every two yards on the shape you create.

The **Del Last** button is used to remove the last entered point when creating the free form.

The **Del Half** button is used to halve the number of points entered by deleting every other point entered on the field. This is useful if you have too many points to form a smooth shape.

Many of the options in the **Free Form Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Filled Shape Tool

The **Filled Shape** tool creates filled shapes. These shapes can have any number of sides. Typically, the Filled Shape tool is used to fill rectangles and triangles.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the filled shape to be drawn. To transition EXISTING performers into a filled shape, move the **Red Anchor** to the count where the selected performers should “hit” the filled shape. Move the **Yellow Anchor** to the beginning count of the transition into the new shape. This is usually the previous set in the drill. Select the existing performers that will be moving into the shape using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Clicking on the **Filled Shape** tool will display the **Filled Shape Tool Control Panel**.



Drawing a Filled Shape

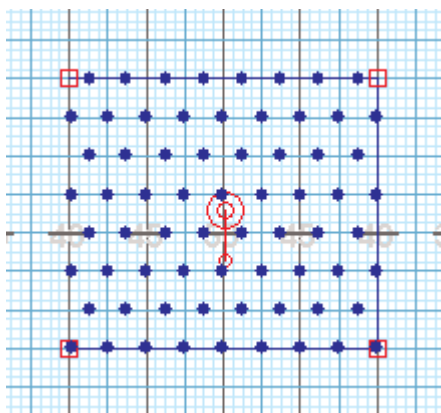
The filled shape is created by clicking three or more points on the field display. For example, the first click on the field could be the first point of the first side of a multi-sided block. The second click on the field finishes the first side and starts the next side and so on. A filled form can have as many sides as you prefer.

Filled Shape Tool Control Panel

Entering a value in **Positions** will lock the positions box to the value entered. If both of the **Horizontal** and **Vertical** boxes are locked, one will be unlocked automatically in order to adjust the intervals to maintain the value entered for positions. If the shape of the block is such that the positions value can not be maintained with reasonable intervals, a message will appear above the **Accept** button in the **Control Panel**.

Entering a value in both **Horizontal** and **Vertical** intervals will unlock (if locked) the positions value. The value in the positions box will be calculated to maintain the intervals entered.

Stagger will stagger the spacing of each row in the block.



Show Bridges shows the matching lines when a block is entered as a “transition”.

Del Last will remove the last editing handle entered.

Many of the options in the **Filled Shape Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Block Tool

The **Block** tool quickly creates block and rhombus shapes from user defined lines. To open the **Block** tool, select the tool from the [Tool Palette](#). This will open the **Block Tool Control Panel**.

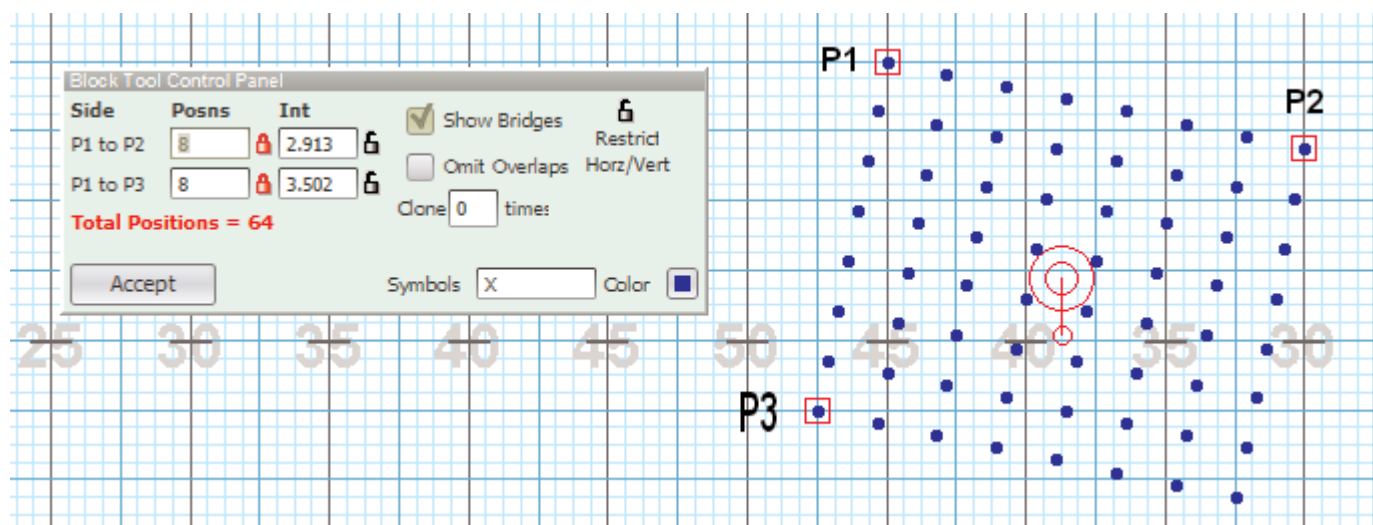
For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the block to be drawn. To transition EXISTING performers into a block, move the **Red Anchor** to the count where the selected performers should “hit” the block shape. Move the **Yellow Anchor** to the beginning count of the transition into the new block. This is usually the previous set in the drill. Select the existing performers that will be moving into the block using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Drawing a Block

Using the **Block** tool is quite simple. In the following example, let's say we want a 64 performer block. Enter the number of performers you would like for one side of the block (since we want 64 performers, this would be 8) in the Control Panel in the **P1 to P2** box. Do the same for the second side (once again, this would be 8) in the **P1 to P3** box.

Click three positions on the field. The first click would be **P1**, the second click **P2**, and the third click would be **P3**. The **Block** tool will automatically create a block based off the numbers you input for the sides, and where you clicked on the field. Since each click you placed on the field is an **edit handle** for the block, you may adjust the size by maneuvering one of the edit handles, or location by moving the **Reposition Handle**.



Many of the options in the **Block Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Bezier Curve Tool

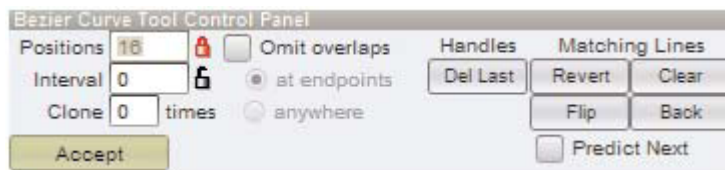
The **Bezier Curve** tool will create a bezier curve. Think of the Bezier Curve tool as a more sophisticated [Curve tool](#), with more control over curvature, especially at endpoints.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the curve to be drawn. To transition EXISTING performers into a curve, move the **Red Anchor** to the count

where the selected performers should “hit” the curve shape. Move the **Yellow Anchor** to the beginning count of the transition into the new curve. This is usually the previous set in the drill. Select the existing performers that will be moving into the curve using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.

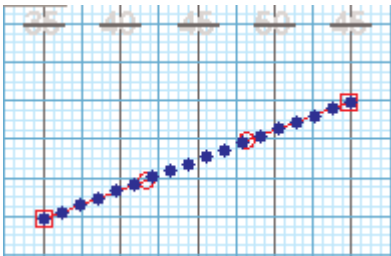


Clicking on the **Bezier Curve** tool will display the **Bezier Curve Control Panel**.

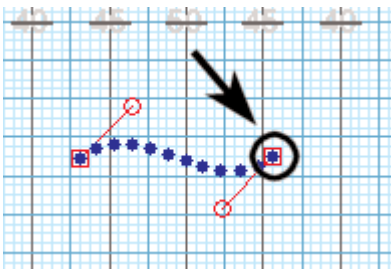


Drawing a Bezier Curve

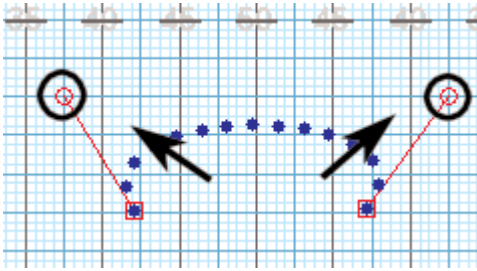
The curve is drawn by clicking two or more points on the field display. The first click on the field is the first endpoint of the curve. The second click on the field develops the curve initially as a line. The ends of the line have **editing handles**.



Dragging the red square in the editing handle will move the endpoints.



Dragging the red circle extending from the square handle will shape the curve.



Many of the options in the **Bezier Curve Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.

Polygon Tool

The **Polygon** tool is used to create outlined polygon shapes.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the polygon to be drawn. To transition EXISTING performers into a polygon, move the **Red Anchor** to the count where the selected performers should “hit” the polygon shape. Move the **Yellow Anchor** to the beginning count of the transition into the new shape. This is usually the previous set in the drill. Select the existing performers that will be moving into the polygon using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Clicking on the **Polygon** tool will display the **Polygon Tool Control Panel**.



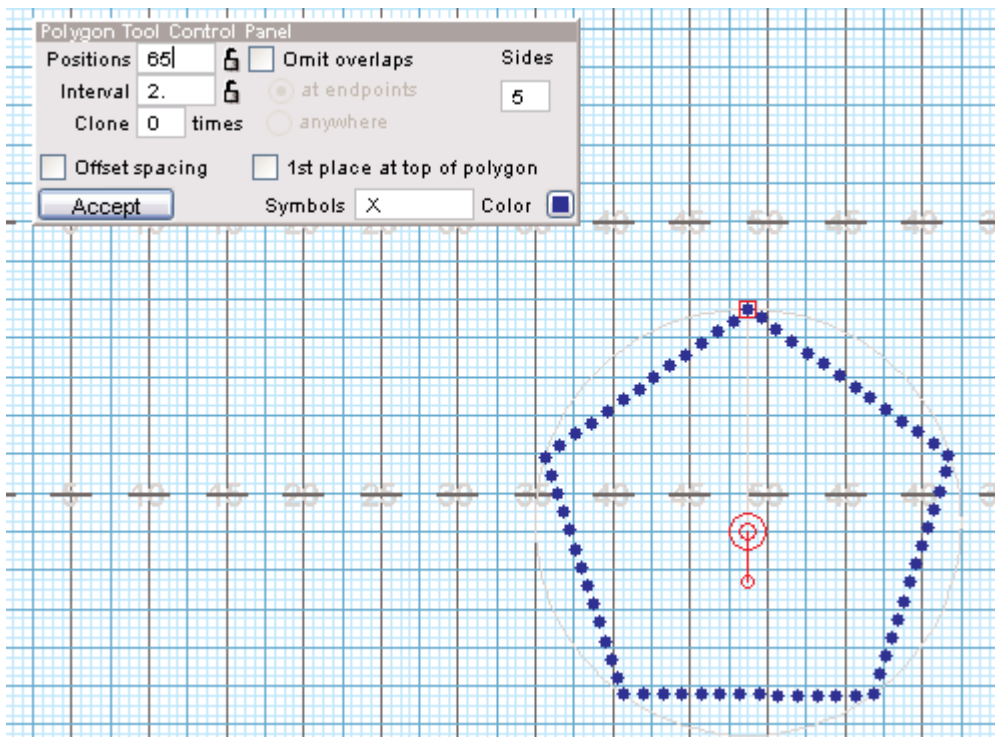
Drawing a Polygon

The **Polygon** tool operates similar to the [Circle](#) tool. Use the **Sides** text box to enter the number of sides on the polygon. Polygons are drawn by clicking two points on the field display. The first click on the field will be the center point of the polygon. The second click will be one of the performers furthest from the center of the

polygon (a corner). The remaining performers will be drawn in automatically, depending on the number of sides you specified. You can change the number of sides of the Polygon before committing the form to drill.

Polygon Tool Control Panel

Many of the options in the **Polygon Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.



Selection, Adjustment, Regrouping Tools

Many tools used to design drills work with existing shapes. In order to use these tools that modify existing shapes, one must select the performers that will be edited. That process is called “selection” and is accomplished using **Selection** tools. This section covers using all **Selection** tools: the [Pointer tool](#), the [Box Selection tool](#), the [Lasso tool](#), the [Spotlight Selection tool](#), and the [Profile Selection tool](#).

Adjustment tools are used to make quick adjustments in the transition and placement of formations. The adjustment tools include the [Snap To](#) and [Adjust To](#) functions.

You’ll find that while designing it is often quite useful to cut or split a shape into smaller shapes, or combine two or more shapes into larger shapes. For example, imagine an arc splitting into thirds and each third floating into one of three lines. To make the editing easier, we would first want to split the arc into three parts. That can be done using the [Knife](#) tool. After cutting the arc, we can select one part of the arc independently of the others. We would then select the first part of the arc and morph it into a line, and repeat the process for the remaining parts. The process of splitting and combining performers is called “regrouping” and is done using the **Regrouping** tools. This section covers using the **Regrouping** tools: the [Knife](#) and [Glue](#) tool.

Click on the arrow next to **Selection, Adjustment, Regrouping Tools** in the Table of Contents to the left to expand this section and begin.

Pointer Selection Tool

The **Pointer Selection** tool is the basic tool for selecting shapes. This tool is used to quickly select all of the performers of a shape.

The **Pointer Selection** tool only selects whole shapes. In other words, when you use the **Pointer Selection** tool you will get ALL of the performers in a shape. If you only want to select a portion of the performers in a shape, other selection and regrouping tools will be used.



To select the **Pointer Selection** tool, click on the **Pointer** tool on the [Tool Palette](#).

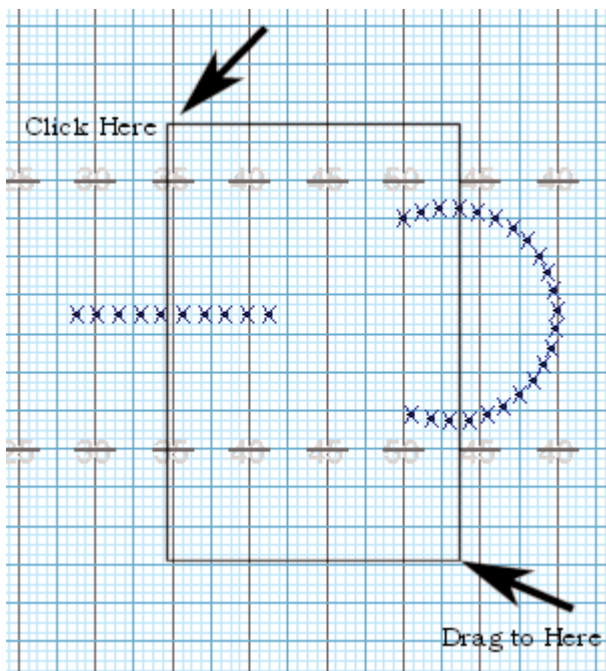


Double-clicking on the **Pointer** tool on the **Tool Palette** is the same as choosing Select Recent from the **Edit** menu.

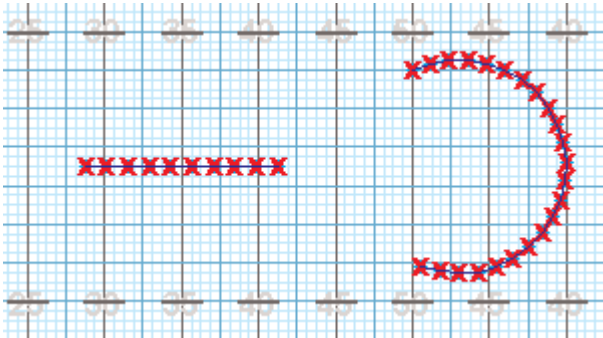
Clicking on a shape on the field will select all of the performers of the shape. When only one shape is selected, the [Console](#) will display the **Average Interval** of the selected shape in steps.

To add another shape to the selection, hold the [SHIFT] key and click on another shape. Similarly, to remove a shape from the selection, hold down [SHIFT] and click on the shape you wish to deselect.

With the **Pointer Selection** tool activated, dragging across performers on the field selects all of the shapes that have performers found within the drag region.



Even if you only catch one performer within the drag region, the entire shape that the performer is a member of is selected.



Holding down [SHIFT] while dragging across performers will add the shapes of the performers falling inside the drag region to the selection.

Clear a Selection

Click anywhere on the field (but not a performer!) to clear a selection.

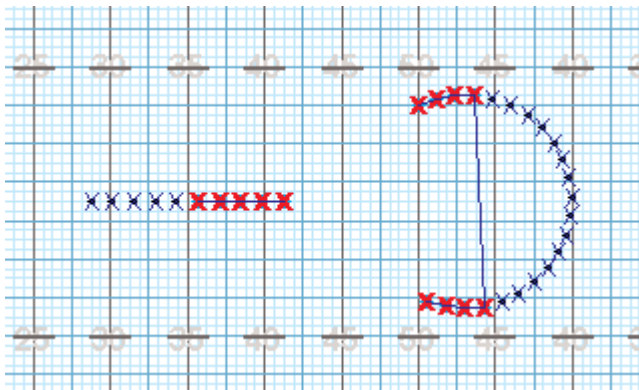
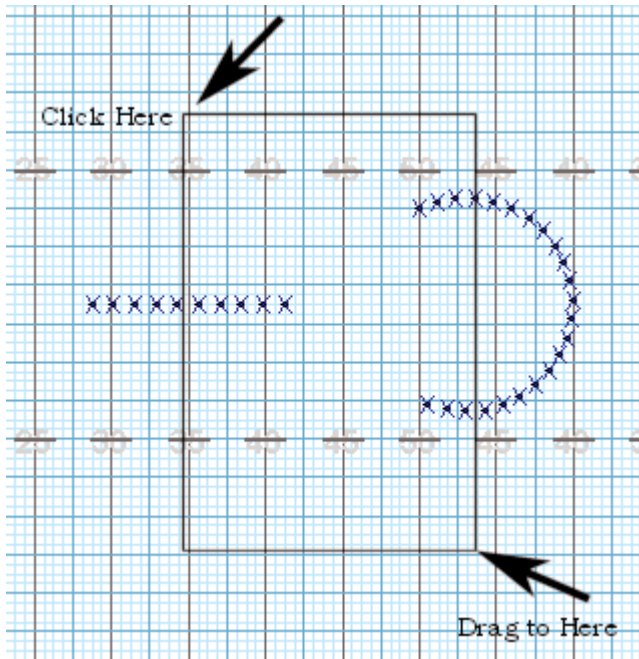
Box Selection Tool

The **Box Selection** tool is used to select a group of performers by dragging a selection box around the performers. Unlike the [Pointer Selection](#) tool where whole shapes are selected, the **Box Selection** tool is capable of selecting portions of a shape. When using the **Box Selection** tool all performers that are included in the boxed area (drag region) are selected.



To select the **Box Selection** tool, click on the **Box Selection** tool on the [Tool Palette](#).

With the **Box Selection** tool selected, clicking and dragging a boxed region around the performers will select the performers inside the drag region.



Holding down the [SHIFT] key while dragging the boxed region around unselected performers adds the performers to the selection. Likewise, holding down the [SHIFT] key while dragging around selected performers removes them from the selection.

Clicking on the field but not on a performer clears the selection.

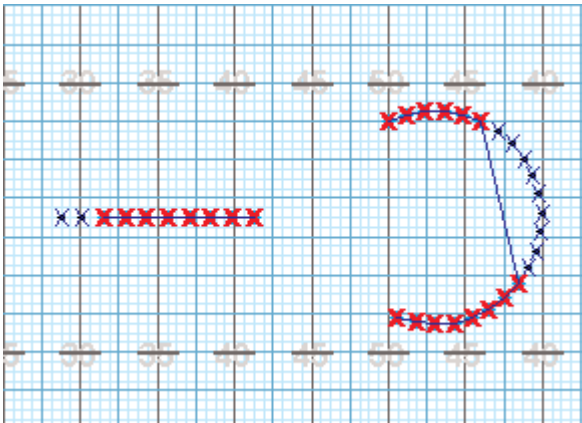
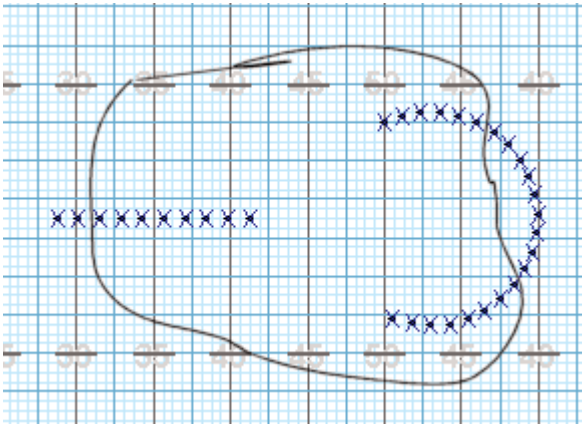
Lasso Selection Tool

The **Lasso Selection** tool is used to select a group of performers by drawing a line around the performers. Unlike the [Pointer Selection](#) tool, the **Lasso Selection** tool is capable of selecting portions of a shape. When using the **Lasso Selection** tool all of the performers found within the lasso region are included in a selection.



To select the **Lasso Selection** tool, click on the **Lasso Selection** tool on the [Tool Palette](#).

Clicking and dragging a line around the performers will select them.



Holding down the [SHIFT] key while dragging the line around unselected performers adds the performers to the selection. Likewise, holding down the [SHIFT] key while dragging a line around selected performers removes them from the selection.

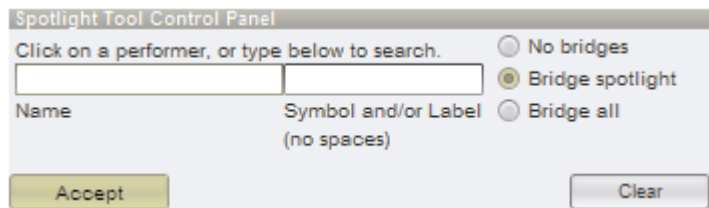
Clicking on the field but not on a performer clears the selection.

Spotlight Selection Tool

The **Spotlight Selection** tool is used to select and highlight a position to help a performer watch their movement while animating a drill.



To select the **Spotlight** tool, click on the **Spotlight** tool on the [Tool Palette](#) and the **Spotlight Tool Control Panel** will display.



To spotlight a position, you can either type in the position's **Name**, **Symbol**, and/or **Label**.

There are options that allow you to see the bridges or paths that the positions will take to go to their next location.

The **No Bridge** option will not display bridges or paths.

Bridge Spotlight will display the spotlight position's bridge or path.

Bridge All will show bridges or paths of all positions visible on the design grid.

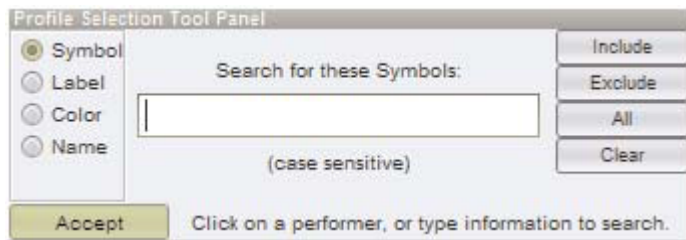
Clear remove the spotlight from the display and resets the **Spotlight Tool Control Panel**.

Profile Selection Tool

The **Select by Profile** tool is for selecting performers by **Color**, **Label**, **Symbol**, or **Name**. This tool is used to quickly select groups of performers with similar characteristics.

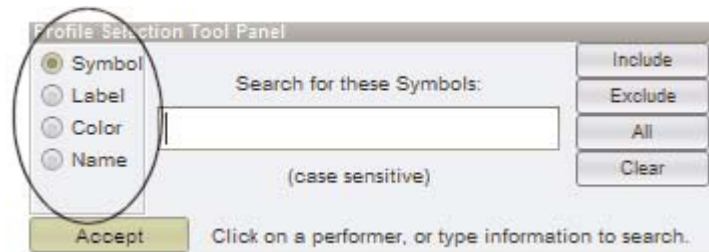


To select the **Profile Selection** tool, click on the **Profile Selection** tool on the [Tool Palette](#) and the **Profile Selection Control Panel** will appear.

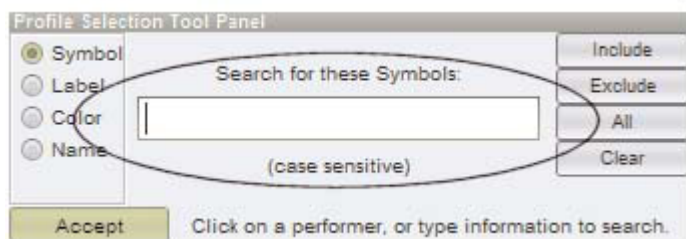


Selecting by Profile

Click on the filter to use when searching for performers you wish to select (or deselect). For example, if all of the performers you want selected are drawn in purple symbols, then you would click on the **Color** filter to search by color. If all trumpets are the symbol "T", then click the **Symbol** filter to search by symbol.



After selecting the filter, enter a search value in the **Search for...** box. The performers matching that filter value will be highlighted with red boxes. As a shortcut, you can also click on a performer on the screen that has the search value and it will be entered for you. For example, when searching for a color, click on a red performer and all of the red performers will be highlighted.



If the highlighted performers (performers in red boxes) are performers that you want to include in the selection, click **Include**. The selection will be modified. All performers in the selection will be marked with a red dot.

You can repeat the process of picking a filter, entering a filter value, then clicking **Include** (or **Exclude**).

The buttons **Include**, **Exclude**, **All**, **Clear** are used to modify the current selection with the highlighted performers.

Include will include the highlighted performers in the current selection.

Exclude will remove the highlighted performers from the current selection.

All will add all performers to the current selection.

Clear will remove all performers from the current selection.

You can use combinations of these buttons to modify your selection.

For example, let's say you want to select all trumpet players. Let's assume the trumpet and trombone players are both labeled, T1, T2, etc. Also, the upper brass are colored red and the lower brass are colored blue. If we search by labels starting with "T" we will get both trumpets and trombones. Likewise, if we search for upper brass we will get all the upper brass instruments including the trumpets. Here's the solution:

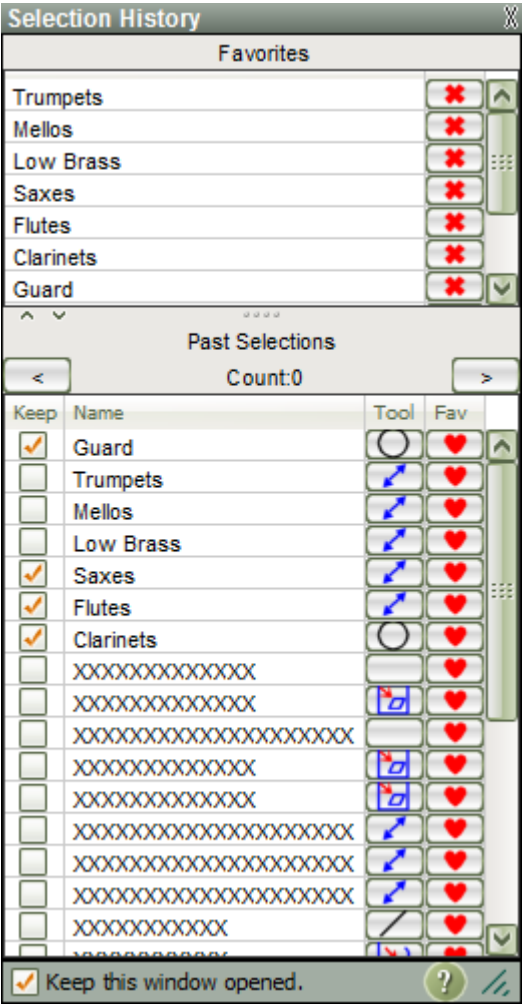
- Search for labels starting with "T" to highlight both trumpets and trombones.
- Click **Include** to include both trumpets and trombones in the selection.
- Search for performers with the color "Blue" to highlight the trombones as well as the other lower brass instruments.
- Click **Exclude** to remove the lower brass instruments from the current selection, therefore leaving only the trumpets selected.

Selection History Tool

The **Selection History** tool is a selection tool that has a memory of previous selections of grouped performers. To access the tool, select the tool from your [Tool Palette](#).



This will open the **Selection History** window. This window is comprised of two portions: the **Favorites** list and **History** list.



History List

The **History** list is populated with selections that were used with an editing or drawing tool. Selections are remembered per set, per drill and saved with drill files.

The **History** list keeps 16 of the most current selections in the list. When more than 16 selections have been made on a set, the most recent will be kept, and those furthest back will be pushed off the list.

To keep a selection in the **History** list remembered, select the **Keep** check box for that selection. This will keep that particular selection available at the top of the **History** list on that particular page.

Favorite List

Select the **Favorite** option for quick access to the grouped selection at any point in the drill. Selections that have been added to the **Favorites** list will be accessible on any page of the drill.

Any selections can be renamed by clicking under the **Name** column for the particular selection you would like to rename.

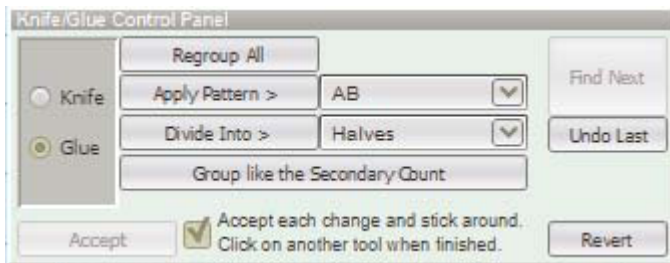
Selecting the **Tool** button for a grouped selection will highlight the selected performers and open the tool's control panel for the tool that was used.

Glue Regrouping Tool

The **Glue Regrouping** tool is used for combining two or more shapes into single shapes. For example, imagine three lines floating into a curve. To make the editing easier, we would first want to glue the three lines into a single shape using a **Glue** tool. After gluing, we can select all three lines at one time as a single shape. We would then simply morph the selection into a curve.

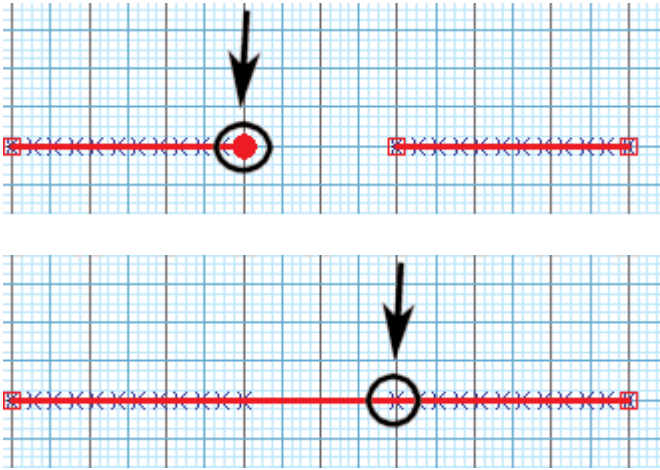


To select the **Glue** tool, click on the **Glue** tool and the **Glue Tool Control Panel** will display.



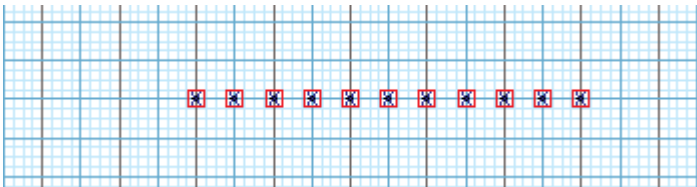
The **Glue Tool Control Panel** behaves differently from other tool panels. By default, there is no active **Accept** button. Every glue with the glue tool is accepted without having to click the **Accept** button. This is usually preferred because the **Glue** tool is used quite frequently for single glues. Requiring the click of the **Accept** button would simply add an unnecessary step. However, if you want to make the **Glue Tool Control Panel** behave like typical 3D Control Panels, click off the **Accept each change and stick around...** option. When this option is off, the **Accept** button will be available and if not clicked when you are finished gluing, then no changes will occur.

To perform a glue between two highlighted shapes, click on the performers on each end of the two shapes.



The **Glue** tool can be switched to the [Knife](#) tool by clicking on the **Knife** option.

Regroup All button will break all of the performers in the highlighted shape(s) into individual points. After the performers are broken up, you can reconnect the performers in a different order. Normally this is not used when all of the shapes of a page are highlighted. To highlight a smaller group of performers, select the group prior to clicking on the **Glue** tool. The **Regroup All** option is commonly used to change the grouping order of block shapes as shown.



You can click and drag (much like mimicking a “Gluestick”) through performers, and the grouping will be assigned based on the order you drag over a performer. Regroup performers by clicking on one endpoint (performer) of the form, then dragging through every other performer, in the order you wish them to be grouped in.

This method can also be used to regroup multiple forms. Once the last performer of a form is grouped, click on that performer. This releases the grouping option, at which point you can click on the starting performer for the new form, and repeat the process.

Apply Pattern is available when only one shape is highlighted. To highlight a single shape, use the [Pointer Selection](#) tool to select the shape prior to clicking on the **Glue** tool. To use **Apply Pattern**, select a pattern from the pop up menu, and click **Apply Pattern**. The “AB” pattern will regroup a shape where every other performer becomes a member of the first new shape and the remaining performers become members of a second new shape. It is difficult to see any change on the field display. The first new shape is almost directly over the second new shape.

Divide Into allows you to divide the selected shape into **Halves, Thirds, Quarters, Pairs, Groups of 4, 6, or 8**. Select the appropriate grouping you wish to apply from the drop down menu, then select **Divide Into**. If the **Accept each change and stick around...** checkbox is not checked, the new grouping will not take effect until you select the **Accept** button.

The **Find Next** button will find the next person in the direction the form has begun to be glued and then glue it to the end of the section. This function allows you to continue gluing a continuous line or form without requiring every position to be clicked on individually.

The **Undo Last** button will undo the last glue that was performed.

Revert button reverts the grouping order to its initial order.

Knife Regrouping Tool

The **Knife Regrouping** tool is used for cutting a shape into smaller pieces. For example, imagine an arc splitting into thirds and each third floating into one of three separate lines. To make the editing easier, we would first want to split the arc into three parts using the **Knife** tool. After cutting, we can select one part of the arc independently of the others. We would then select the first part of the arc and morph it into a line, then repeat the process for the remaining parts.



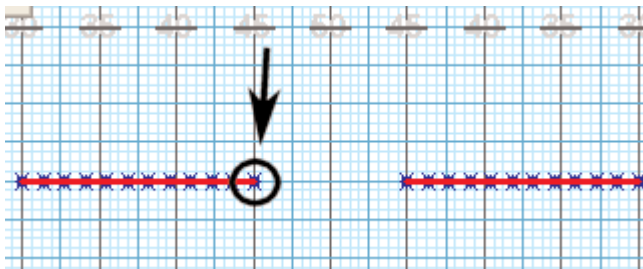
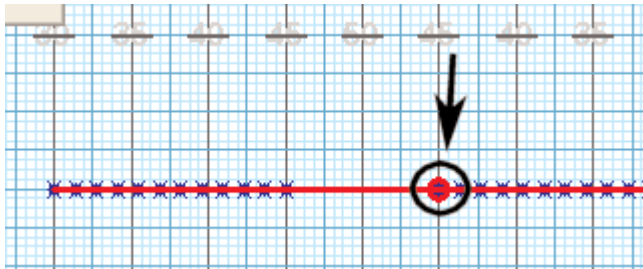
To select the **Knife** tool, click on the **Knife** tool and the **Knife Tool Control Panel** will display.



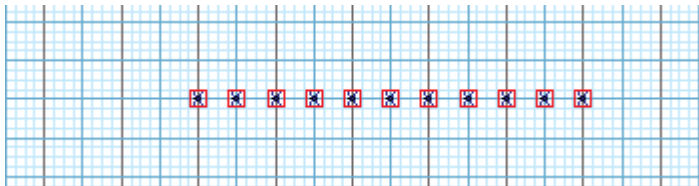
The **Knife Tool Control Panel** behaves differently from other tool panels. By default, there is no active **Accept** button. Every cut with the knife is accepted without having to click the **Accept** button. This is usually preferred because the **Knife** tool is used quite frequently for single cuts. Requiring the click of the **Accept** button would simply add an unnecessary step. However, if you want to make the **Knife Tool Control Panel** behave like typical 3D control panels, click of the **Accept each change and stick around...** option. When

the option is off, the **Accept** button will be available and if not clicked when you are finished cutting, then no changes will occur.

To perform a cut on a highlighted shape, click on the performers on each side of the cut location.



Regroup All will break all of the performers in the highlighted shape(s) into individual points. After the performers are broken up, you can reconnect the performers in a different order. Normally this is not used when all of the shapes of a page are highlighted. To highlight a smaller group of performers, select the group prior to clicking on the **Glue** tool. The **Regroup All** option is commonly used to change the grouping order of block shapes as shown.



Apply Pattern is available when only one shape is highlighted. To highlight a single shape, use the [Pointer Selection](#) tool to select the shape prior to clicking on the **Knife** tool. To use **Apply Pattern**, select a pattern from the pop up menu, and click **Apply Pattern**. The AB pattern will regroup a shape where every other performer becomes a member of the first new shape and the remaining performers become members of a second new shape. It is difficult to see any change on the field display. The first new shape is almost directly over the second new shape.

Divide Into allows you to divide the selected shapes into **Halves**, **Thirds**, **Quarters**, **Pairs**, **Groups of 4**, **6**, or **8**. Select the appropriate grouping you wish to apply from the drop down menu, then select **Divide Into**. If

the **Accept each change and stick around...** checkbox is checked, the new grouping will not take effect until you select the **Accept** button.

The **Undo Last** button will undo the last knife that was done.

Revert button reverts the grouping order to its initial order.

Snap To Editing Tool

This function snaps the selected performers to the nearest whole, half or quarter step. Choosing **Snap To** from the **Edit** menu will display the **Snap To** dialog where you can choose the snap to resolution.

At least one performer must be selected to use this function.



This is often used to firm up the positions of a block formation where all performers are a whole step interval from each other.

Adjuster Tool

The **Adjuster** editing tool is used for quickly moving and/or adjusting performers in shapes and transitions without having to first select the performers.

Using the Adjuster Tool

On the [Count Track](#), move the **Red Anchor** to the count of drill where the change of path adjustment will stop. Move the **Yellow Anchor** to the beginning of the transition where the path adjustment will start (usually the previous set).

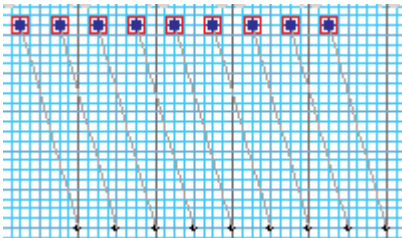
If you want to limit the adjustment function to a number of performers, select them first using one of the [Selection](#) tools. This is optional, however, as you can open the **Adjuster** tool without selecting anyone.



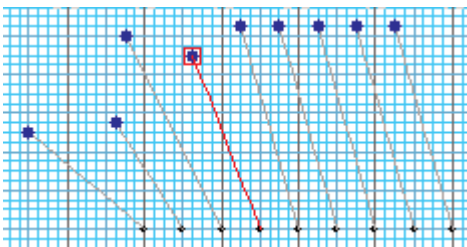
Click on the **Adjuster** editing tool or select **Adjust To** from the **Edit** menu and the **Adjuster Tool Control Panel** will appear.



If any performers were selected when starting the Adjuster tool, red editing handles will appear over each performer. If you want to move them all, click and drag on one of the editing handles and they all will move.



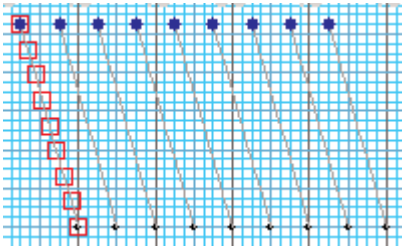
If you want to move only one individual, click **Deselect** if any performers are selected to remove all of the editing handles, then click and drag any single performer.



If you want to move a few performers at the same time, hold [SHIFT] and click on each performer until a red editing handle appears over every performer you wish to move, then drag one of them. The other performers will move similarly.

To edit individual steps of a performer's existing path, click **Edit Steps**. Editing handles will appear at each step of the selected performers. If you select more than one performer and edit a step of one performer, the

same step for the others will similarly move. Since an editing handle appears at each step, it may be necessary to zoom in to the area of the performer to drag the handles easily.



Show Paths shows all of the paths of the selected performers or the performer you are adjusting.

Show Symbols shows the symbols of the selected performers while you are adjusting.

Revert removes all changes made while adjusting and starts the **Adjuster** tool over.

Stride and **Distance** boxes show the current stride and distance of the performer whose location you are dragging.

Pace Tool



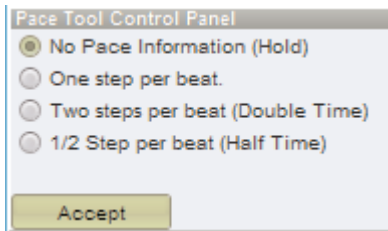
The Pace Tool is only available if the Real View is disabled, or any version prior to version 7. See the [Visuals Editor](#) for information on how to change pace if the Real View window is enabled.

The **Pace** tool is used during animation to show a performer moving in double time, half time, or regular time (one step per count). When a performer is marking time, the mark time pace is displayed by flashing the performer twice per beat for double time, once every other count for half time, once per beat for regular time, or no flashing at all for performers holding their position.

Move the **Red** anchor to the count of drill where the change of pace will stop. Move the **Yellow** anchor to the beginning of the transition where the change in pace will start (usually the previous set). Select the existing performers whose pace will be changing using a [Selection](#) tool such as the [Pointer](#) tool.



Click on the **Pace** tool and the **Pace Tool Control Panel** will be displayed.



Enter the pace change information and click **Accept**. You can preview the change by clicking on the **Play** (animation) button prior to committing the change.

Facing Tool

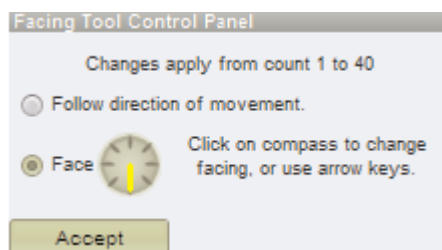


The Facing Tool is only available if the Real View is disabled, or any version prior to version 6. See the [Visuals Editor](#) for information on how to change performer facing if the Real View window is enabled.

The **Facing** tool enables you to change the performer's facing (or orientation) on the field. This is helpful to see a more realistic approach to what your drill would look like in the Perspective view.



Open the **Facing** tool by clicking on the **Facing** tool on the [Tool Palette](#). The **Facing Tool Control Panel** will appear.



To change the facing of a performer, select the “Face” radio button and click on the compass to determine which angle you would like the performer to face.

To change the facing of a group of performers, select the “Face” radio button and click on the compass to determine which angle you would like the group of performers to face.

The “Follow direction of movement” button automatically adjusts the selected performers to face the direction they are traveling for the entirety of the move.

To toggle facing on or off while designing, select the “Show/Hide facing” button above the console.

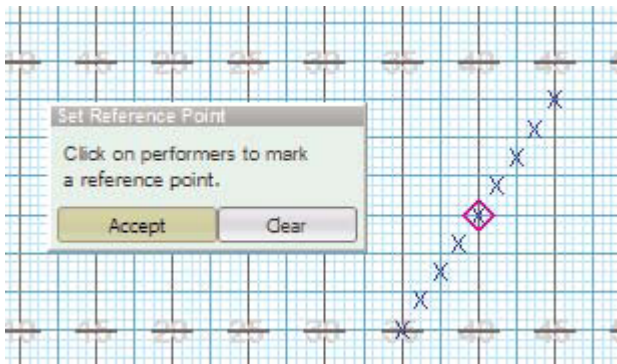


Set Reference Tool

The **Set Reference Tool** is used to indicate which performer(s) will be used as a reference point for adjusting or cleaning drill. To set a performer as a reference point, select the **Set Reference Tool** from the [Tool Palette](#).



Highlight a group of performers and select the **Set Reference Tool**. The **Set Reference Tool** control panel will open, and you may click on performers to set them as reference points. There is no limit to the number of reference point performers allowed.



Reference points will be displayed on the chart with a diamond around them, and their coordinate will be underlined on coordinate sheet print outs.

Editing & Maneuvering Tools

The tools in this section are called **Editing & Maneuvering** tools. these tools are used to reshape existing shapes displayed at the count indicated by the **Red Anchor** of the [Count Track](#). However, the power of these tools go much further than just editing a single count. These tools also create the transition to the count at the **Red Anchor** from the count at the **Yellow Anchor**. Typically the count at the **Yellow Anchor** is the count of the previous set you have completed.

For example, imagine you are working on Set #2 of your drill. Set #1 of your drill is at count 0 and Set #2 of your drill is at count 32. The **Yellow Anchor** is at count 0 and the **Red Anchor** is at count 32. **Editing & Maneuvering** tools will make changes to shapes at count 32 as well as create the transition between counts 0 to 32.

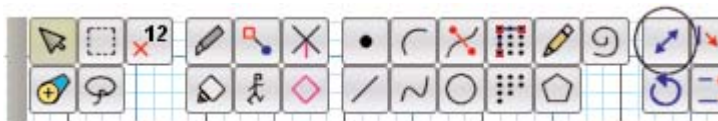
Editing & Maneuvering tools are always used on existing performers. Therefore, in order to make the **Editing & Maneuvering** accessible, you must select at least one performer on the field. Performers are selected with [Selection](#) tools such as the [Pointer](#) tool.

Click on the arrow next to **Editing & Maneuvering Tools** in the Table of Contents to the left to expand this section and begin.

Push Tool

The **Push** tool is used to relocate a selected shape in a straight line path from one point of the field to another without changing the form of the shape.

To establish the counts where the push transition is to begin and end in the drill, set the **Red Anchor** on the [Count Track](#) to the count where the push transition is to end. This is typically the count of the set you are currently working on. Set the **Yellow Anchor** to the count where the push transition is to begin. This is typically the previous set.

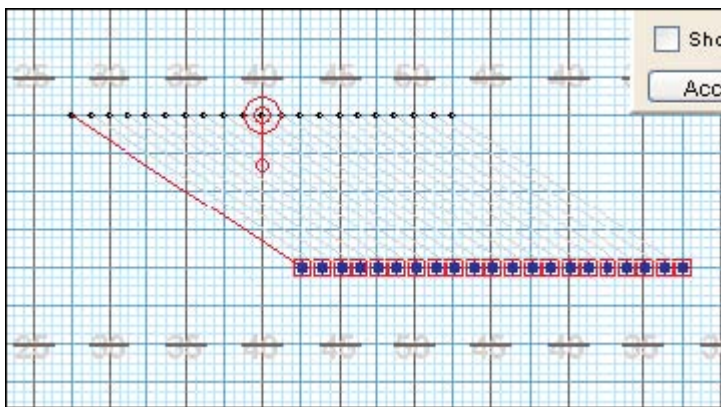


After selecting the shape or shapes that you want to push, clicking on the **Push** tool will display the **Push Tool Control Panel**.

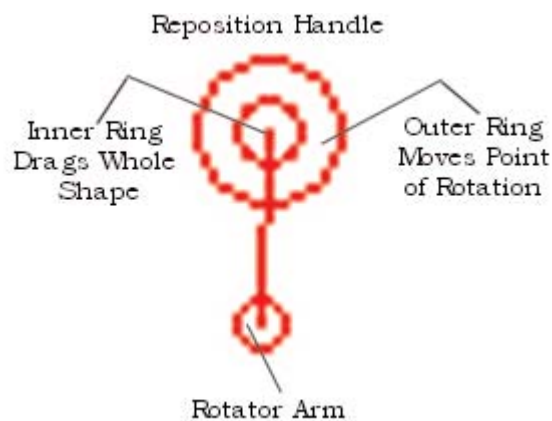


Using the Push Tool

Editing Handles appear on each selected performer. These handles can be moved across the field, which would move all performers to the final location of the push transition. While dragging the **editing handles** the location of the cursor is displayed in the [Console](#) as well as the **Largest Stride** and **Largest Distance**. The resolution of the cursor can be controlled by the whole, half, and quarter step switches on the [Console](#). The **Push Tool Control Panel** also displays the **Stride** and **Distance**.



A **Reposition Handle** will appear in the center of the selected performers. Dragging the center of the **Reposition Handle** is the same as dragging one of the performer handles. Dragging the **Rotator Arm** that extends from the **Reposition Handle** will rotate the shape. The point of rotation can be changed by dragging the outer ring of the **Reposition Handle** to a preferred location.



Use the **Arrow Keys** to shift and rotate forms easily without having to change tools or use the mouse. Moving forms with the **Arrow Keys** (without the modifier keys) is disabled in drawing tools, because this feature is primarily used for matching performers when regrouping. You can, however, use **Arrow Keys** to move the form when you have any editing tool open. Simply select the form you wish to move, select your editing tool, then move the form with your **Arrow Keys**.

[SHIFT][ARROW KEY] moves the center of the **Relocation Handle** and the selected form one step. This causes the new positions to shift similarly to the new location.

[CONTROL][ARROW KEY] rotates the **Relocation Handle** 5 degrees. This causes the new positions to rotate around the **Relocation Handle**.

Push Tool Control Panel Options

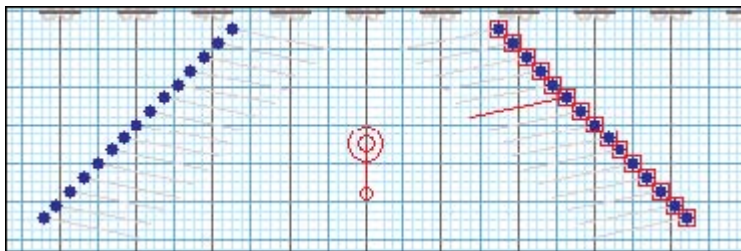
Entering a number in the **Stride** box will move the **editing handles** the correct distance to reflect the new stride.

Entering a distance in yards (or meters) in the **Distance** text box will move the **editing handles** to the distance entered.

Clicking a direction on the **Direction Compass** will move the **editing handles** to reflect the new direction.

Snap to Horz/Vert padlock will snap the handles to the nearest horizontal, vertical, or 45 degree direction.

Mirroring options are available if two or more shapes are selected. When mirroring, the direction of the shapes can be set to opposing horizontally, opposing vertically, or opposing both horizontally and vertically.



Show Symbols will display the position symbols instead of a plain dot.

Compound Move combines two maneuvers, such as a rotation & float, in to one transition. If the **Compound Move** option is not selected, the Push tool will overwrite the existing transition over the selected range.

Reset to Hold will reset the transition to a “hold” from the secondary count.

At any time the [Animation Controls](#) can be used to preview the change in the drill. Other useful options that can be accessed during the change are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

Accept commits the change to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

Fixed Interval Float Tool

The **Fixed Interval Float** tool is an editing tool that allows transitions to incorporate curved paths.



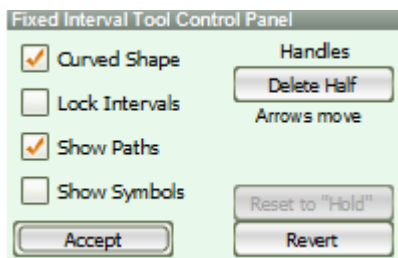
Since the **Fixed Interval Float** tool is an editing tool, performers must be selected in order to select the **Fixed Interval Float** tool on the [Tool Palette](#).

Using the Fixed Interval Float Tool

Once performers are selected, open the **Fixed Interval Float** tool. One performer will have a blue handle on top of them. This is the **Guide Performer Handle**. The performer with the **Guide Performer Handle** is the performer that all other performers reference to create curved pathways. Because of this, the performer indicated with the **Guide Performer Handle** will always take a straight line path to their destination.

The **Fixed Interval Float** tool operates much like the [Push](#) tool. You can maneuver the form by adjusting any of the **Edit Handles** or by moving the **Relocation Handle**.

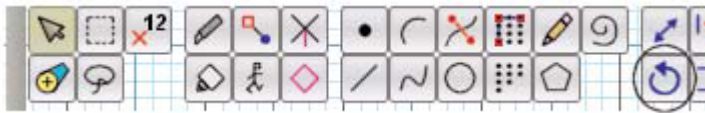
Fixed Interval Float Tool Control Panel Options



Rotate Tool

The **Rotate** tool is used to “gate” a selected shape around a point along curved paths.

To establish the counts where the rotate transition is to begin and end in the drill, set the **Red Anchor** on the [Count Track](#) to the count where the rotation is to end. This is typically the count of the set you are currently working on. Set the **Yellow Anchor** to the count where the rotation is to begin. This is typically the previous set.

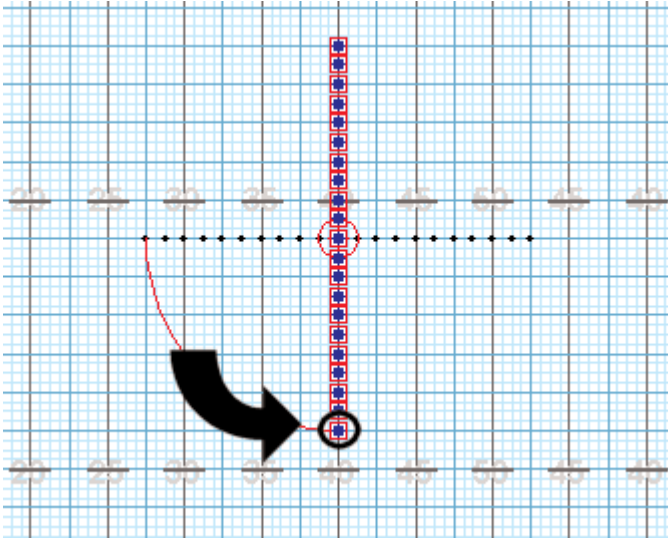


After selecting the shape or shapes that you want to rotate, clicking on the **Rotate** tool will display the **Rotate Tool Control Panel**.



Editing Handles appear on each selected performer. These handles can be dragged and thus rotating all performers to the final location of the rotation transition. While dragging the **editing handles** the location of the cursor is displayed in the [Console](#) as well as the **Largest Stride** and **Largest Distance**. The **Rotation Control Panel** also displays the angle of rotation.

A **Point of Rotation** handle will appear in the center of the selected performers. The **Point of Rotation** can be changed by dragging this handle to a preferred location.



Entering an angle in the **Rotation** text box will move the editing handles to reflect the angle entered.

Mirroring Options are available if two or more shapes are selected. When mirroring, the rotation of the shapes can be set to rotate on each shape's individual point of rotation. The rotation can be in the same or opposite directions.

Show Symbols will display the position symbols instead of a plain dot.

Reset to Hold – resets the transition to a “hold” from the secondary count.

Revert button resets the handles to their initial position.

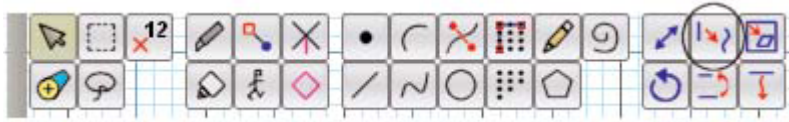
At any time the [Animation Controls](#) can be used to preview the change in the drill. Other useful options that can be accessed during the change are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

Accept commits the change to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

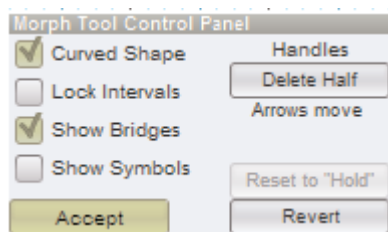
Morph Tool

The **Morph** tool is used to change the form of a selected shape. The transition creates a straight line path from the original shape to the morphed shape. This is the most widely used tool because it is so versatile.

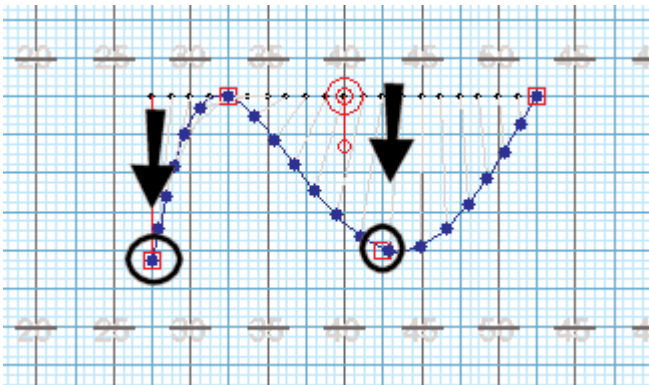
To establish the counts where the morphing transition is to begin and end in the drill, set the **Red Anchor** on the [Count Track](#) to the count where the morph is to end. This is typically the count of the set you are currently working on. Set the **Yellow Anchor** to the count where the morph is to begin. This is typically the previous set.



After selecting the shape or shapes that you want to morph, clicking on the **Morph** tool will display the **Morph Tool Control Panel**.



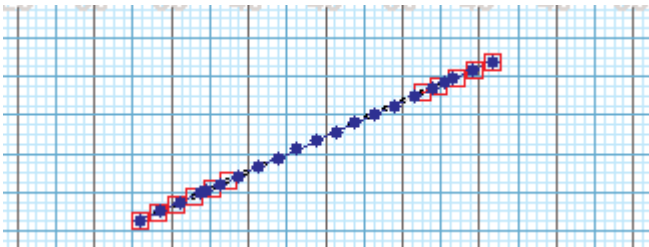
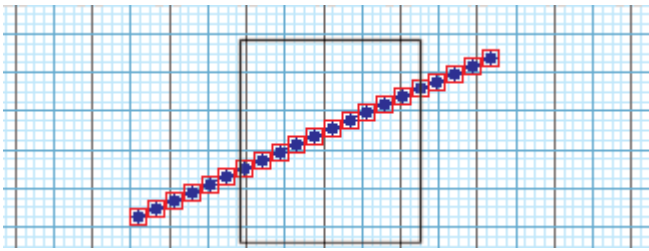
Editing handles appear on each selected performer. These handles can be dragged to create a new shape at the final location. While dragging the **editing handles** the location of the cursor is displayed in the [Console](#) as well as the **Largest Stride** and **Largest Distance**. Bridge lines are drawn from the original shape to the new morphed shape. These lines represent the paths taken by the performers. The bridge line drawn in red is the performer taking the **Largest Stride**.



Initially there is one **Editing handle** per performer in the shape. This is often too many handles to work with. **Editing handles** can be removed and added several ways.

Remove **editing handles** by clicking **Fewer** will remove half of the handles. Each time **Fewer** is clicked the number of handles is cut in half.

Another way to remove **editing handles** is by using the cursor to drag a box onto the field around a group of handles you want to remove.



An **editing handle** can also be removed by clicking directly on the handle while holding down the [SHIFT] key. Likewise, to add editing handles to the shape, click directly between two handles while holding down the [SHIFT] key.

Curved Shape option will create a curved shape between the handles. When the option is off the shape consists of straight lines between the handles.

Show Bridges displays the bridge lines between the morphing shape and the initial location. The bridge lines represent the paths of the performers. Turning this option off is useful when there are so many performers that the bridge lines begin to clutter the screen.

Show Symbols will display the position symbols instead of a plain dot.

Reset to Hold resets the transition to a “hold” from the secondary count.

Revert resets the handles to their initial position.

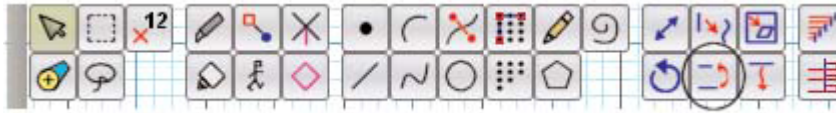
At any time the [Animation Controls](#) can be used to preview the change in the drill. Other useful options that can be accessed during the change are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

Accept commits the change to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

Follow the Leader Tool

The **Follow the Leader** (FTL) tool is used to create a new shape resulting from the paths taken by all positions of the selected shape. The path is determined by the leader of the shape.

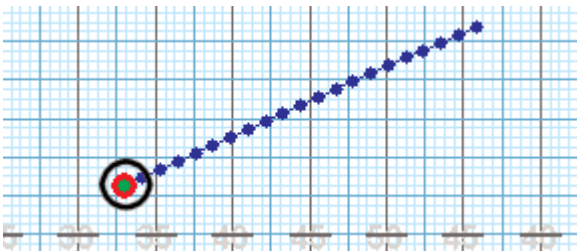
To establish the counts where the FTL transition is to begin and end in the drill, set the **Red Anchor** on the [Count Track](#) to the count where the FTL is to end. This is typically the count of the set you are currently working on. Set the **Yellow Anchor** to the count where the FTL is to begin. This is typically the previous set.



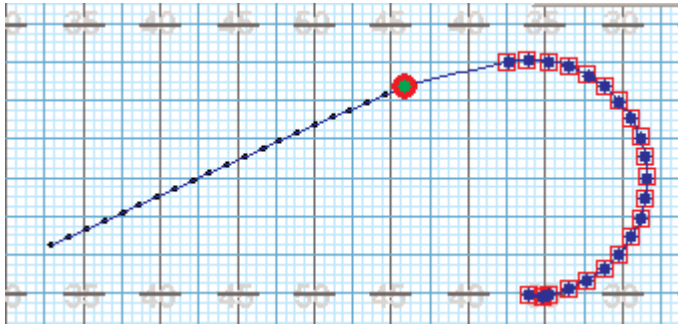
After selecting the shape or shapes you want to perform the FTL transition, clicking on the **Follow the Leader** tool will display the **Follow the Leader Tool Control Panel**.



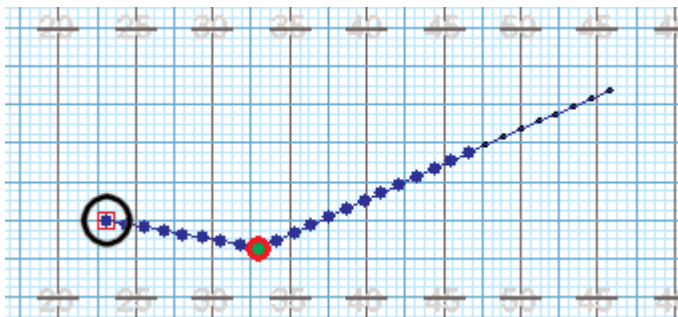
A red dot with a green center appears on one end of the shape. This performer is designated as the “leader” of the FTL movement. If the other end of the shape is the preferred “leader”, click on the leader indicator (the red dot) to change the leader to the opposite end of the form.



If an existing path can be established for the leader, **editing handles** will appear along the path. These handles can be dragged creating a new path to the final location. While dragging the **editing handles** the location of the cursor is displayed in the [Console](#) as well as the **Largest Stride** and **Largest Distance**.



If no existing path has been established there will not be any **editing handles** visible. Clicking anywhere on the field will create a path to that location. An **editing handle** will be placed at that location, the path will be drawn and the performers will fill in place behind the leader's new final location.



Each click on the field will extend the path of the leader to the location of each click. A new **editing handle** will be added at each location.

Clicking on an **editing handle** while holding down the [SHIFT] key will remove the handle from the path. Similarly, clicking along the path between two handles while holding the [SHIFT] key will insert a handle into the path.

The **Delete Last** button shortens the path by removing the last editing handle of the path. This is useful when you inadvertently add an editing handle to the end of the path.

Fewer cuts the number of handles on the path in half. Each time **Fewer** is clicked the number of handles is reduced.

The **Curved Shape** option will create a curved path between the handles. When the option is off the path consists of straight lines between the handles.

Show Symbols will display the position symbols instead of a plain dot.

Reset to Hold resets the transition to a “hold” from the secondary count.

Revert resets the handles to their initial position.

Mirroring Options are available if two or more shapes are selected. When mirroring, the path of the shapes can be set to opposing horizontally, opposing vertically, or opposing both vertically and horizontally.

At any time the [Animation Controls](#) can be used to preview the change in the drill. Other useful options that can be accessed during the change are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

Accept commits the change to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

Resize Tool

The **Resize** tool is a multipurpose tool for changing the size of a selected group of performers. The selection can be resized any of the following ways:

Scale changes the size of the selection in equal amounts vertically and horizontally.

Stretch changes the size of the selection in differing amounts vertically and horizontally.

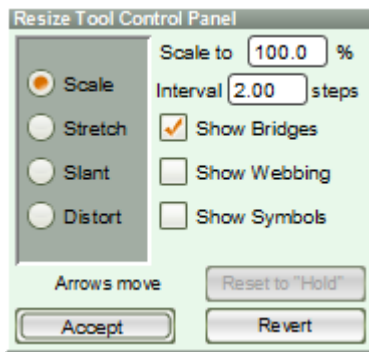
Slant stretches the shape while also skewing the shape in horizontal or vertical directions.

Distort changes the size of the selection in differing amounts in all four directions.

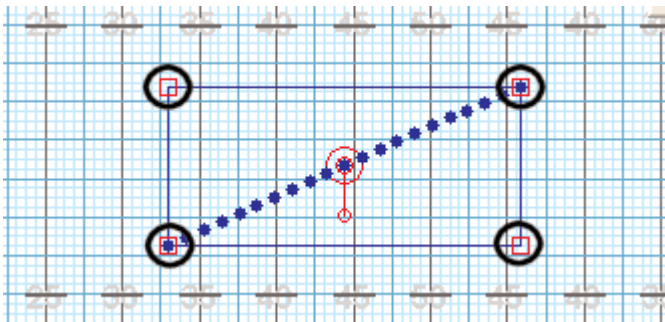
To establish the counts where the resizing transition is to begin and end in the drill, set the **Red Anchor** on the [Count Track](#) to the count where the resizing is to end. This is typically the count of the set you are currently working on. Set the **Yellow Anchor** to the count where the resizing is to begin. This is typically the previous set.



After selecting the shape or shapes that you want to resize, clicking on the **Resize** tool will display the **Resize Tool Control Panel**.



The selected performers are bordered on all sides by a **Resizing Box**. The **Resizing Box** has editing handles at all four corners that can be moved.



Dragging the **editing handles** will manipulate the shape in a behavior based on the resize model chosen: **Scale**, **Stretch**, **Slant**, **Distort**. While dragging the editing handles the location of the cursor is displayed in the [Console](#) as well as the **Largest Stride** and **Largest Distance**. Bridge lines are drawn from the original shape to the new resized shape. These lines represent the paths taken by the performers. The bridge line drawn in red is the performer taking the largest stride.

Entering a value in the **Scale To** box will uniformly scale the selection by the amount entered.

Changing the value in the **Interval** box will resize the shape to the interval specified.

Show Symbols will display the position symbols instead of a plain dot.

Reset to Hold resets the transition to a “hold” from the secondary count.

Show Webbing displays graphically the resizing formula used on the selected group. This is rarely used, however, can be useful with the **Distort** mode to understand how the handle movement is distorting the group.

Revert button resets the handles to their initial position.

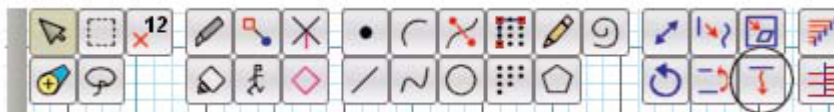
At any time the [Animation Controls](#) can be used to preview the change in the drill. Other useful options that can be accessed during the change are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

Accept commits the change to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

Track Tool

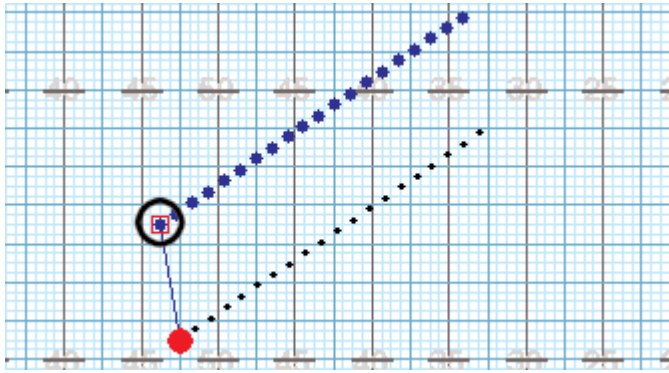
The **Track** tool moves a group of performers uniformly along a path. Unlike the [Follow the Leader](#) tool, the shape of the selection does not change. The entire shape follows the path at the same time as one entity. This is especially useful for pulling a single performer out of a group for solo's and creating a path for that performer to take.

To establish the counts where the track transition is to begin and end in the drill, set the **Red Anchor** on the [Count Track](#) to the count where the track is to end. This is typically the count of the set you are currently working on. Set the **Yellow Anchor** to the count where the track is to begin. This is typically the previous set.

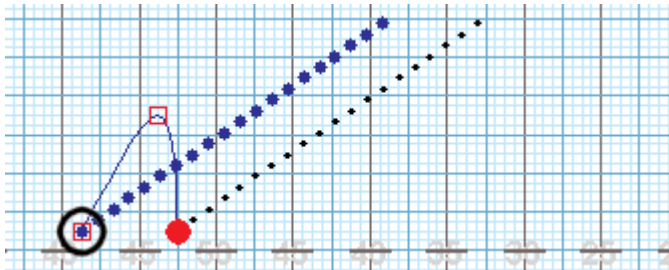


After selecting the shape(s) you want to track, clicking on the **Track** tool will display the **Track Tool Control Panel**.

A red dot will appear on one of the performers of the selection. Much like the [Follow the Leader](#) tool, this dot indicates the highlighted performer is the “leader”. Clicking anywhere on the field will start a path from the highlighted performer to that location. An **editing handle** will be placed at the location of the click.



Continuing to click on the field will extend the path of the selected group to the location of each click. A new **editing handle** will be added at each location clicked.



Clicking on an **editing handle** while holding down the [SHIFT] key will remove the handle from the path. Likewise, clicking along the path between two handles while holding the [SHIFT] key will insert a handle into the path.

The **Delete Last** button shortens the path by removing the last **editing handle** of the path. This is useful when you inadvertently add an **editing handle** to the end of the path.

The **Fewer** button cuts the number of handles on the path in half. Each time **Fewer** is clicked the number of handles is reduced.

Show Symbols will display the position symbols instead of a plain dot.

Reset to Hold resets the transition to a “hold” from the secondary count.

Revert resets the handles to their initial position.

At any time the [Animation Controls](#) can be used to preview the change in the drill. Other useful options that can be accessed during the change are located in the upper right corner of the [Field Display Window](#). These functions control the field display appearance such as moving or zooming the field, showing/hiding the text boxes, and showing/hiding the performer labels.

Accept commits the change to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

Performer Labeling & Special Markings

This section covers the “Special Tools” in the [Tool Palette](#). These tools are:

[Performer Labeling](#) for entering the identifying attributes of performers such as their symbol, color, label (usually a number), and label position.

[Text Boxes](#) for placing text directly on a chart (usually for instruction).

[Arrow](#) indicators for clarifying direction of movement in a drill.

[Props](#) for placing props on the field.

Click on the arrow next to **Performer Labeling & Special Markings** in the Table of Contents to the left to expand this section and begin.

Performer Labeling Tool

The **Performer Labeling** tool is used to change a performer’s identifying attributes. A performer’s attributes consist of the performer label (usually a number), label placement at a count, symbol and color used at a count, and performer name.

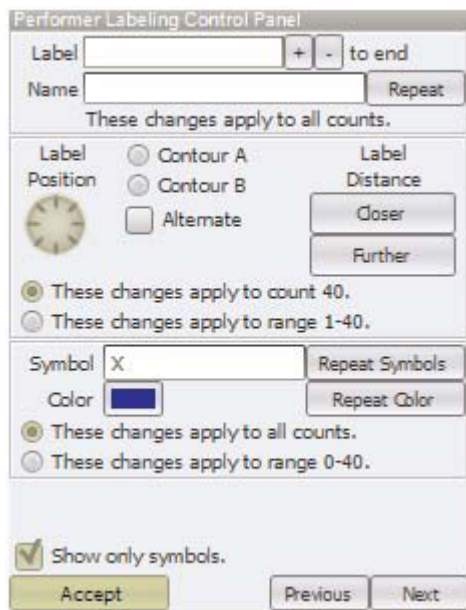
Some performer attributes do not change throughout the drill. Unchanging attributes consist of a performer’s label and name.

Other performer’s attributes can change at any count within a drill. Changing attributes are a performer’s label placement, performer’s color and symbol. A performer’s color and symbol are usually not changed within a drill. However, a possible use for changing the symbol is to indicate an equipment change. A possible use for changing the color is to indicate a costume change.

The display of a performer’s label can be turned on and off by the **Hide/Show Labeling Switch** located in the upper right corner of the [Field Display](#) window. When the **Show/Hide Labeling Switch** is on (depressed), the labels on the count displayed will be shown. A performer will not have a label until a label is assigned to that performer via the **Performer Labeling** tool. When the performer does not have a label, the **Show/Hide Labeling Switch** will not change anything whether it is on or off. It is not necessary to turn the **Show/Hide Labeling Switch** on when using **Performer Labeling** tool. Labels (if any) are always shown while the **Labeling** tool is active.



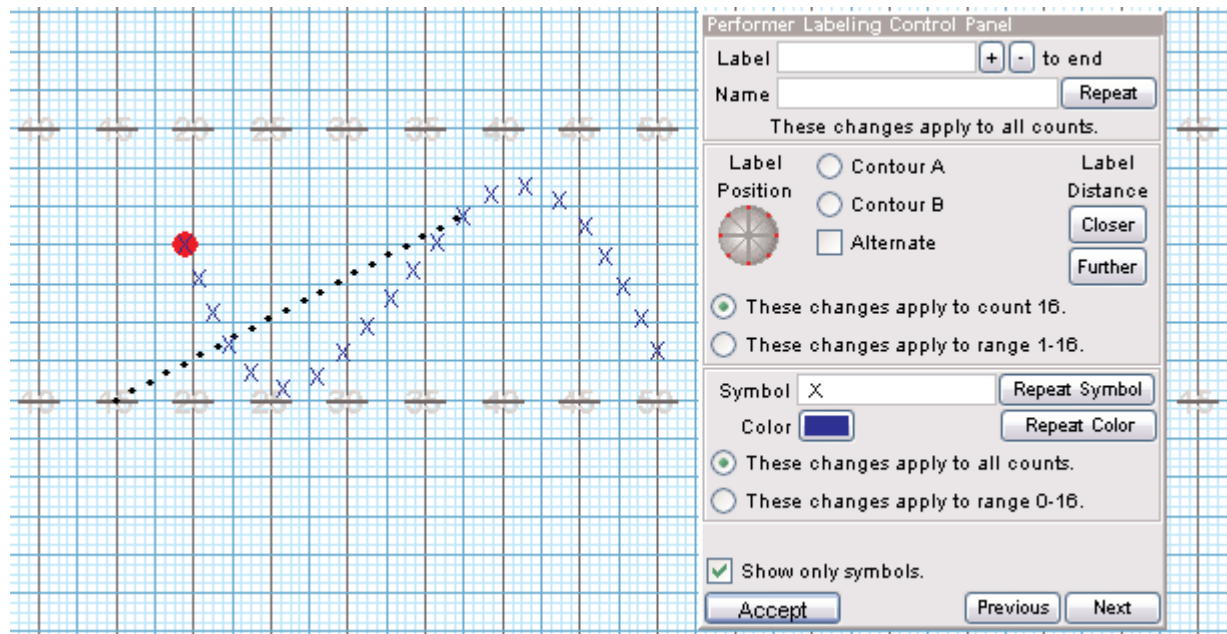
Once performers are selected, clicking on the **Performer Labeling** tool on the [Tool Palette](#) will display the **Performer Labeling Control Panel**.



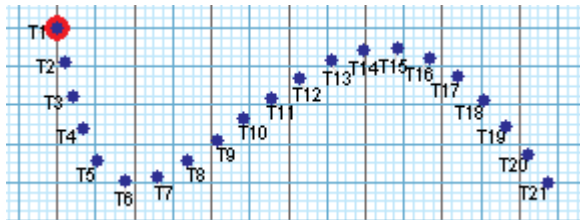
A red bubble will appear on top of one of the selected performers. Entering a value in the **Label** box changes the label of the performer marked with the red bubble. If the label value ends in a numeric value, the [+] [–] buttons will be active. Clicking on the [+] button will change all of the remaining selected performers with an increasing value starting with the number entered in the **Label** box. For example, “T1” will generate T2, T3, T4... Likewise, clicking on the [–] button changes all of the remaining selected performers with a decreasing value from the number entered.

Entering text in the **Name** box changes the name of the performer marked with the red bubble.

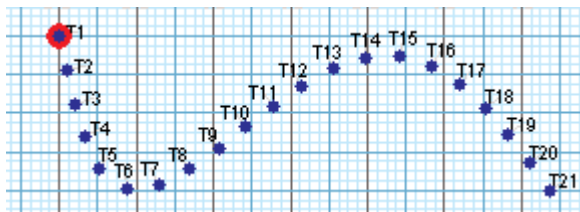
Clicking on the **Position** compass will change the position of the labels relative to the location of the symbol assigned to each performer.



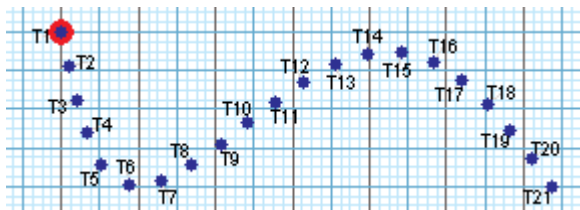
Contour A will move the labels on each selected performer to a position perpendicular to the contour of the shape.



Contour B does the same as Contour A except the position are on the opposite side of the shape.



Alternate follows the contour of the shape but alternates each label position to each side of the shape.



The default performer label position can be set. Select [Document Options](#) from the **File** menu. In the **Preferences** tab find the option **Default label position**. Choose one of the positions in the list. All new transitions will initially set the label position to the default label position.

Clicking the **Further** button will increase the distance of the label from the shape. Likewise, the **Closer** button decreases the distance.

Entering a character such as “X” in the **Symbol** box will change the symbol of the performer marked with the red bubble. The **Repeat Symbol** button will repeat the symbol entered throughout the selection. Typing a sequence such as “ABC” will change the symbols in sequence. The performer marked with a red bubble will be an A. The next performer B, then C. The sequence will repeat through the remaining performers.

Choosing a color from the **Color** button will change the color of the performer marked with the red bubble. The **Repeat Color** button will repeat the color throughout the selection.

The symbol and color changes can be applied to all counts of the drill, or the changes can be applied only to the counts between your **Yellow** and **Red Anchors** on the [Count Track](#). This is dependent on your selection between the two radio buttons: **These changes apply to all counts** or **These changes apply to counts XX through XX**.

Previous and **Next** will move the red bubble to the previous and next performer of the selected performers, respectively. Your [UP/DOWN] arrow keys on the keyboard will do the same.

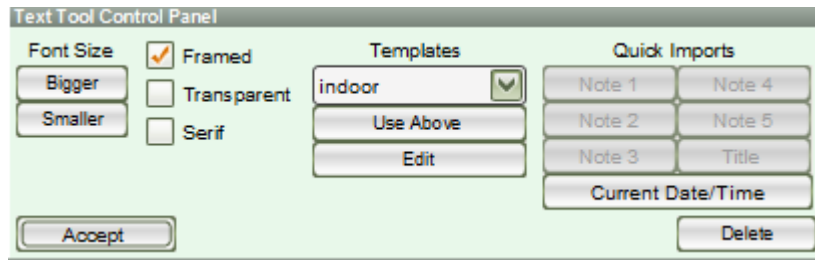
Accept will commit the changes into the drill. Clicking on any tool without clicking **Accept** will cancel the labeling changes. The changes can also be cancelled by moving an anchor on the [Count Track](#).

Text Tool

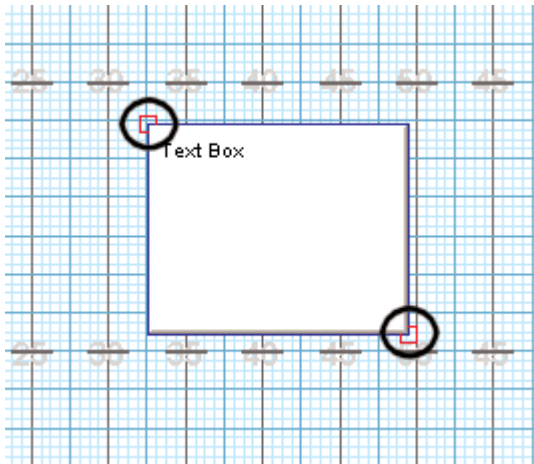
The **Text** tool is used to enter boxes of text directly onto a count of drill. Text boxes are typically used for instructions for the performers, or notes for certain sets.



Clicking on the **Text** tool will display the **Text Tool Control Panel**.



All existing text boxes (if any) will appear on the screen with **editing handles** in the upper left and lower right corner of each box.



Creating and Editing Text Boxes

Clicking on the field and not on any existing text box will create a NEW text box. The location of the first click will become the upper left corner of the new text box. Move the mouse to a location for the lower right corner of the new text box, then click to generate the box. In order to type inside the box, click in the middle of the text box to place a cursor in the context area for typing.

Clicking and dragging on the **editing handle** located in the upper left corner of a text box will move the text box. Clicking and dragging on the **editing handle** in the lower right corner of a text box will resize the text box.

Clicking in the middle of an existing text box will select the text box and place a cursor in the boxes' content area for typing. A text box is selected if the frame around the box is red. After a text box is selected, changes made in the **Text Box Control Panel** will only affect the selected text box, leaving all other text boxes (if any) untouched. If no text box is selected, changes in the options of the **Text Box Control Panel** will have no affect on any existing text box, however, any new text box created will have to be created with the current control panel options.

Contents of a text box can be copied and pasted.

The **Bigger** and **Smaller** options under **Font Size** will increase or decrease the size of the font used within the selected text box.

Framed option will draw a frame around the selected text box.

Transparent will make the text box transparent. When transparent, the field grid along with any performers will show through the text box.

Serif option will change the font to a Serif styled font as opposed to the default setting of a San Serif style.

Delete will delete the selected text box. If no text box is selected, Delete will do nothing.

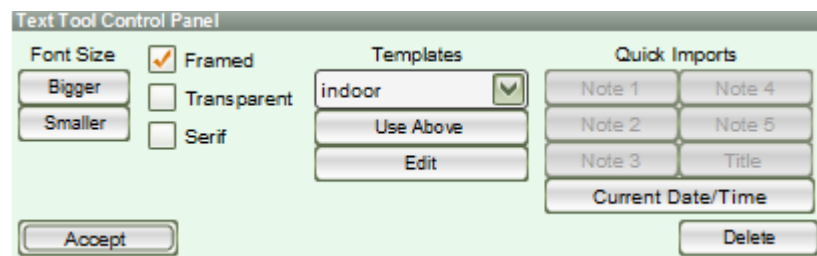
Current Date/Time will add a timestamp with the current date and time at the time of the button press. This is a helpful feature to aid in keeping track of any revisions that you make on sets. If a date and time is already displayed in a text box, pressing the **Current Date/Time** button will replace the older date with the current date and time.

Lists of pre-designed text boxes with text can be created and used through the **Templates** menu located in the **Text Tool Control Panel**.

Text Box Templates

This feature is available on Interactive and Professional editions only.

When a Text Box is selected, you may choose to quickly import a note from the [Production Sheet](#) by choosing one of the five **Notes** buttons. This will import the note from your current set in the **Production Sheet** to your text box.

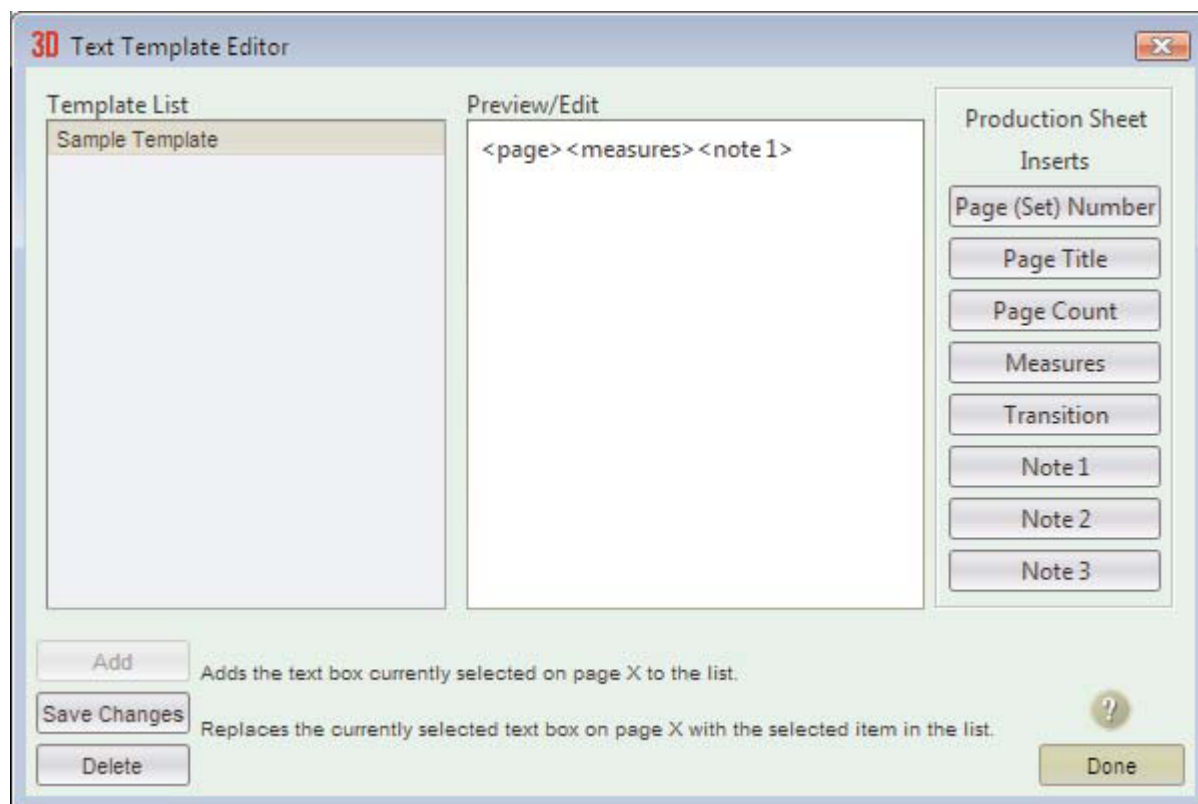


To use a template, select the template from the **Templates** menu and click **Use**. Initially there are only a few preset templates in the list.

Adding a template to the list is accomplished by creating a new text box, then selecting “Edit List...”* from the **Templates** list to display the **Text Template List Editor**.



Be sure to set the exact size and location of your text box prior to creating the template.



Within the **Text Template List Editor**, clicking **Add** will add your new text box to the list. Selecting **Replace** will replace the selected template in the list with the selected text box on the chart. Similarly, clicking **Delete** will delete the selected the template from the list.

Selecting any of the **Production Sheet Inserts** will quickly develop a **Text Box Template** that you may save and use throughout your design process.



You can click in the Preview/Edit window and type text to be displayed as well. For example, just pressing the **Page (Set) Number** button will only display that number in the text box. If you type in “Page: “ in the Preview/Edit window prior to pressing the **Page (Set) Number**, the text box will then read “Page: 3” as opposed to just “3”.

Accept button accepts the text changes into the drill. Clicking on any tool without clicking **Accept** will cancel the change. The change can also be cancelled by moving an anchor on the [Count Track](#).

Adding and Removing Text Box Templates Across All Drill Pages

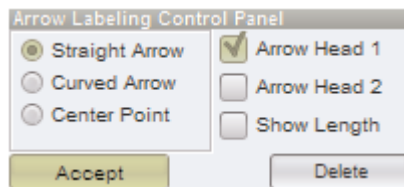
Text Box templates can be quickly added or removed from all pages (sets) of a drill. See the [FAQ](#) page for steps on how to do this.

Arrow Tool

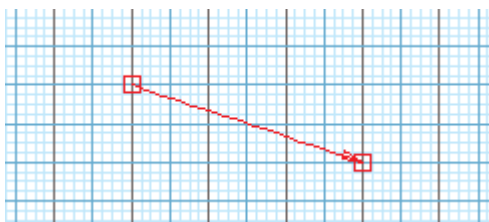
The **Arrow** tool adds arrow indicators to a chart. Arrows are typically used to indicate direction of movement within a transition. Arrows can also be used to identify distances between two points.



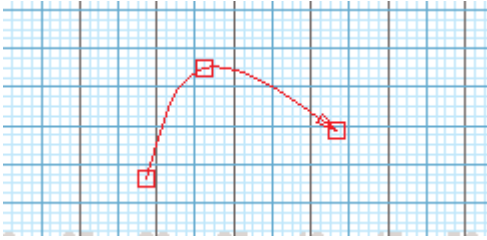
Select the **Arrow Labeling** tool in the [Tool Palette](#) and the **Arrow Labeling Control Panel** will display.



Any existing arrows will appear on the screen with **editing handles** at each end. Curved arrows will have an additional **editing handle** in the middle.



Clicking on an arrow's **editing handle** will select the arrow. A selected arrow is drawn in red. Dragging an **editing handle** will reposition the selected arrow.



Clicking on a location on the field that is not on an existing arrow's **editing handle** will start the creation of a **NEW** arrow.

The type of arrow used is defined by the current settings in the **Arrow Labeling Control Panel**. There are three types of arrows: **Straight**, **Curved**, and **Center Point**.

Straight Arrow is an arrow formed by a straight line. Likewise, **Curved Arrow** is an arrow formed by a curved line.

Center Point arrow is an arrow that represents the radius of a circle or arc. For a **Straight** or **Curved** arrow, the location of the first click will become one end of the new arrow. A second click on the field will become the other end of the arrow. For a **Center Point** arrow, the first click will be the center point and the second click will be the circumference. After the arrow is entered, the settings for the new arrow can be changed.

Arrow Heads can be added to either end of the arrow using the **Arrow Head** options. The length of the arrow can be placed on the arrow using the **Show Length** option.

Delete Arrow button will delete the currently selected arrow. The currently selected arrow is the arrow drawn in red. To select a different handle, click on one of its **editing handles**.

Accept will commit the arrow to the drill. Clicking on any tool without clicking **Accept** will cancel the change. The changes can also be cancelled by moving an anchor on the [Count Track](#).

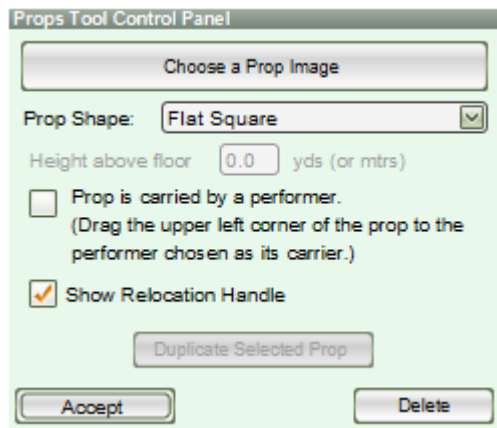
Prop Tool

A **Prop** is an image of an inanimate object such as a stage, wall, pillar, fence, etc. Any .jpg, .gif, or .png file can be used as the prop. All props are entered at count 0 of the drill. Props can be move around the field independently or be moved by a performer.

Before entering a prop, place both **Red** and **Yellow Anchors** on the [Count Track](#) to count 0 of the drill. This enables the **Prop** tool. Props are always added at count 0.



Clicking on the **Prop** tool will display the **Prop Tool Control Panel**.



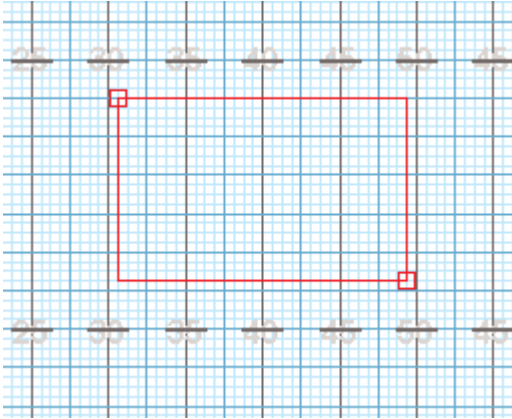
Clicking on top of an existing prop will select the prop for editing. A prop is selected when it is outlined in red.

Clicking a location anywhere else on the field will start the creation of a NEW prop. The first click will be the location of the upper left corner of the prop. Move the cursor to the location for the lower right corner of the prop and click. A red box will indicate the location entered.

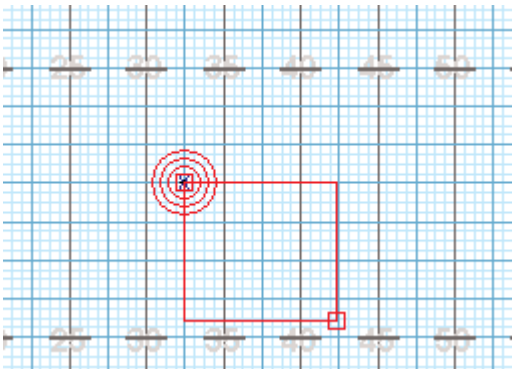
Editing handles will appear on a selected prop. Dragging the handle in the upper left corner will move the location of the prop. Dragging the handle in the lower right corner will change the size of the prop.

Choose a Prop Image in the **Prop Tool Control Panel** will display a file dialog for finding an existing image to assign to the prop.

Prop Shape will assign an existing shape to the prop on the field. these range from flat panels and polygons to pit (front ensemble) setups.



Prop is carried by a performer will cause the prop to move with the movement of a selected performer. To select the performer to be the prop carrier, drag the upper left corner of the prop directly on top of an existing performer. A red “bulls eye” will appear on top of the performer to indicate the performer will carry the prop throughout the drill. The carrier can be any performer in the drill, whether they are a wind/guard/drum line member, or just a performer who’s sole purpose to move the prop. Selecting the performer and editing its movement throughout the drill will cause the prop to move as well.



To rotate a prop, select the prop and adjust the **Reposition Handle**. Alternatively, you can enter a value in the “Rotation” box in the control panel. Positive numbers will rotate the prop clockwise, and negative numbers will rotate the prop counter clockwise.

The height of the prop can be entered by entering a number in the **Height** box. The height is in yards or meters.

To delete a prop, set your anchors on the Count Track to count zero. Open the Prop tool and select the prop by clicking on it. In the Props Tool Control Panel, press **Delete**, then Accept to accept the change.

Should you transfer the drill file to another computer, you will need to also transfer the prop images used in your drill. You can save a 3D Drill file as a [3D Package](#) that will include all props used with the drill into one

file. When saving, the package option **Include Props** must be set. To change the format of an existing drill file to a 3D Package, choose [Save As](#) from the **File** menu.

Printing

The **Printing** section covers the various ways to printout your drills.

Click on the arrow next to **Printing** in the Table of Contents to the left to expand this section and begin.

Print

Selecting **Print** from the [File](#) menu will open the Print dialog. Here you'll have settings and options to print multiple jobs at once, such as printing a cover sheet, charts, and coordinates.

Printer

Print Cover Sheet

☐ Print

Print Cast Sheet

☐ Print ☒ Print all symbols black. ☒ Expand rows to fit. Sort Performers: by Symbol, Label, Name

Print Instruction Sheet

☐ Print Directors Report Sort by: (Performers Report Only) by Label, Symbol, Name

Print Coordinates

Report Type

☒ Print Performer's Coordinate Sheet ☐ Print Director's Coordinate Sheet

☒ Combine all drills in this production. List size: 1/4 page (index card size) List size: half page

Preferences

Step Resolution: Quarter Steps Sort Performers: Shape and Rank

☐ Print only selected positions. ☒ Don't print sub-sets. ☒ Print Performer ID. ☒ Print date and time of printout. ☐ Print coordinates for only selected charts. ☐ Print Set Title on Coordinates.

Grid Terminology

Left Side: Left Steps: Steps Right Side: Right Sideline: Sideline Top: Visitor Vertical Yard Line: yd in Bottom: Home Horizontal Yard Line: yd in

Print Charts

Print Selection

☐ Currently Displayed Count ☐ From Page Tabs ☐ Thumbnails (8 per page)

Preferences

☒ Print all performers black. ☐ Thicker grid lines. ☐ Zoom chart for largest printout. ☐ Print facing. ☐ Thicker yard lines. ☐ Mark center of performer locations. ☐ Magnify symbols. ☒ Print Set information. ☒ Print each performers label. ☐ Print text. ☐ Print text from Production Sheet Note. ☐ Force Textbox Font Size: 10. ☐ Performer viewpoint (reverse view). ☒ Print props. 1 2 3 4 5

Overlay Set

☒ Use Previous ☐ Use Next

☒ Print Starting Set # 1

Set	SubSet	Count	Print	Overlay	Paths	Title
1		0	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
2		16	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
3		28	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
4		44	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
5		60	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
6		72	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
7		88	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	
8		104	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None	

Personalized Drill Book Plug-in

☐ Print ☐ Print only selected positions. ☐ Zoom top chart for largest printout. ☒ Include Drill Book Cover. ☒ Print each performers label. ☐ Print only one chart per page. ☒ Print all performers black. ☒ Print text. ☒ Overlay set: Previous Next ☐ Show Print dialog between each performer. (Useful for PDF files) Sort Performers: Label and Symbol

The settings found in this window are no different than those that you would find when you choose to print a single job from the **File** menu.

To print multiple jobs at once, check the "Print" option for each job's section in this window. In the above example, coordinate sheets and drill charts are selected to print.

Printing Charts

Any count of a drill can be printed in 3D. Most users, however, only want printouts at set points.

Charts can be printed by count number or set number. Sets are determined by the location of **Page Tabs** on the [Count Track](#). Prior to printing, you may want to add or remove certain page tabs from the Count Track so the sets will print out according to your preference.

Selecting **Print Charts** from the [File](#) will display the following screen:

Set	SubSet	Count	Print	Overlay	Paths	Title
0		0	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
0A	<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
1		24	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
2		44	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
3		60	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
4		76	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
5		92	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
6		108	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
6A	<input checked="" type="checkbox"/>	124	<input type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
7		166	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
7A	<input checked="" type="checkbox"/>	178	<input type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
8		205	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
9		221	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
10		237	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
11		253	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
12		269	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
13		285	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
14		301	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
15		317	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
16		329	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
17		345	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
17A	<input checked="" type="checkbox"/>	361	<input type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
18		365	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
18A	<input checked="" type="checkbox"/>	377	<input type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1
19		390	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None	Illusions - Part 1

Print Selection options are used to determine which counts of a drill are printed.

From Page Tab will print the selected page tabs in the Print Charts dialog.

Currently Displayed Count will print the current count displayed. The displayed count is determined by the location of the **Red Anchor**.

Thumbnails per page will print small grids to fill the page. Ideal settings for dotbooks are 8 thumbnails per page in portrait orientation, or 4 thumbnails per page in landscape orientation.

Preferences

Print all performers black is useful when it is important to make clear black and white reproductions of the printout. On color printers, this option may be useful because the color symbols will not copy as clear when in color. On black and white printers, this option is helpful as colored symbols will be printed in a shade of gray, and will not copy as clearly as if they were black. If you plan on reproducing the printouts, we suggest using the “Print all performers black” option.

Performer viewpoint (reverse view) will print the charts from the performer’s perspective.

Print text, when selected, will print text boxes and arrow indicators on the drill chart printouts.

Print text from Production Sheet Note will print information from the Production Sheet Notes columns at the bottom of the chart printout, below the field.

Print Set information will print the **Count** and **Move** (transition) at the top of the chart printout, above the field.

Thicker yard lines will thicken the yard lines. Likewise, **thicker grid lines** will thicken the grid lines when printed.

Zoom chart for largest printout will print zoomed in charts. The printout will be zoomed in as much as possible while still keeping all performers in the viewable area. When selecting this preference, options will display for determining which charted items are visible in the printout when zoomed.

Force Textbox Font Size will force the text box font to print at the size that you specify in this option.

Print each performer’s label determines whether a label is printed (usually a number) beside each performer’s symbol. Normally, if labels were entered with the [Performer Labeling](#) tool, this option is checked.

Mark center of performer locations will place a dot in the center of the positions where the performer will be standing.

Magnify symbols will enlarge the symbols and labels printed on the charts.

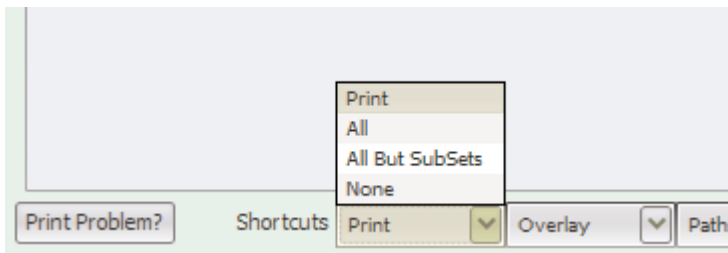
Print facing will indicate which way the performers face for each symbol on the field.

Overlay Set

Overlay Set has two options: **Use Previous** and **Use Next**. If a chart selection includes an overlay, **Use Previous** will print the previous set as a background chart. Likewise, **Use Next** will print the next set as a background chart.

Starting Set # will change the starting set number. For example, if the first drill ends with page tab 23, the continuation file can begin with page 24.

Shortcuts Menus



The **Print** shortcut menu will remove or add all of the checks from the selection boxes in the print column. Charts will only print if they have a check in the selection box of the **Print** column.

Overlay will remove or add all of the checks from the selection boxes in the **Include Overlay** column.

Paths menu will select all, none, or mid-point options to print paths.

Options of the Print Charts Table

Sets and **SubSets** are derived from the **Page Tabs** on the [Count Track](#). A chart should typically be printed at each **page tab**, and each page tab is a **set**. However, it is sometimes useful to create a page tab at a location where you don't necessarily need a printed chart. These page tabs are known as **sub-sets**. Sub-sets do not advance the total number of pages. For example, if we had two sub-sets between pages 2 and 3, the numbering sequence would be 1, 2, 2A, 2B, 3, 4, etc.

The **Print** column in the table enables/disables the printing of selected sets.

Overlay enables/disables printing of a background chart for selected sets.

Paths can be set to **none** for no paths printed, **all paths** for a dot per step for every performer, or **path midpoint** for a single dot for each performer marking the midway point to the next set.

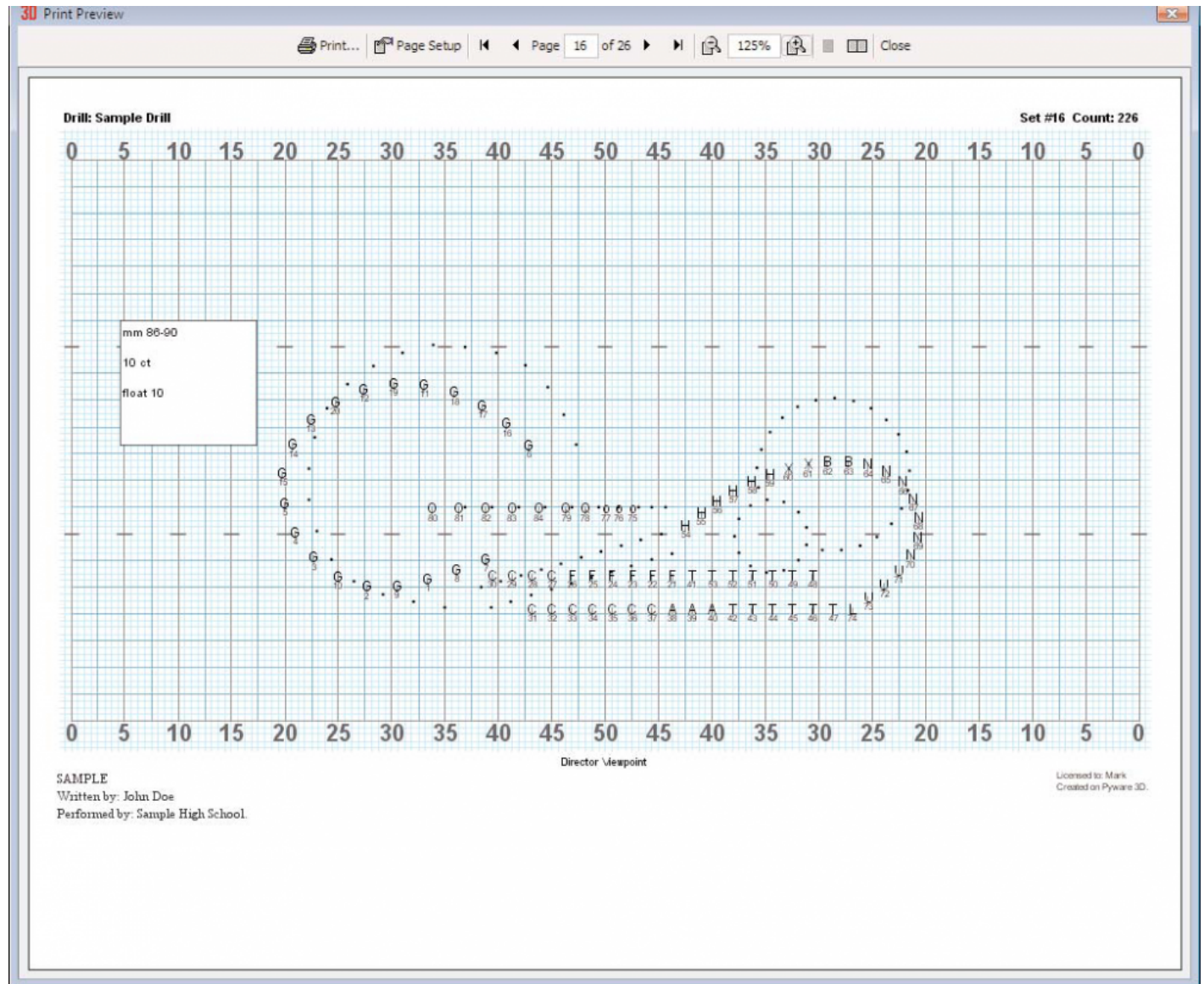
The **Title** column in the table can be used to enter a title for the set to be printed along the top of the printed chart.

Close will exit the **Print Charts** window.

Save as Default will save the settings you set for options in **Print Preferences** as default values. **Print Selection** will not be saved.

Save as PDF will save the selected charts as a PDF document instead of printing a physical copy. Note that PDF printouts created this way are intentionally set to a high resolution. This may dramatically increase the file size of the PDF document.

Print/Preview opens the print preview and page setup dialog.



Print will send the job to the printer.

Previous Page will move to the previous preview page of the print job.

Next Page will move to the next preview page of the print job.

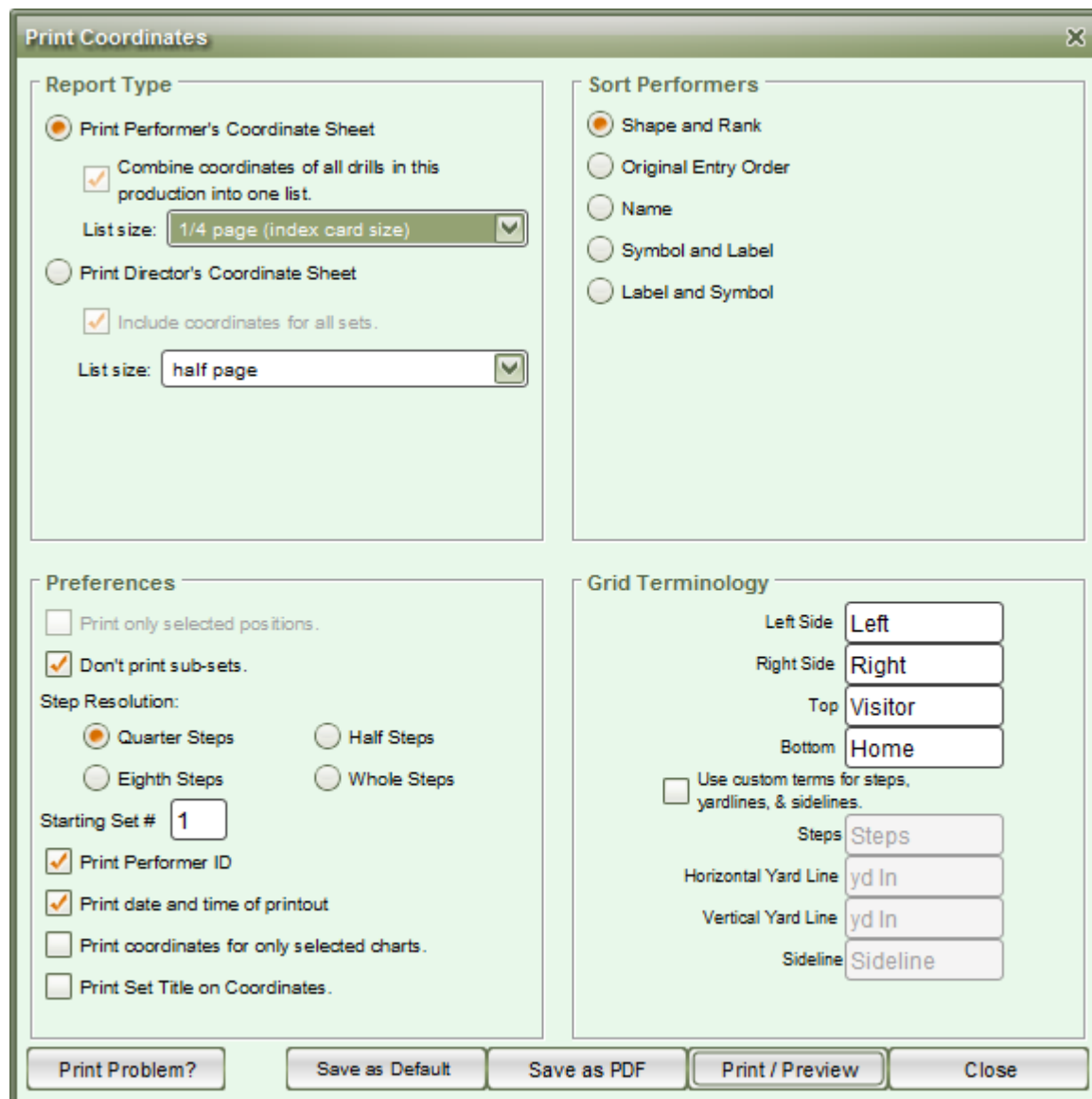
Page Setup opens the printer's page setup dialog.

Done closes the print preview and returns to the **Print Charts** dialog.

Printing Coordinates

Coordinates for any count of a drill can be printed, however you'll typically only want to print coordinates for set points in the drill. 3D uses **page tabs** on the [Count Track](#) to determine the sets in a drill. Prior to printing, you may want to add or remove certain **page tabs** from the **Count Track** so the **sets** will print out according to your preference. It is useful to use **sub-sets** on the **Count Track** to indicate sets that are used for design purposes but not to print.

Selecting **Print Coordinates** from the [File](#) menu will display the **Print Coordinates** dialog.



The **Print Coordinates** dialog box is divided into four main sections: **Report Type**, **Sort Performers**, **Preferences**, and **Grid Terminology**.

- Report Type:**
 - ☒ **Print Performer's Coordinate Sheet**
 - ☒ Combine coordinates of all drills in this production into one list.
 - List size:
 - ☐ **Print Director's Coordinate Sheet**
 - ☒ Include coordinates for all sets.
 - List size:
- Sort Performers:**
 - ☒ Shape and Rank
 - ☐ Original Entry Order
 - ☐ Name
 - ☐ Symbol and Label
 - ☐ Label and Symbol
- Preferences:**
 - ☐ Print only selected positions.
 - ☒ Don't print sub-sets.
 - Step Resolution:
 - ☒ Quarter Steps
 - ☐ Half Steps
 - ☐ Eighth Steps
 - ☐ Whole Steps
 - Starting Set #
 - ☒ Print Performer ID
 - ☒ Print date and time of printout
 - ☐ Print coordinates for only selected charts.
 - ☐ Print Set Title on Coordinates.
- Grid Terminology:**
 - Left Side:
 - Right Side:
 - Top:
 - Bottom:
 - ☐ Use custom terms for steps, yardlines, & sidelines.
 - Steps:
 - Horizontal Yard Line:
 - Vertical Yard Line:
 - Sideline:

Buttons at the bottom: **Print Problem?**, **Save as Default**, **Save as PDF**, **Print / Preview**, **Close**.

Report Type

Print Performer's Coordinate Sheet is a list of coordinates for a performer. The coordinate list contains a coordinate for each **page tab** (set) in a drill.

- **Combine coordinates of all drills in this production into one list** is available when printing coordinates from a **Production** file.
- **List Size** is the size of the printout. This is useful for performers who want lists to be printed in a convenient size for fitting on index cards, or small pocket size for a wallet.

Print Director Coordinate Sheet is a list of all performers. The list contains a coordinate for each performer at a **page tab**. A **Director Coordinate Sheet** can be printed for each **page tab** in the drill by selecting the **Include coordinates for all sets** option.

Sort Performers

The options found under **Sort Performers** will sort the coordinate list by the option you specify.

Preferences

Print only selected positions is useful for reprinting a single performer or a group of performers. Select the performer(s) with a [Selection](#) tool before selecting **Print Coordinates** from the [File](#) menu. Then check the **Print only selected positions** option.

Don't print sub-sets will not print sub-sets when selected.

Coordinates can be printed at four different step resolutions: **Whole step**, **half step**, **quarter step**, and **eighth step**.

Starting Set # will change the first page tab to the value entered. All page tabs will be effected by this change.

Print Performer ID will print the unique ID number that 3D has assigned to that performer. This number is different from their symbol and label.

Print date and time of printout will print a time stamp on the coordinate printout.

Print coordinates for only selected charts when this option is selected, coordinates will print for any selected chart in the [Print Charts](#) dialog.

Print Set Title on Coordinates will print a set title (if any) for the set on the coordinate printout.

Grid Terminology

Setting up the Grid Terminology to match the terms commonly used by your ensemble will make the coordinates easier to understand by the performers. For example, on a football field grid the **Left Side** of the grid (the left endzone) may be referred to as Side 1 or Side A rather than the default term Left.

The **use custom terms for steps, yard lines, and sidelines** option is useful when writing for indoor ensembles that do not have yard lines and markers to reference.

Save as Default saves the settings of the **Grid Terminology** and **Preferences** as default values.

Save as PDF will save the coordinates as PDF documents instead of printing a physical copy.

Print/Preview opens the print preview and page setup dialog.

Print will send the job to the printer.

Previous Page will move to the previous preview page of the print job.

Next Page will move to the next preview page of the print job.

Page Setup opens the printer's page setup dialog.

Done closes the print preview and returns to the print coordinates dialog.

Performer: Jane Doe G G1 ID:173			Heritage High School 2013
Set	Move	Left-Right	Visitor-Home
#1	0	Left: On 45 yd In	6.0 stps behind Home hash (HS)
#2	48	Left: 1.0 stp outside 45 yd In	4.0 stps behind Home hash (HS)
#3	32	Left: 4.0 stps inside 45 yd In	6.0 stps behind Home hash (HS)
#4	8	On 50 yd In	4.0 stps in frnt of Home hash (HS)
#5	8	Right: On 45 yd In	8.0 stps in frnt of Home hash (HS)
#6	8	Right: On 40 yd In	12.0 stps in frnt of Home hash (HS)
#7	8	Right: On 35 yd In	12.0 stps behind Home side line
#8	12	Right: 2.0 stps inside 30 yd In	3.0 stps behind Home side line
#9	24	Right: 2.0 stps outside 25 yd In	12.0 stps behind Home side line
#10	16	Right: 4.0 stps outside 25 yd In	4.0 stps behind Home side line

Printing a Cast Sheet

Whether you have a large band or a small band the cast sheet is a very useful tool. The cast sheet will display and print all symbols, labels, and names of the performers in the drill.

When you select **Print Cast Sheet** from the [File](#) the [Cast List Editor](#) will display.

3D Cast List Editor

Name	Label	Symbol	Figurine	Notes
	34	G	+	
	33	G	+	
	32	G	+	
	31	G	+	
	30	G	+	
	29	G	+	
	28	G	+	
	27	G	+	
	26	G	+	
	25	G	+	
	24	G	+	
	23	G	+	
	22	G	+	
	21	G	+	
	20	G	+	
	19	G	+	
	18	G	+	
	17	G	+	
	16	G	+	
	15	G	+	
	14	G	+	

Sort:

☐ by order entered
☐ by Name, Symbol, Label
☐ by Label, Symbol, Name
☒ by Symbol, Label, Name
☒ Print all symbols black.
☒ Show unlabeled cast members.

Import Names & Labels
 Print / Preview
 Save as Default
 Done

Print **Sort** order will sort the names in the cast sheet according to one of the following options: by “**Symbol, Label, Name**”, by **order entered**, by “**Name, Symbol, Label**”, or by “**Label, Symbol Name**”.

The name is entered using the [Label](#) tool or can be entered directly from this dialog, the [Cast List Editor](#).

The **Notes** column is a space on the printout for taking notes of performers during rehearsals.

Print all symbols black will print all symbols in the Cast Sheet black instead of the color defined in the label function.

Show unlabeled cast members shows all performers (even the performers with no label) on the [Cast List Editor](#) window and in the printout. Hiding unlabeled performers from a printout is useful if you entered some performers as markers on the field and not actually performers.

Save as Default saves the settings of the **Sort** order.

Print/Preview will open the page setup display then render and display a preview of the Cast Sheet report according to the settings of the print cast sheet manager.



Print will send the job to the printer.

Previous Page will move to the preview preview page of the print job.

Next Page will move to the next preview page of the print job.

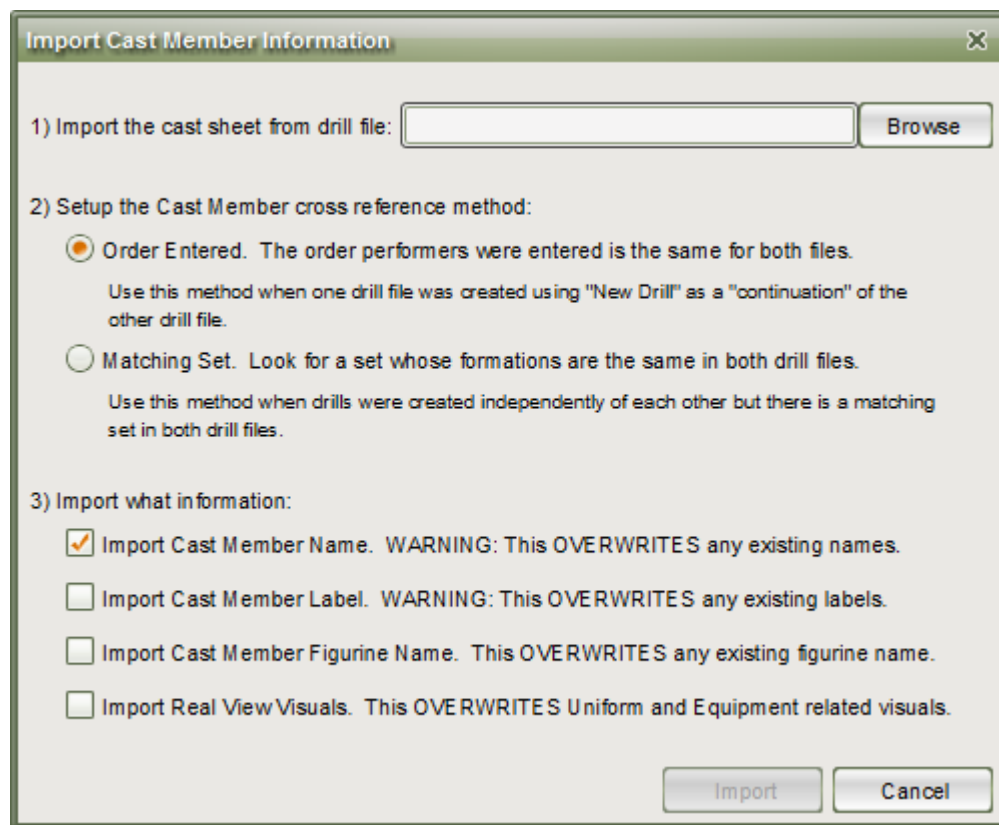
Page Setup opens the printer's page setup dialog.

Import Cast List Information

Cast list names and labels can be imported from one drill to another. This is very handy when you add cast list information such as cast member names or labels to a drill after you have finished it. This is often done if you have purchased a custom or pre-written drill. You'll typically want to import into your drill the cast information of the previous drill of the show you are writing. The set at the first count of the drill you are editing is typically the same as the set at the last count of the drill you are importing from. Import will find the counts with matching formations in both drills, look up the name and/or label of each performer and then set that name and/or label in the drill you are editing.

Select **Print Cast List** from the [File](#) or [Cast List Editor](#) from the [Utilities](#).

Click **Import Names & Labels** located in the lower left corner of the editor and the following dialog will display:



The dialog box is titled "Import Cast Member Information" and contains the following sections:

- 1) Import the cast sheet from drill file:** A text input field followed by a "Browse" button.
- 2) Setup the Cast Member cross reference method:**
 - ☒ **Order Entered.** The order performers were entered is the same for both files.
Use this method when one drill file was created using "New Drill" as a "continuation" of the other drill file.
 - ☐ **Matching Set.** Look for a set whose formations are the same in both drill files.
Use this method when drills were created independently of each other but there is a matching set in both drill files.
- 3) Import what information:**
 - ☒ **Import Cast Member Name.** WARNING: This OVERWRITES any existing names.
 - ☐ **Import Cast Member Label.** WARNING: This OVERWRITES any existing labels.
 - ☐ **Import Cast Member Figurine Name.** This OVERWRITES any existing figurine name.
 - ☐ **Import Real View Visuals.** This OVERWRITES Uniform and Equipment related visuals.

At the bottom right are "Import" and "Cancel" buttons.

Click **Browse** and find the drill whose cast list information you want to import into this drill.

Select the **Cast Member cross reference method**

- Method 1: **Order entered**. Once you have finished a drill file, if you start another drill file using the “**this drill is a continuation of the drill...**” option then both drills will have performers entered in the same order. However, should you add new performers later, then the order may no longer be the same (at least for the newly added performers) and the second cross reference method may give you better results.
- Method 2: **Matching Set**. This scans both drill files and looks for a set whose formations are exactly the same in both. Then it copies the cast information from one to the other.

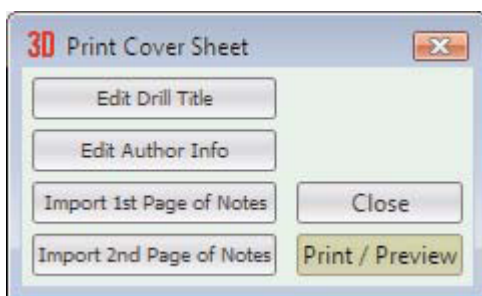
Choose what information you want to import. The information can be cast list name and label. It is important to remember that the name and/or labels of performers that are found in both drills will be overwritten in the drill you have opened.

Click **Import** to begin the search and copy the cast information into your drill.

When you click **Done** in the [Cast List Editor](#), you will be asked if you want to save the changes. If you do not want the changes saved, you can click “No” here and nothing will be saved from the import.

Printing a Cover Sheet

The **Print Cover Sheet** function will print a cover sheet for the drill. When you choose **Print Cover Sheet** from the [File](#) the **Print Cover Sheet** dialog will display.



Edit Drill Title will open the [Document Options](#) to the **Preferences** tab so that the title may be changed.

Edit Author Info will open the [Document Options](#) to the **Properties** tab so that the **Author Info** may be changed.

Import 1st page of Notes and **Import 2nd page of Notes** will allow you to import a text file to have as notes pages to follow the cover sheet for any additional instructions.

Close will close the **Print Cover Sheet Manager** dialog and return to the design grid.

Print/Preview will open the page setup display with a preview of the **Cover Sheet** report according to the settings of the **Print Cover Sheet** dialog. You can **Print** from the **Print/Preview** dialog.

Printing Instructions

The **Instruction Report** has two options to print:

- The [Director's Report](#), which will print a list of transitional maneuvers performed by grouped forms throughout the drill, or
- The [Performer's Report](#), which will print a list of specific instructions for both transitional and visual maneuvers for each individual performer.

Both reports are generated from the [Command Editor](#) data. To edit group names or transition descriptions, you would need to open the **Command Editor**.

Both the Director's and Performer's reports can be saved as PDF files by clicking **Save as PDF**.

Director's Report

The **Director's Report** prints a list of transitional maneuvers performed by grouped forms throughout the drill. This report is intended to be a general overview of commands for the ensemble. Specific details (such as movement, visual, equipment, and uniform changes) for each performer can be viewed by printing a [Performer Report](#).

Both Director's and Performer's reports are generated from the [Command Editor](#) data. To edit group names or transition descriptions, you would need to open the **Command Editor**.

When you select [Print Instructions](#) from the [File](#) menu, the following window will appear:

Instruction Report

Director Instruction List

Set	Group Name	Transition Description
0		Opening Formation
1	winds	float for 8 counts
1	drum line	hold for 8 counts
2	drum line	hold in 8 counts
2	winds	move for 8 counts
3	drum line	push for 8 counts
3	contras	float for 8 counts
3	trumpets, mellos, baritones	float for 8 counts
4	drum line	hold for 8 counts
4	trumpets, mellos, baritones	move for 8 counts
4	contras	move for 8 counts
4A	trumpets, mellos, baritones	move in 8 counts
4A	contras	move in 8 counts
4A	drum line	push for 8 counts
5	drum line	push in 8 counts
5	trumpets, mellos, baritones	rotate for 8 counts
5	contras	hold for 8 counts
6	trumpets, mellos, baritones	push for 8 counts
6	contras	follow-the-leader for 8 counts
6	drum line	hold for 8 counts
7	drum line	push for 8 counts
7	contras	Float for 8 counts
7	rows 1-3	push for 8 counts
7	row 4	track for 8 counts

Options

☒ Expand rows to fit. Sort by: (Performers Report Only)

☒ Director's Report ☐ Original Entry Order

☐ Performer's Report ☒ Label and Symbol

☒ All Performers ☐ Name

☐ Selected Performers ☐ Symbol and Label

Remember Options

Previous Next

Print / Preview

Save as PDF

OK

Each **Set** (or page tab) in the drill is displayed, along with a **Group Name** and a brief **Transition Description** for the group.



No titles in the Group Name column? See the [Command Editor](#) page for an explanation as to why that happens, and how to easily fix it.

Expand rows to fit will expand any row with too much data to print in a single line.

From this window, you can either create a PDF of the Director Report by selecting **Save as PDF**, or print a hard copy by selecting **Print/Preview**.

Performer's Report

The **Performer's Report** prints a list of specific instructions (such as movement, visual, equipment, and uniform changes) each individual performer in the drill. This report is intended to be specific instructions for each performer in the ensemble. A more generalized report for the full ensemble can be viewed by printing a [Director Report](#).

Both Director's and Performer's reports are generated from the [Command Editor](#) data. To edit group names or transition descriptions, you would need to open the **Command Editor**.

When you select [Print Instructions](#) from the [File](#) menu, the following window will appear:

Instruction Report

Performer: Jesse X B1

Set	Group Name	Transition Des...	Visual Description
1		Opening Formation	Uniform Change, Hat Change, Bass Drum Size 1, Open 2nd Right Foot on Dot, Attention, Standard Bent Knee, One Step per count, Face Fixed Angle
2	All except Snare 4	hold for 4 counts	
3	All except Snare 4	hold for 4 counts	Squat Center (over 1 counts), T Pose 1 Palms Down (over 1 counts), Crab Step
4	All except Snare 4	hold for 4 counts	Open 2nd Center (over 2 counts), Pin Pose 2 Right Arm Down (over 2 counts)
5	All except Snare 4	hold in 8 counts	Power Stance Left Facing (over 2 counts), Wall Pose 2 Left Arm Out (over 2 counts)
6	All except Snare 4	move for 8 counts	T Pose 1 Palms Down (over 4 counts)
7	All except Snare 4	move for 8 counts	Hold (over 2 counts), Attention (over 4 counts)
8	All except Snare 4	move in 8 counts	
9	All except Snare 3, Bass 2	hold for 4 counts	Lean Right (over 1 counts), Wall Pose 2 Right Arm Out (over 1 counts)
10	All except Snare 3	move for 8 counts	Hold (over 1 counts), Attention (over 1 counts)
11	All except Snare 3	hold for 8 counts	Kneel on Left Knee (over 3 counts)
12	All except Snare 3	hold in 16 counts	Hold (over 3 counts)
13	Bases, Tenors	move for 8 counts	
14	Bases, Tenors	move for 8 counts	Follow Direction of Movement
15	Bases, Tenors	move for 8 counts	
16	Bases, Tenors	move for 8 counts	Face Fixed Angle
17	Bases, Tenors	move in 8 counts	
18	Ensemble	hold for 8 counts	
19	Bases	move for 2 counts	Play (over 1 counts)
20	Bases	move for 2 counts	
21	Bases	move for 2 counts	
22	Bases	move for 2 counts	
23	Bases	move for 2 counts	

Options

☒ Expand rows to fit

Sort by: (Performers Report Only)

☐ Director's Report ☐ Original Entry Order

☒ Performer's Report ☒ Label and Symbol

☒ All Performers ☐ Name

☐ Selected Performers ☐ Symbol and Label

Remember Options

Previous Next

Print / Preview

Save as PDF OK

Click on the **Performer's Report** button to view the Performer Report data.

The Performer's ID (Name, Symbol, Label from the [Cast List](#)) for the performer you're currently viewing is displayed at the top of the window.

Each **Set** (or page tab) in the drill is displayed, along with a **Group Name** and a brief **Transition Description** for the group.



No titles in the Group Name column? See the [Command Editor](#) page for an explanation as to why that happens, and how to easily fix it.

Visual Description information is generated from the [Visuals Editor](#).

Expand rows to fit will expand any row with too much data to print in a single line.

Previous and **Next** buttons cycle through the reports of each performer in the drill.

The option to print either all performer reports or only reports for selected performers is found under the **Performer Report** button. When **Selected Performers** is chosen, reports will only print for performers that have been selected on the design grid prior to opening the Print Instruction option.

You can sort the Performer Reports by **Original Entry Order**, **Label and Symbol**, **Name**, or by **Symbol and Label**.

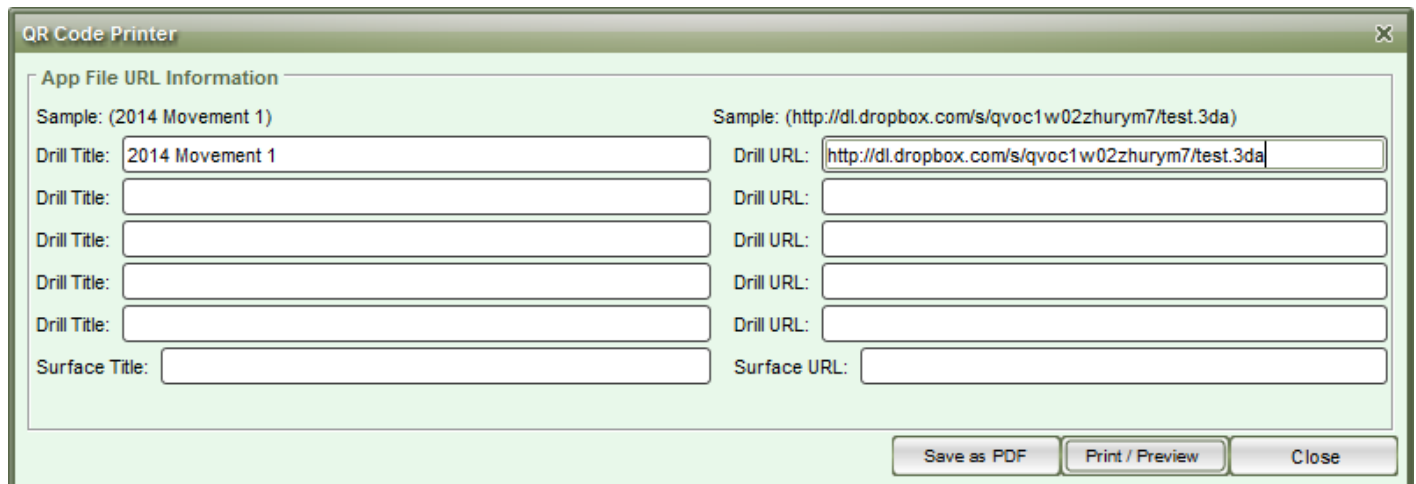
From this window, you can either create a PDF of the Director Report by selecting **Save as PDF**, or print a hard copy by selecting **Print/Preview**.

Printing QR Codes

QR Codes are a simple way to share the links to mobile app files (drills and surfaces) that are being stored through various cloud storage applications. Since tablets and phones have the ability to easily scan a QR code through a camera, this is often one of the quickest ways to distribute your mobile application drill and surface files.

Printing a QR Code

To print a QR code, go to [File](#) and choose **Print QR Code**. The QR Code Printer window will appear.



The image shows a 'QR Code Printer' dialog box with a title bar and a close button. It contains a section titled 'App File URL Information'. Below this, there are two columns of input fields. The first column is for 'Drill Title' and the second is for 'Drill URL'. The first row is pre-filled with '2014 Movement 1' and 'http://dl.dropbox.com/s/qvoc1w02zhurym7/test.3da'. There are four more empty rows for these fields. At the bottom, there are three buttons: 'Save as PDF', 'Print / Preview', and 'Close'. There is also a 'Surface Title' and 'Surface URL' section at the bottom, but it is currently empty.

You'll need to enter 2 pieces of information in order to create a QR code for a drill: the **Drill Title** and the **Drill URL**.

The **Drill Title** can be anything you wish to call the file; it does not have to be the exact file name. This is generated purely for naming the QR code. When viewing a drill in the mobile app, the drill's Title from [Document Options](#) will display.

The **Drill URL** is the download link (not to be confused with the share/view link that many cloud storage services provide) for the mobile file that has already been saved to a cloud storage service.



Be sure that you enter the URL to **download** the drill file, not the URL to share the file. For example, if you upload a file to Dropbox, then "share" the file (or copy the link's location), when you paste the URL it will read <http://www.dropbox.com/.....>. This link will not work. However, if you change the WWW in the URL to DL, so it reads <http://dl.dropbox.com/...>, that will initiate a download of the file, which is what is required by the mobile app. See [Viewing Drills on iOS](#) for further explanation.

Click **Print/Preview** to preview and print the QR code(s). **Save as PDF** will create a PDF file for your QR code(s).

Surfaces

Similar to drill files, custom surface files can be shared via QR codes. Type in the Surface Title (again, this does not have to match the file name) and download URL for the surface file.

Once complete, click **Print/Preview** to preview and print the QR code(s). **Save as PDF** will create a PDF file for your QR code(s).

Utilities

The Utilities menu contains many functions for editing the contents of a drill file. These range from a powerful Drill Rewrite tool, utilities for altering the appearance and dimensions of your design grid, as well as adding or removing the number of counts in a drill or transition.

Click on the arrow next to **Utilities** in the Table of Contents to the left to expand this section and begin.

Create Movie

Click [here](#) for an in depth guide on how to create a movie of your drill's animation.

Drill Rewrite

The **Drill Rewrite** tool is an editor which can add or remove performers from an entire drill file. Depending on the situation, you might prefer to adjust the interval for the addition or subtraction of performers in the drill file, or simply leave a hole (when removing performers). This is especially useful for blocks and filled shapes. The **Drill Rewrite** editor can adjust intervals or leave holes, depending on your choice. This powerful editor can also adjust the transitions of the shapes.

When the **Drill Rewrite** adds or removes a performer, it looks at each shape where the performer is involved throughout the drill. If intervals for those shapes need to be adjusted to accommodate the removed performer, only the shapes where the performer resides will be changed. This section will cover how to ensure only the necessary shapes are changed when intervals change.

For example, you may find that combining two or more shapes into one larger shape may make more sense when the **Drill Rewrite** starts adjusting the shape intervals. Imagine at set #3, two arcs are drawn end to end to make an S shape, and a performer we plan on removing is part of one of the arcs. If we choose to adjust the intervals to accommodate the removed performer, the arc where the performer resides will be adjusted, but the other arc intervals will remain unchanged. We might have preferred that the intervals would adjust across the entire S shape. To make this happen, we would need to glue the two arcs into a single S shape before using the Drill Rewrite. Now when the Drill Rewrite look to see which shape is involved at set #3, it will find an S shape instead of two independent arcs.

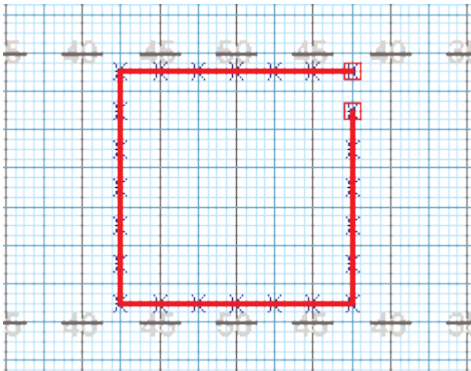
You may sometimes find that cutting a shape into a smaller segment may make more sense when the **Drill Rewrite** starts adjusting the intervals of the shape. Having your drum line (which often uses mixed intervals)

connected as part of a larger form would be a prime example. Since the drum line uses a mixed interval, if you altered the intervals of the larger form via the Drill Rewrite, you would overwrite the mixed intervals of the drum line, with the results being nothing short of catastrophic. To accommodate for this, prior to using the **Drill Rewrite**, we would want to visit the set at which the drum line is connected to a larger form, and knife the drum line from the rest of the form. This will allow the larger form to adjust the interval in the **Drill Rewrite** without changing the mixed interval the drum line is set in.

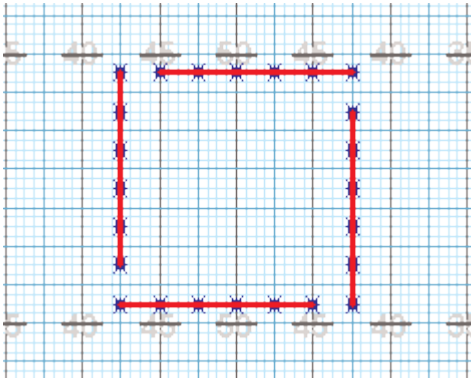
Evaluate the Drill

To check and see if shapes need to be combined from another shape or cut out of a shape, do the following:

- Click on the first page tab and select [Select All](#) from the [Edit](#) menu.
- Evaluate how shapes are grouped, especially the shapes that you expect to be involved in interval adjustments during a drill rewrite. The shape will be involved when one or more performers within the shape are to be removed or added. For example, if a performer of this square is to be removed, then the intervals of the entire box will be adjusted because the performer resides in the box shape.



- If regrouping appears to be needed, select which shape needs to be regrouped. Select either the [Knife](#) or [Glue](#) tool and make the necessary adjustments to the grouping of the involved shape(s). In this example, we want the performer to reside in only one side of the box and not the whole box. This is done by cutting the box into four lines.

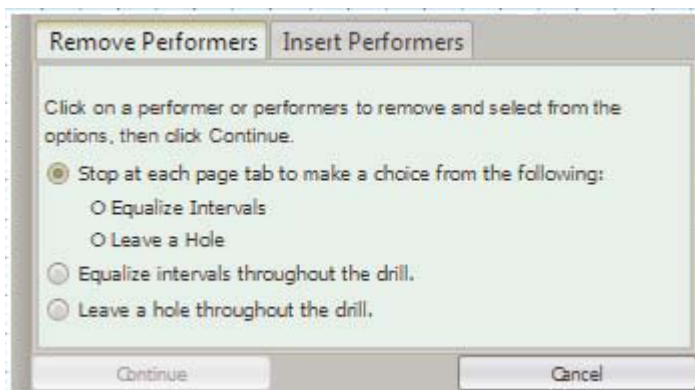


- Repeat these steps at each page tab in the drill.

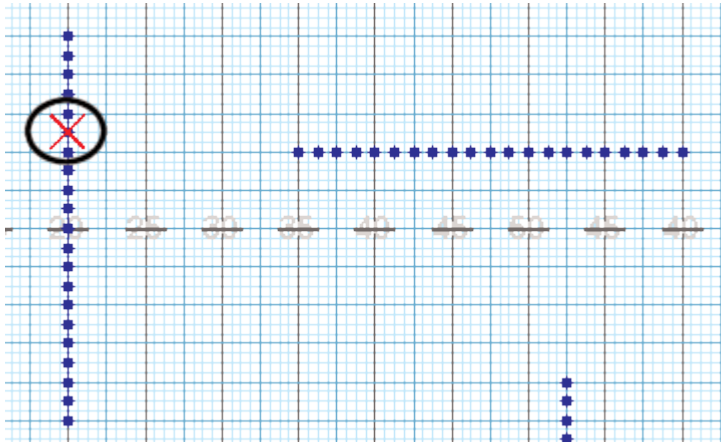
Removing a Performer

The **Remove Performer** option will delete a position from the entire drill. You can specify whether the shape should have an adjusted interval once the performer is removed, or leave a hole.

- Select **Drill Rewrite** from the [Utilities](#) menu and the **Drill Rewrite Control Panel** will appear. The **Drill Rewrite** will only edit a drill file that has first been saved. You may be asked to save before continuing.



- Click on the performer(s) you wish to remove from the drill.



Stop at each page tab will display each count that has a **page tab** and highlight the performer to be removed. You will decide how the shape is to handle the removal of the selected performer. For example, if the shape is part of a filled block of horizontal and vertical lines, it may be preferred to leave a hole in the shape rather than to adjust its intervals.

Equalize Intervals adjusts the intervals of each shape that the removed performer(s) occupies.

Leave a hole throughout the drill leaves a hole in each shape that the removed performer occupies.

- Click **Continue** and the **Rewrite Control Panel** will display. A red X will appear on top of each performer that is about to be removed. The **Rewrite Control Panel** will display the counts that are about to be involved. Depending on the options set, one or more of the following buttons are available:

Equalize will equalize the intervals of the shapes involved during the count range shown in the control panel.

Leave a Hole will keep a hole in the shapes involved during the count range shown in the control panel.

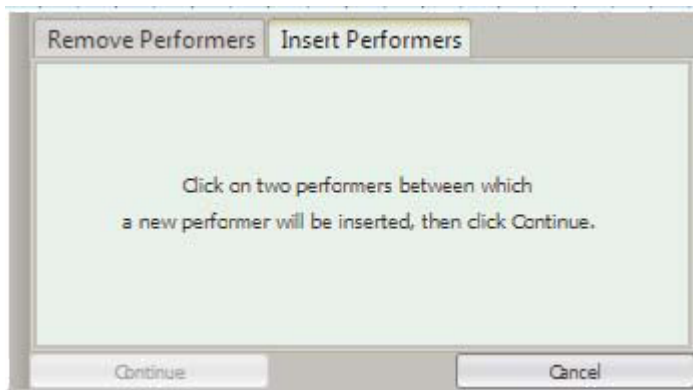
Undo Last Set backs up the previous count range rewritten.

Cancel reverts to a saved version of the drill.

Adding a Performer

This function will add a performer to an entire drill and resize shape intervals. While the Drill Rewrite function is an extremely powerful tool, it cannot do everything (yet). In this case, when using the Drill Rewrite, *a performer can only be added between two performers that remain adjacent throughout the entire drill.*

- Select **Drill Rewrite** from the [Utilities](#) menu and the **Drill Rewrite Control Panel** will appear. The **Drill Rewrite** will only edit a drill file that has first been saved. You may be asked to save before continuing.
- Click the **Insert Performers** tab.



- Click on the performer adjacent to the location where you want a performer to be added. The performer you selected and the adjacent neighbor will be highlighted. If the selected performer and their neighbor do not highlight, this means these performers do not remain adjacent to each other throughout the drill. You must select a different pair of performers to use with the Drill Rewrite function.



Performers that do NOT remain adjacent to each other throughout the drill will have a large red "X" on top of their symbol. These performers cannot be selected to insert a performer between them.

- Click **Continue** and the **Rewrite Control Panel** will display. A blue dot will appear on top of each performer that will surround the newly added performer.

Equalize will equalize the shapes within the drill.

Cancel will revert to the last saved version of the drill.

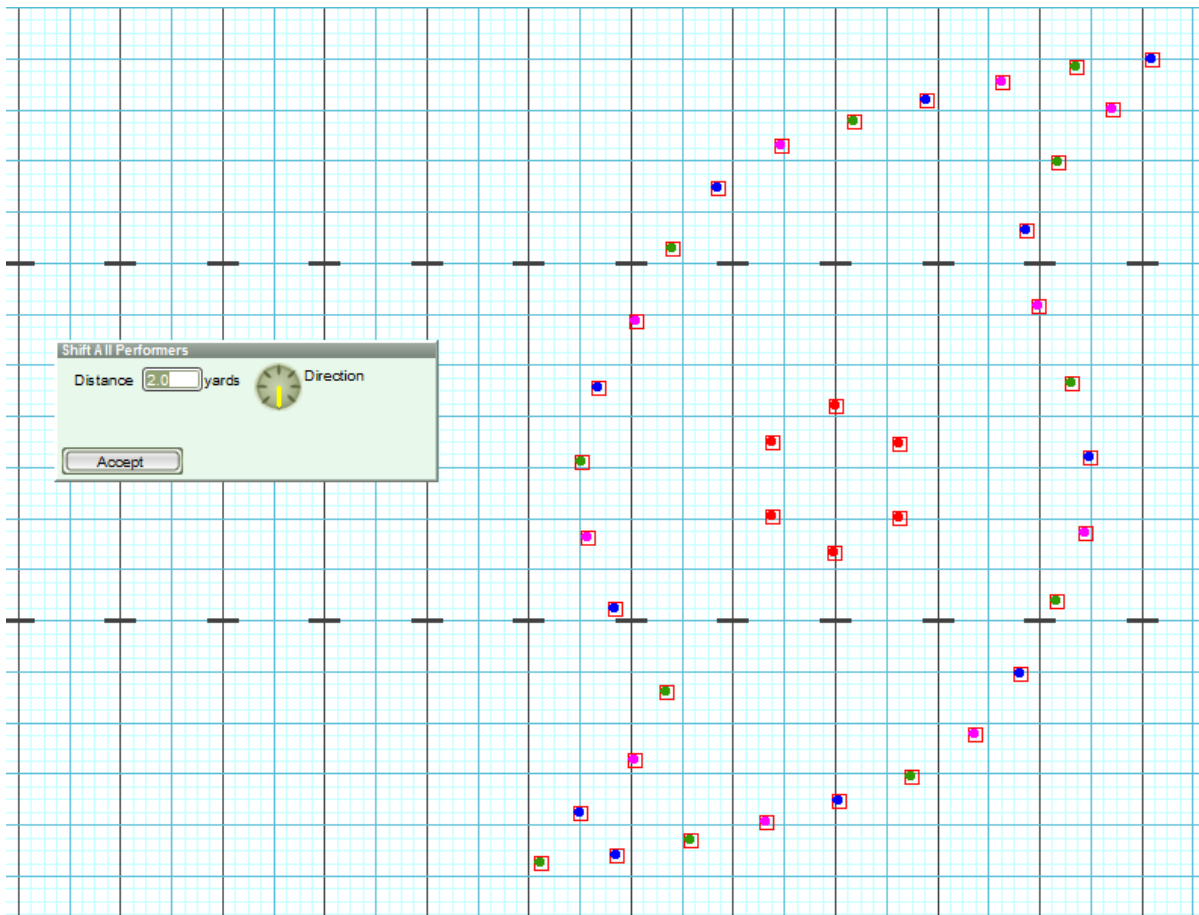


For more discussion on adding performers via the Drill Rewrite, visit the following Quick Start page: [Adding Performers via the Drill Rewrite](#).

Shift All Performers

Shift All Performers is a function found in the [Utilities](#) menu that will adjust all performers in a certain direction (that you specify) for the entirety of the drill. This is helpful if the show was written too far from the front side line and needs to be adjusted forward without rewriting each set.

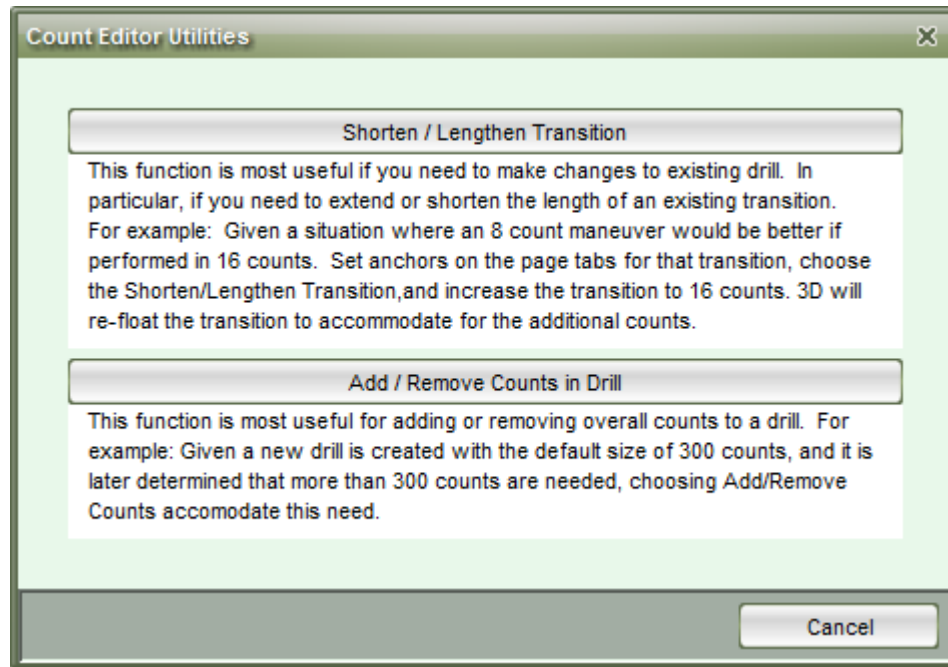
To shift all performers in a drill, go to the **Utilities** menu and click on **Shift All Performers**. The **Shift All Performers** control panel will appear.



Every performer will have an **editing handle** on top of them. This means you can click and drag anyone on the field, and the entire form will move. Alternatively, you could enter the distance you wish to shift in the **Distance** box in the tool's control panel, then click on the **directional compass** to move them to the correct location on the field.

Count Editor

The **Count Editor** is an editor which is used to insert or remove counts from a drill. This editor can also be used to shorten or lengthen transitions.



Shortening or Lengthening Transitions

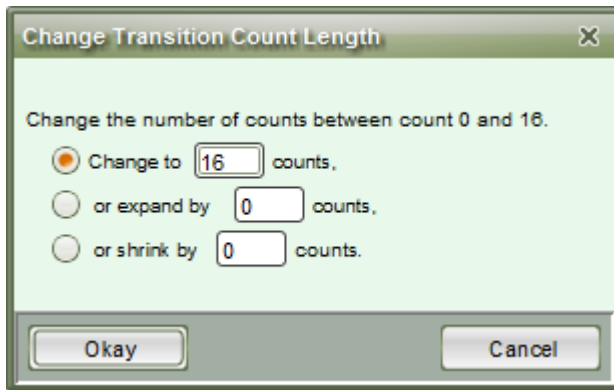
This function of the **Count Editor** is particularly useful if you need to make changes to an existing drill file. When editing a file using the **Shorten/Lengthen Transition** option, 3D will automatically recalculate the transition and steps needed to get from the beginning to the end of the transition, depending on your input in the **Count Editor**. Simply put, once you specify how you would like to change the transition, 3D takes care of the rest.

To shorten or lengthen a transition, your anchors must be spread on the [Count Track](#). If you haven't already, we recommend setting **page tabs** to indicate where each form (or set) "hits".

- Click on the ending page tab (where your transition "hits" the form) so your **Red Anchor** is on the ending page tab, and your **Yellow Anchor** is on the previous set.
- In the [Utilities](#) menu, open the **Count Editor**. Select **Shorten/Lengthen Transition**.
- A new window will appear with various options on how to change the transition; by adjusting the total transitional counts, by expanding by X counts, or by shrinking by X counts



Depending on the complexity of the maneuver, some Follow the Leader maneuvers may need to be redone when using the **Shorten/Lengthen Transition** option. All other transitions should not need any further adaptation.



Let's say we had a 16 count transition that we wish to reduce to 8 counts. For this example, you could either choose the 1st option, to change the transition to "8" counts, or the 3rd option, to shrink the transition by "8" counts. Either option would yield the same result.

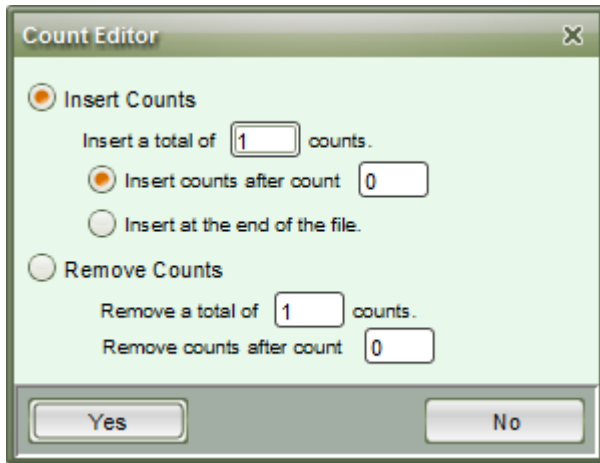
If we decided we needed to lengthen our 16 count transition by 8 counts, we could either choose the 1st option and change the transition to "24" counts, or the 2nd option (expand by "8" counts).

Add or Remove Counts in a Drill

The **Add/Remove Counts in Drill** option is most useful when you are needing to edit the total number of counts in a drill file. By default, a 3D drill file has 300 counts in the file. If the movement of drill you're designing requires more counts than 300, we would need to add counts in this drill file to accommodate.

To add or remove counts in a drill file, go to the [Utilities](#) menu and choose **Count Editor**. Select the **Add/Remove Counts in Drill** option.

A new window will appear with various options on how to add or remove counts in the drill file.



When adding (inserting) counts to a drill, you'll have the option to either add counts after count X (which you specify), or at the end of the file.

When removing counts from a drill, you can specify where you would like to pull the counts from.

Cast List Editor

Whether you have a large or small ensemble, the Cast Sheet is a very useful tool. The Cast Sheet will display and print all symbols, labels, and names of the performers in the drill.

Cast List Editor

Name	Label	Symbol	Notes	Height
Flute	3	F		0'-0"
Flute	4	F		0'-0"
Flute	5	F		0'-0"
Flute	6	F		0'-0"
Flute	7	F		0'-0"
Flute	8	F		0'-0"
Flute	9	F		0'-0"
Flute	10	F		0'-0"
Flute	11	F		0'-0"
Flute	12	F		0'-0"
Flute	13	F		0'-0"
Flute	14	F		0'-0"
Flute	15	F		0'-0"
Flute	16	F		0'-0"
Guard	1	G		0'-0"
Guard	2	G		0'-0"
Guard	3	G		0'-0"
Guard	4	G		0'-0"
Guard	5	G		0'-0"
Guard	6	G		0'-0"
Guard	7	G		0'-0"
Guard	8	G		0'-0"
Guard	9	G		0'-0"
Guard	10	G		0'-0"
Guard	11	G		0'-0"

Options

Sort:

- ☐ by order entered
- ☐ by Name, Symbol, Label
- ☐ by Label, Symbol, Name
- ☒ by Symbol, Label, Name
- ☒ Print all symbols black.
- ☒ Show unlabeled cast members.
- ☒ Expand rows to fit.

When you select [Print Cast Sheet](#) from the [File](#) menu the **Cast List Editor** will display.

Print **Sort** order will sort the names in the Cast Sheet according to one of the following options: by **Symbol, Label, Name**; by **order entered**; by **Name, Symbol, Label**; or by **Label, Symbol, Name**.

The **Name** can be entered using the [Performer Labeling](#) tool or directly in this window.

The **Figurine** column allows for the assignment of figurines to each performer in the Cast List. These figurines are shown in the [Classic Perspective View](#) only.

Notes is a place on the printout for taking notes on performers.

Print all symbols black will print all symbols in the Cast List black instead of the color defined by the [Label](#) tool.

Show unlabeled cast members shows all performers (even the performers with no label) on the **Cast List Editor** window and on the printout. Hiding unlabeled performers from a printout is useful for stationary performers (such as the pit).

Edit Symbol Map opens the [Symbol Map Editor](#). Here you can set default uniforms and equipment for symbols you frequently use.

Import Cast Information allows you to import cast information from an existing drill. This includes names, labels, and Real View visuals (or Figurine data if the Classic Perspective is enabled). Imported data will overwrite any existing Cast List data.

Print/Preview will open the page setup display and show a preview of the Cast List report according to the settings of the Print Cast Sheet dialog.

Save as Default saves the settings of the **Sort** order.

Done exits the **Print Cast Sheet** window.

Symbol Map Editor

The Symbol Map Editor is a huge time saver in 3D. With this tool, you can save a set of default values (such as uniforms and instrumentation) for symbols you frequently use when designing, then apply these values with the click of a button.

Symbol to Perspective Editor

Symbol-To-Perspective Map for
Untitled

Keypress	Symbol	Uniform	Hat	Equipment	Figurine (v6)
!		Male Band Uniform 1	Shako With Plume 1	Bass Drum 1	Bass Drum Figure
"		Male Band Uniform 1	Shako With Plume 1		
#		Male Band Uniform 1	Shako With Plume 1	Bass Drum 1	Bass Drum Figure
\$					
%		Male Band Uniform 1	Shako With Plume 1		Default Figure
&	🚩	Female Guard Uniform 1	No Hat	Rectangle Flag 1	Rectangular Flag Figure
'	🚩	Female Guard Uniform 1	No Hat	Rectangle flag 2	
(Male Band Uniform 1	Shako With Plume 1	Bass Drum 1	Bass Drum Figure
)		Male Band Uniform 1	Shako With Plume 1	Bass Drum 2	Bass Drum Figure
*	✳	Male Band Uniform 1	Shako With Plume 1		
+	✚	Male Band Uniform 1	Shako With Plume 1		
,					
-		Male Band Uniform 1	Shako With Plume 1		Cymbal Figure
.		Male Band Uniform 1	Shako With Plume 1		Blank Figurine
/		Female Guard Uniform 1	No Hat	Curved Flag Style 1 - Slot 1	Curved Flag Figure
0	⑩	Male Band Uniform 1	Shako With Plume 1		
1	①	Male Band Uniform 1	Shako With Plume 1	Bass Drum 1	
2	②	Male Band Uniform 1	Shako With Plume 1	Bass Drum 2	
3	③	Male Band Uniform 1	Shako With Plume 1	Bass Drum 3	
4	④	Male Band Uniform 1	Shako With Plume 1	Bass Drum 4	
5	⑤	Male Band Uniform 1	Shako With Plume 1	Bass Drum 5	
6	⑥	Male Band Uniform 1	Shako With Plume 1		
7	⑦	Male Band Uniform 1	Shako With Plume 1		
8	⑧	Male Band Uniform 1	Shako With Plume 1		
9	⑨	Male Band Uniform 1	Shako With Plume 1		
:		Female Guard Uniform 1	No Hat	Rifle Style 1 Slot 1	Rifle Figure
;		Male Band Uniform 1	Shako With Plume 1	Sousaphone	Sousaphone Figure

☒ Show Figurine Column for Classic Perspective View.
Useful if you plan to save the file as a Version 6 file.

Apply Map to Count 0 Save As Defaults Save Revert Cancel

The **Keypress** column shows what buttons are available for symbols. These cover the majority of keys on your keyboard. The keypress is which key you press in the "Symbol" blank in the [Performer Labeling](#) tool when assigning symbols to performers.

The **Symbol** column shows what symbol is displayed based on the keypress you entered. Some fonts have special characters for certain keypresses. For other fonts, the keypress and symbol might be close to identical.

The **Uniform** column allows you to set which uniform you would like to be assigned for which symbol.

Like the uniform column, the **Hat** column allows you set which hat you would like to be assigned for which symbol.

The **Equipment** column displays what equipment or instrument the performer will carry for the assigned symbol. For example, by default, the F symbol carries a flute.

The **Figurine** column is used for the [Classic Perspective View](#).

The Uniform, Hat, Equipment and Figurine columns are all editable. You cannot edit the Keypress column because those are the only keys available for use on your keyboard (in 3D), and you cannot edit the Symbol column because these are bound to the keypresses.

Apply Map to Count 0 (zero) will assign equipment and uniforms from the Symbol Map to the performers in your drill file, based on the symbols you gave performers through the [Performer Labeling](#) tool.

Save as Defaults will remember any changes you have made to the Symbol Map Editor for use in any future file.

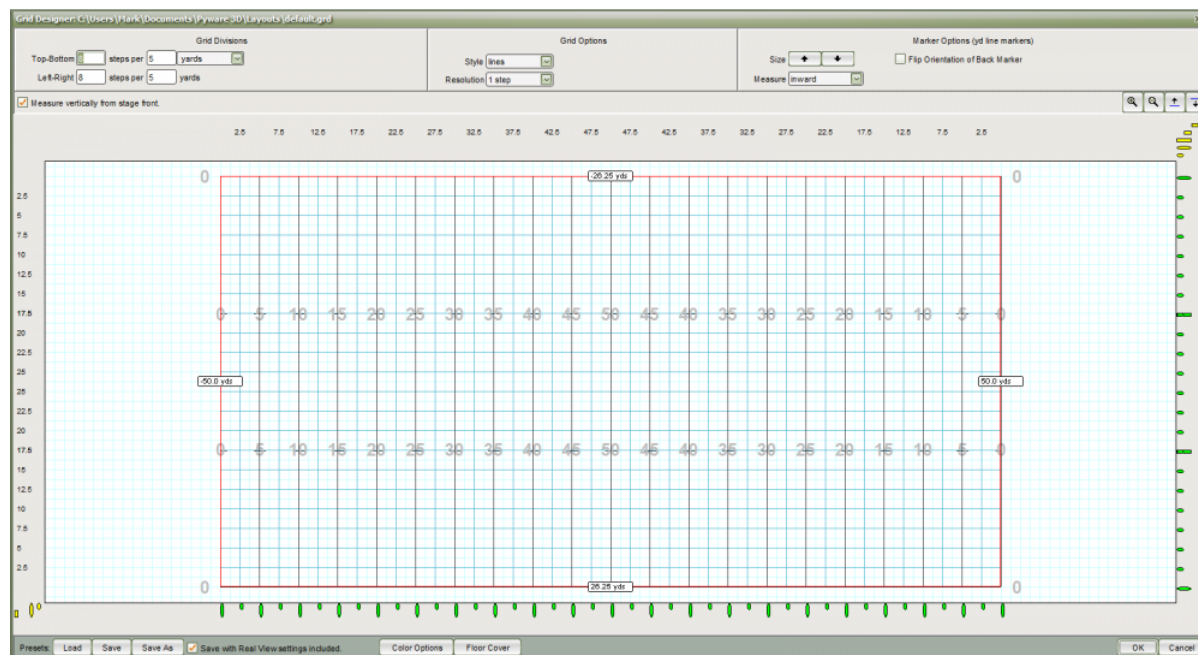
Revert will revert any changes made back to the last saved version of the Symbol Map.

Grid Designer

The **Grid Designer** is an editor which is used to create custom grid layouts. 3D can accommodate many grids, such as soccer fields, football fields, gymnasiums for winter guard and indoor drum lines, stages, and streets.

Custom grid layouts are stored in the **Layouts** folder inside the Pyware 3D user Documents folder. When a new drill file is created, a grid layout is chosen. That layout is embedded into the drill file. If a drill file is given to another 3D user, the recipient does not have to have a copy of the layout in order for the drill file to be displayed correctly.

To load the **Grid Designer**, select **Grid Designer** from the [Utilities](#) menu. The current field grid will display inside the editor.



Grid Divisions

The **Left-Right [] steps per [] yards** options sets the underlying horizontal step grid. This also establishes the way the **Location Indicator** of the [Console](#) and performer **Coordinates** measure locations on the field.

Top-Bottom [] steps per [] yards sets the underlying vertical step grid. These values are typically the same as their Left-Right counterparts.

Grid Options

Style allows you to change the step division grid to either lines or dots.

Resolution changes the frequency at which you would see the step division markings between the yard (major) lines.

Marker Options

Marker Size The up and down buttons will increase or decrease the size of the yard (major) line division markers

Measure changes the way the **Location Indicator**, Field Markers, and Coordinates use the yard (major) line markers. Typically winter guard designers measure from the center yard (major) line marker outward. Field designers follow the yard line markers on football fields and measure inward.

Measure vertically from stage front: This option sets the vertical measurement of the **Location Indicator** to measure incrementally from the front side line (0 steps) to the back side line (typically 84 steps). If this option is not checked and the **Measure** setting is inward, the **Location Indicator** measurement from each side line will start with 0 (steps) and incrementally increase until the cursor reaches the center of the field (typically 42 steps).

Zoom buttons will either zoom into, or zoom away from the center of the grid area. These are the magnify glass buttons above the grid.

Field Relocation buttons – clicking on the slide up button moves the grid area higher on the screen. Conversely, the slide down button moves the grid area lower on the screen.

Division Markers are the large numbers running from one end of the field grid to the other. The numbers are located at each major division line. They designate the number of yards across the grid. Usually, these Division Markers are used as yard line markers on a football field, where the center marker is the 50 yard line.

Division Markers are movable. For example, the markers displayed horizontally can be dragged vertically to any location. With football field grids, the markers are often placed in the exact location as they appear on the field, however it is sometimes preferable to move the markers just off of the field grid area so as to not clutter the display or printout.

Markers can be hidden so that only certain yard line markers will be shown. To hide the Division Marker, double click on the large oval (**editing handle**) that corresponds to the yard line and it's marker you wish to remove. Double click the large oval (**editing handle**) again to have the yard line marker reappear.

Clicking on an **Editing Handle** presents the option to customize Division Markers. This is extremely helpful when designing for indoor ensembles, as they would typically be performing on a surface without yard lines. Coordinate printouts will reference whatever letter or number you label a yard (major) line with.

Custom Division Markers

To customize the **Division Markers**:

- Go to the [Utilities](#) menu and choose **Grid Designer**
- Click on a green **edit handle** for the yard (major) line you wish to label
- Type in the value for the Custom Marker (you'll find the box towards the top of the window, just under the Grid and Marker Options)

Field Grid Border this is the red border surrounding the grid. On a football field, the border represents the side lines and the end zones. In the middle of each of the four border lines is a number that represents the location of the border in relation to the center of the grid. Borders can be adjusted by clicking and dragging on these numbers.

Division Line, **Sub-Division Line**, and **Hash Mark** editing handles located along the bottom and right margins can be dragged to move the lines or hash marks up and down or across the grid area. The **editing handles** associated with **Division Lines** are the longer ovals. **Editing handles** associated with **sub-division lines** are the smaller ovals. **Editing handles** associated with **Hash Marks** are rectangular in shape. All the editing handles are yellow until they are moved onto the grid, at which point their color changes to green. To add a line or hash, drag a new handle out of the handle bin into the grid area. To remove a line or hash, drag its editing handle back into the bin area. The small numbers located along the left and top margins of the editor indicate in yards the location of the line or hash. When creating a grid representing a football field, it may be interesting to note that you can add as many hash marks as you would like.

Save with Real View settings included will save any Real View data to the grid layout you edit and save.

Color Options are used to change the color of the grid elements. Clicking on **Color Options** will display **Grid Color** choices. Within the **Grid Color** dialog, clicking directly on a color swatch will display a color palette for changing the color.

Save and **Save As** will save the field grid layout to the **Layouts** folder.

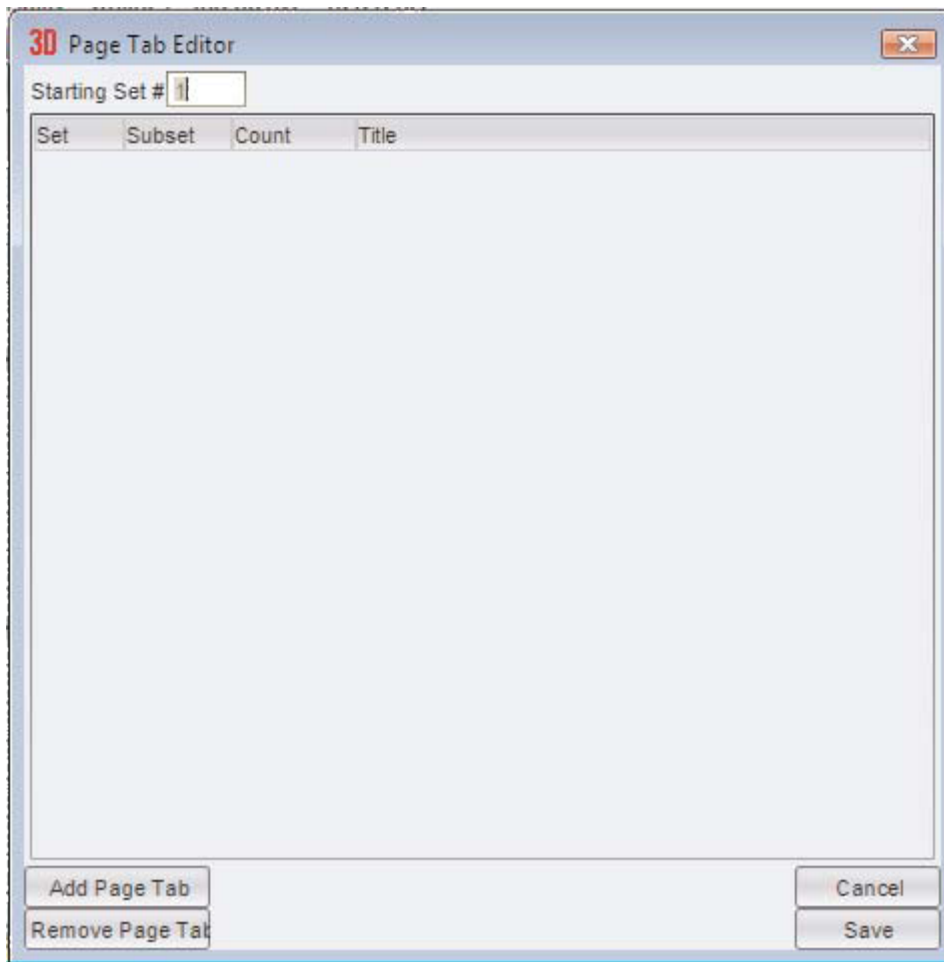
Clicking **OK** will copy the current field grid layout in the **Grid Designer** into the currently opened drill file.

Clicking **Cancel** will exit the **Grid Designer** without changing the grid layout currently embedded in the opened drill file.

Page Tab Editor

*This feature is only found on the Basic Edition, or versions 3 and earlier of 3D. The [Production Sheet](#) replaces the **Page Tab Editor** on Interactive and Professional editions.*

The **Page Tab Editor** is a utility that allows you to easily add, remove, and change any page tabs that appear on the [Count Track](#).



Starting Set # will change the starting set number. For example, if the first drill ends with page 23, the continuation file can begin with page tab 24.

The **Add Page Tab** button adds a page tab at a count entered.

Remove Page Tab removes the page tab that is currently selected in the list of page tabs.

The **Subset** column is useful when moving only a certain section of the ensemble between two major pictures (sets). Say for example, everyone except the guard holds from page 2 to page 3. There's no need to increase the total number of pages for just a guard maneuver between 2 and 3. In this case, you can establish the set as a **sub-set**. This will prevent the set numbers from incrementing the total number of sets, because sub-sets are labeled with letters. Adding a sub-set between our example of pages 2-3 would read, 2, 2A, 3.

Click in the set **Title** column to enter a title for the page tab. When a title is entered, the title will be used in printouts. Page tab titles are useful to clarify reports. For example, imagine page tab #4 is a company front.

Titling page tab #4 “Company Front” will print “Company Front” on any printout where page tab #4 is included.

Production Sheet

Available on *Interactive and Professional* editions only. The **Production Sheet** replaces the [Page Tab Editor](#), which is found on the Basic edition and earlier versions of 3D.

The **Production Sheet** is a helpful tool that allows you to develop your show ideas within 3D before any charting begins. Think of the Production Sheet as a “map” of your drill. Within this tool, you are able to notate which measures of a piece will be the transitions between **Page Tabs**, along with adding any notes, such as “Big Hit” or “winds face back field”.

Set	Sub	Count	Trans...	Measures	Title	Note 1	Note 2	Note 3
1	<input type="checkbox"/>	0	0		SET #1	Opening Set		
2	<input type="checkbox"/>	16	16	1-4	SET #2	Winds-Push-16	Drums-Push-16	Guard-Float-16
2A	<input checked="" type="checkbox"/>	32	16		SET #3			
3	<input type="checkbox"/>	40	8	9-30	SET #4	Winds-Float-16 Hold-8	Drums-Hold-24	Guard-Float-16 Hold-8
4	<input type="checkbox"/>	60	20	11-15	SET #5	Winds-Float-20	Drums-Push-20	Guard-Float-20
4A	<input checked="" type="checkbox"/>	80	20	16-20	SET #6			
5	<input type="checkbox"/>	104	24	23-26	SET #7	Winds-Follow L-20 Hold-24	Drums-Float-20 Hold-24	Guard-Float-20 Hold-24
6	<input type="checkbox"/>	120	16	27-30	SET #8	Winds-Float-16	Drums-Float-16	Guard-Float-16
7	<input type="checkbox"/>	124	4	31	SET #9	Winds-(Groups of 2) Rotate (180 Counter Clockwise)-4	Drums-Hold-4	Guard-Hold-OR-Push-4
8	<input type="checkbox"/>	136	12	32-34	SET #10	Winds-Push-12	Drums-Push-12	Guard-Push-12
9	<input type="checkbox"/>	148	12	35-37	SET #11	Winds-Push Hold-8 L. Turn (to backfield)-4	Drums-Push Hold-12	Guard-Push-Hold-12

Production Sheet Options

Set indicates the set (page tab) number you are working on.

Placing a check mark in the **Sub** column would indicate that the current set is a sub-set.

The **Count** column displays which count a set is on.

Transition shows how many counts there are to get to a particular set.

Selecting a row under the **Measures** column would allow you to input which measures the set is referring to.

Title works much like the **Measures** column. If you click on a row under the **Title** column, you would be able to input a title for that particular set.

Notes columns are there for any quick instructions or notes the ensemble (or you) might need. These notes can be quickly imported into a **Text Box** and display on the field through the [Text Box](#) tool.



Selecting a set on your **Production Sheet** is like selecting a page tab on the [Count Track](#). This is another quick way to preview a set.

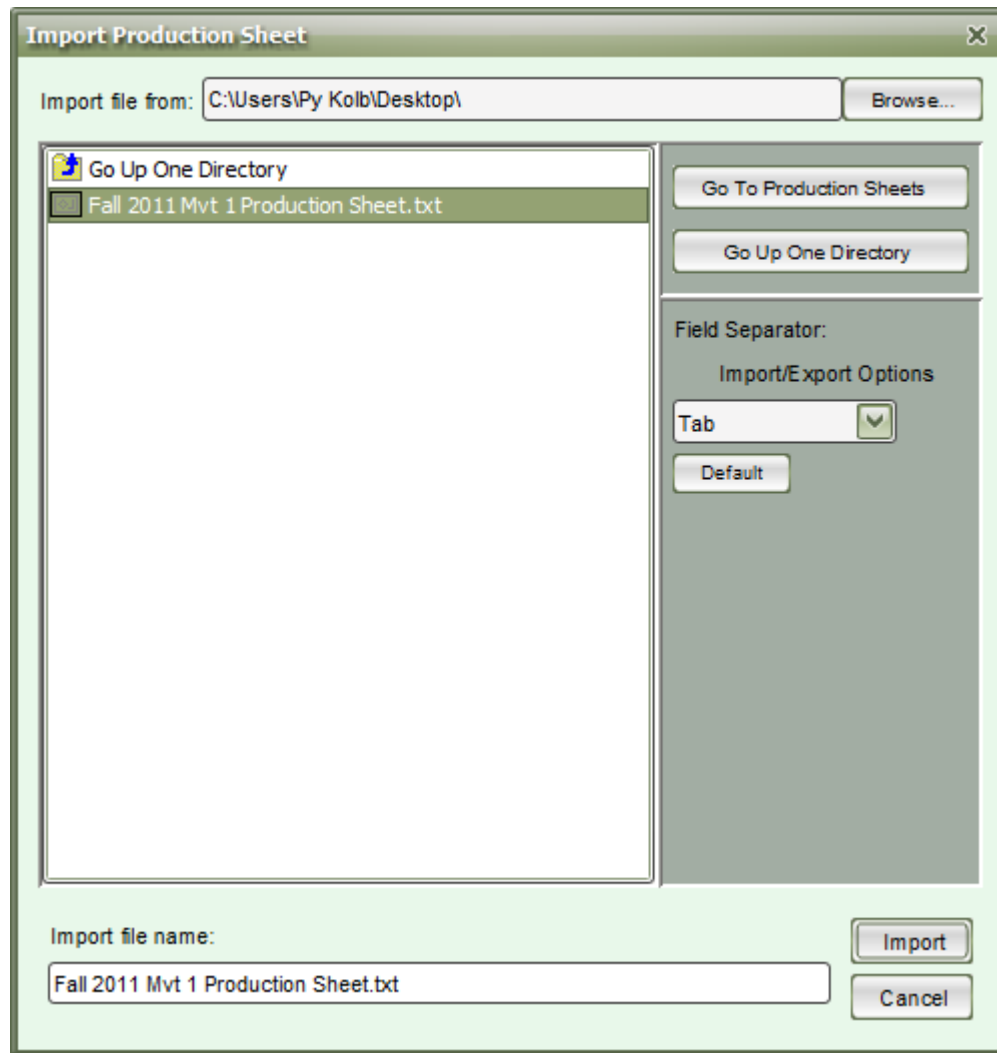
Moving the Production Sheet

By default, the Production Sheet is activated by a roll over with your mouse onto the large Production Sheet button located at the left endzone. To pull the Production Sheet away so you may view the field and Production Sheet at the same time, press the “Detach” button in the upper right corner of the Production Sheet window. You will now be able to drag the Production Sheet anywhere on your screen. To pin the window back to 3D, press the “Pin” button.

Print, Import, and Export the Production Sheet

To **print** the Production Sheet, select **Print** from the Tasks list in the Production Sheet window. Any Notes columns on the Production Sheet that have no information (completely blank for each page/set) will not be printed.

To **import a Production Sheet that has been created from a 3rd party application**, select the ***Import** option from the Tasks list in the Production Sheet window. This will open a new window where you may browse your machine to find the Production Sheet for importing. To specify which field separators were used when creating your Production Sheet, select the appropriate option from the Import/Export Options menu.

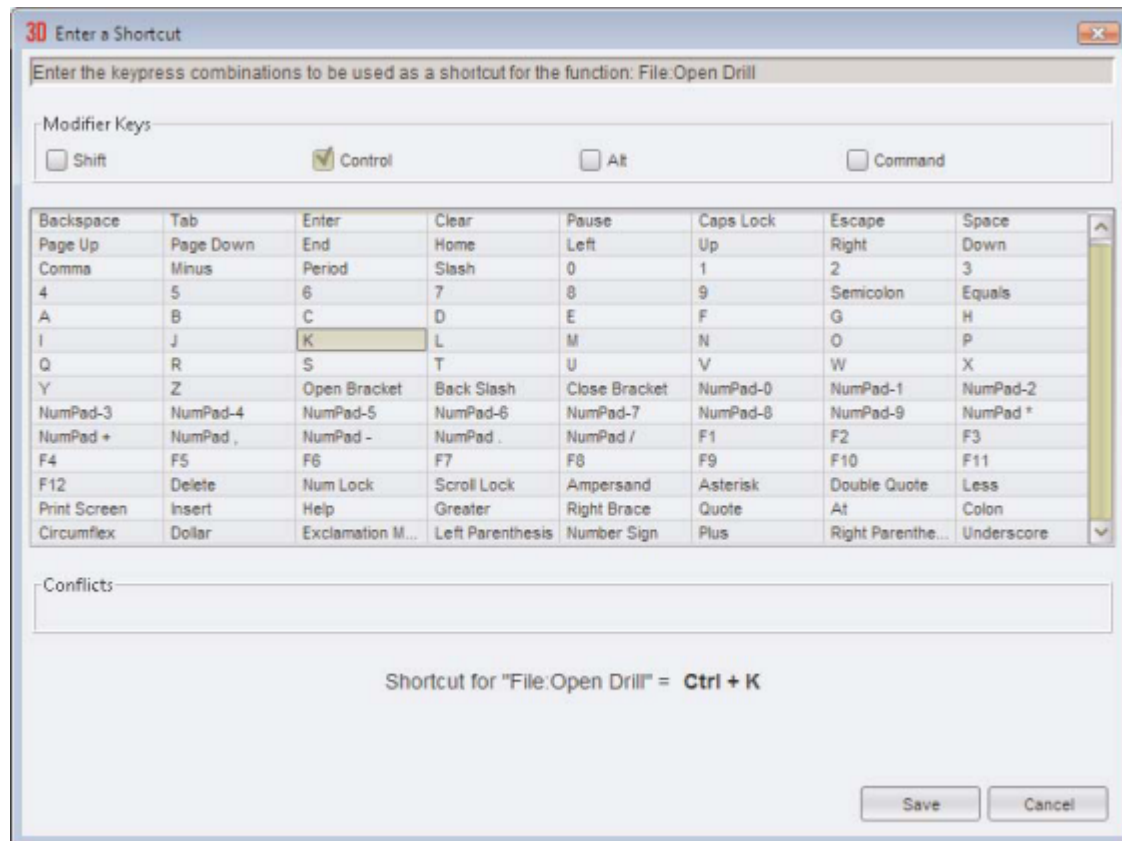


To **export** a Production Sheet, select the **Export** option from the Tasks list in the Production Sheet window. This will open a new window where you may name the production sheet file and select its save destination. To specify which field separators to use in your 3rd party spreadsheet application, select the appropriate option from the Import/Export Options menu.

Shortcut Editor

Many functions of the 3D menu bar can be accessed directly using keyboard shortcuts.

You can create more than one set of shortcuts. This is useful if more than one person is using your installation of 3D. Each individual can setup the shortcuts according to their preferences.



Creating a Shortcut Set

To create your own shortcut set, select a set that most closely matches the set you want to create for yourself. Typically, one choose **Default** as the set to copy. Select the set by choosing a set name from the **Shortcut set** menu appearing at the top of the **Shortcut Editor**. Click **New Set** to make a copy of the currently selected set with a new name. Likewise **Delete** removes the currently selected set.

Editing a Shortcut

To edit a shortcut, click on the shortcut description appearing in the list of shortcuts and click the **Edit** button. Shortcuts from the **Default** set can not be edited. Click the key commands you want to use as the new shortcut.

To remove a shortcut, click on the shortcut description appearing in the list, and click on the **Clear** button. The shortcut will be removed.

To reset a shortcut to its default value, click on the shortcut description appearing in the list, and click **Default**.

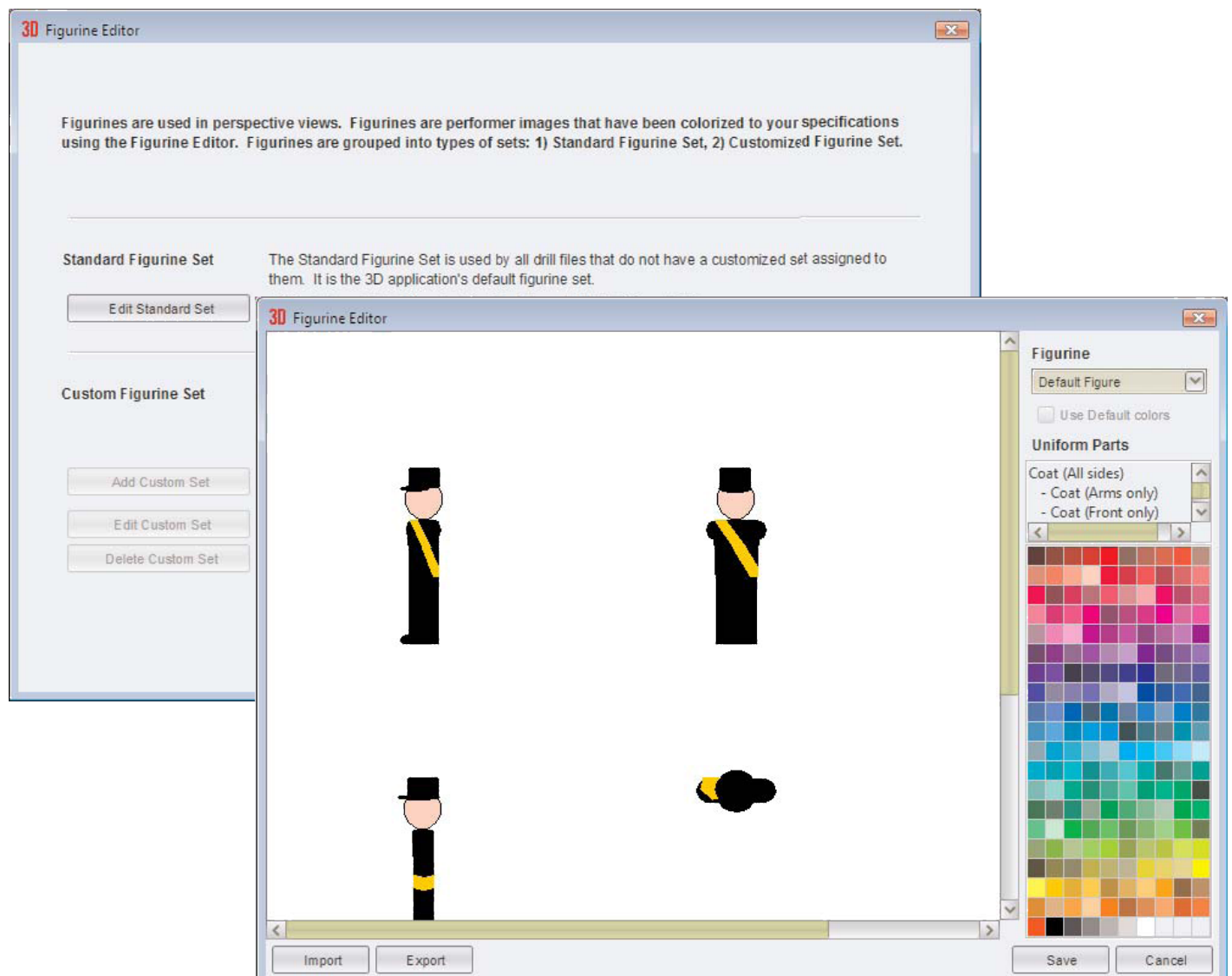
To save the changes click **Save**.

The currently selected **Shortcut Set** will be the set used in the application when the Shortcut Editor is exited after saving.

Figurine Editor

This editor is only enabled when the Classic Perspective View is used.

The **Figurine Editor** is an editor for changing the Figurine uniforms that appear in the [Classic Perspective](#) window. When you open the Figurine Editor you can choose to edit the standard set. The Standard Set is used with any file that does not have a custom figurine set assigned to it.



The **Edit Standard Set** button opens the figurine editor window and allows you to change the default figure uniforms.

The **Add Custom Set** button copies the standard set and adds it to the current drill package, then allows you to edit the uniform colors.

Command Editor

The Command Editor is a utility that allows editing of instructions (commands) for transitional maneuvers. This is particularly useful if you are teaching a military or show-style ensemble, or if you need a printed reference of visuals cues for performers.

These commands are generated by using any of the [Drawing](#) or [Editing](#) tools to transition performers in the drill.

Command Editor

Count Range	Tranistional Counts	Group Name	Transition Description
0-8	8	winds	float
0-16	16	drum line	hold
8-16	8	winds	move
16-24	8	drum line	push
16-24	8	contras	float
16-24	8	trumpets, mellos, baritones	float
24-32	8	drum line	hold
24-40	16	trumpets, mellos, baritones	move
24-40	16	contras	move
32-48	16	drum line	push
40-48	8	trumpets, mellos, baritones	rotate
40-48	8	contras	hold
48-56	8	trumpets, mellos, baritones	push
48-56	8	contras	follow-the-leader
48-56	8	drum line	hold
56-64	8	drum line	push
56-64	8	contras	Float

Options

☒ Expand rows to fit.

Selecting a row in this window will move your anchors on the Count Track for the selected count range. The group of performers for the selected row will be highlighted in the design workspace.
 Group names can be edited.

Print / Preview

Save as PDF

OK

What Are Commands?

Commands are instructions to perform various tasks in a drill. They can include both transitional commands (such as follow the leader) and visual commands (such as horns down).

The Command Editor only shows transitional commands. These include the following, by default:

- Hold
- Float
- Push
- Move
- Follow the Leader
- Track

To print visual commands, see the [Performer's Report](#) section.

Personalizing Command Editor Data

The **Transition Description** column only contains basic commands that 3D has determined as descriptive for the maneuver. Any command in this column can be changed by selecting the appropriate cell and entering the command you wish.

Much like the **Transition Description** column, **Group Names** can be edited.

Why Are All of My Groups Untitled?

The **Group Name** column pulls the names of groups from the [Selection History](#) tool. Grouped (glued) performers in the Selection History tool can be renamed while in the tool, and that naming convention will carry into the Command Editor.

If you see nothing but (untitled) in the **Group Name** column, this means no groups (selections) have been renamed from their symbols in the Selection History tool. You can easily rename any Group Name by clicking in the appropriate cell and typing the name you desire.



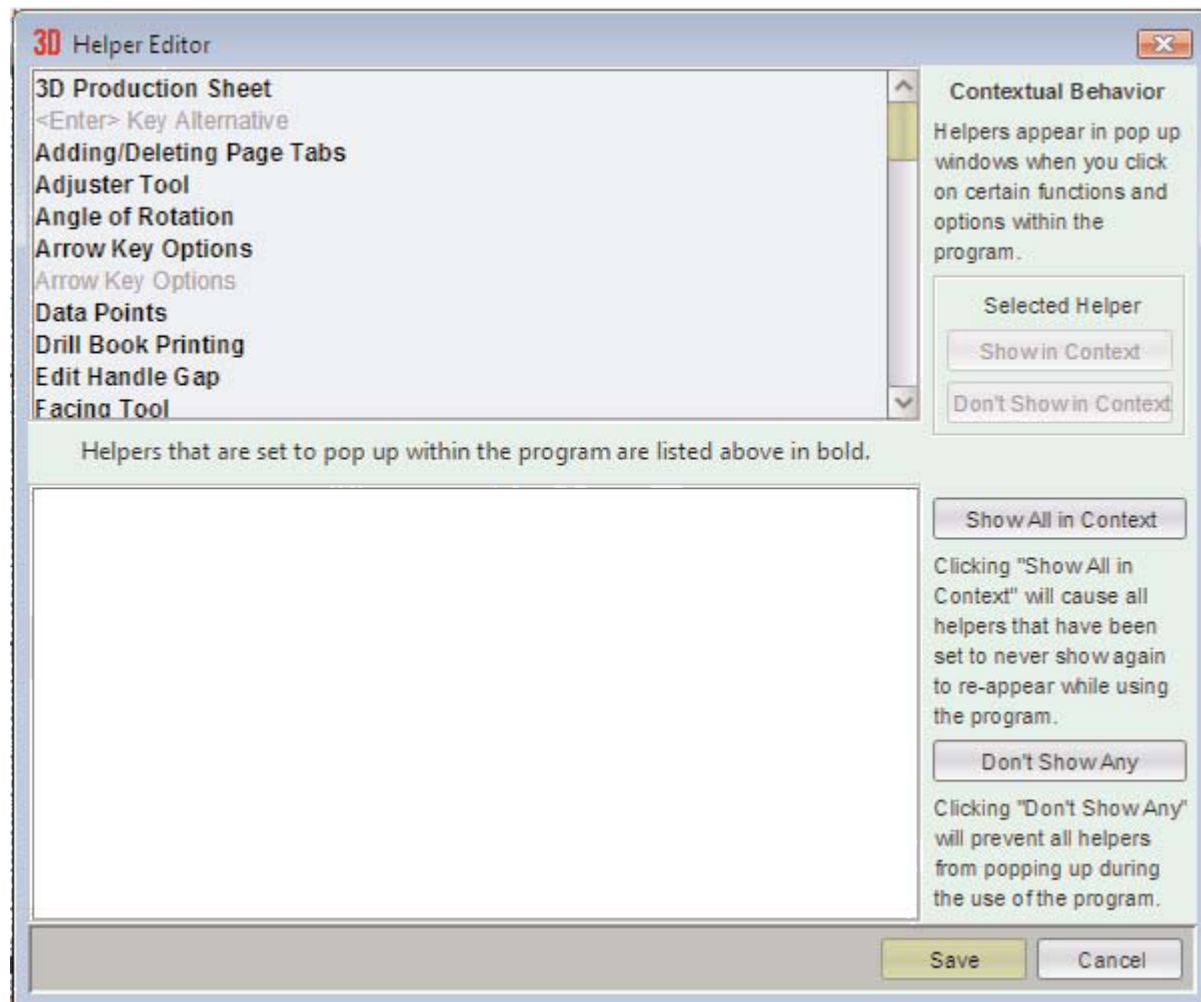
Whenever you click on a row in the Command Editor, your Anchors on the [Count Track](#) jump to the count range and the performers for that selected command will highlight on the field. This allows you to verify you are editing data for the transition and/or group you intended.

Print/Preview allows you to print the Command Editor list.

Save as PDF will create a PDF file of the Command Editor.

Helper Editor

The **Helper Editor** allows you to turn on or off specific helpers and allows you to view all helpers at one time.



Show in Context turns the selected helper on to be seen when its tool or function is activated.

Don't Show in Context turns the selected helper off, and will not be shown when its tool or function is activated.

Show all in Context turns all helpers on to be seen when their tool or function is activated.

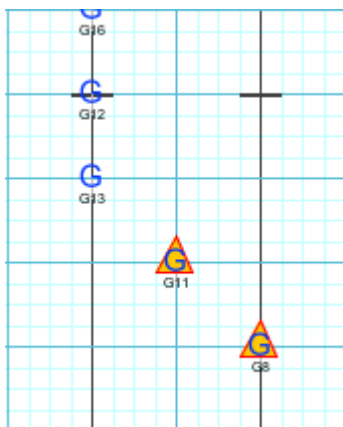
Don't Show Any turns off all helpers, and will not show when its tool or function is activated.

Virtual Clinic

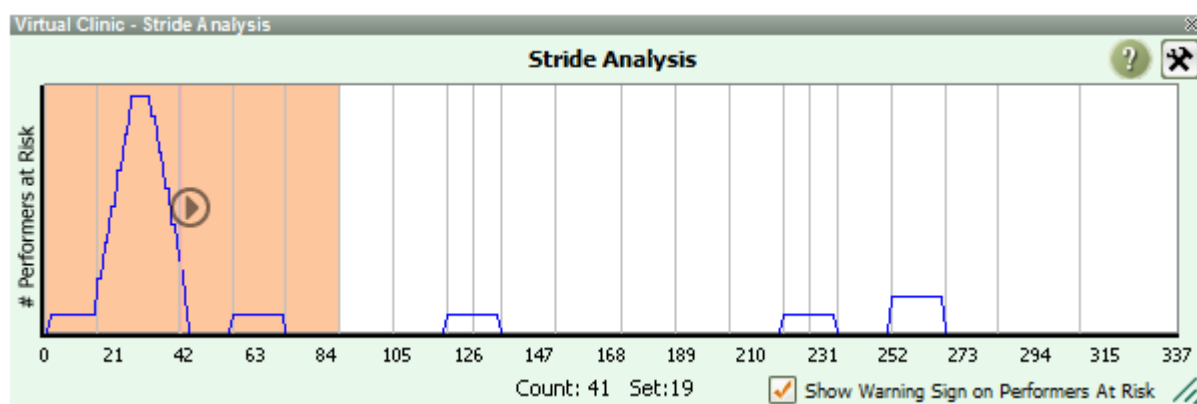
The Virtual Clinic analyzes your drill files both upon opening of a drill, as well as during design. Watching for collisions, excessive strides, large jumps in animation and difficult direction changes, the Virtual Clinic runs in the background and does not require the Analyzer windows to be open while designing.

Virtual Clinic Analyzers are windows with graphs displaying the number of performers at risk (Y axis) over time (X axis). The higher the output on the Y axis, the larger number of performers are at risk, determined by the respective Analyzer.

When the option **Show Warning Sign on Performers at Risk** is selected in a Virtual Clinic Analyzer window, performers deemed “at risk” will have a warning symbol during their “at risk” counts on your design grid.



To view the problematic transition, select a range of counts by clicking (or click and drag for multiple transitions) in the clinic window. Select the **Play** button that appears in the clinic window when a transition/range of transitions is selected. This will play a looped animation for the range of counts you have selected.



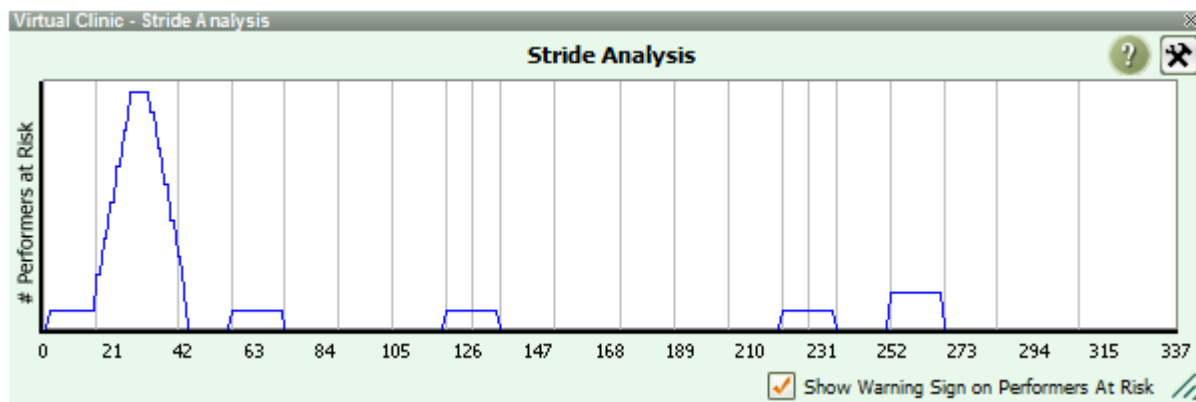


Transitions can only begin and end on sets (page tabs) when playing the animation from a clinic window.

To open a Virtual Clinic window, go to the Clinic menu and select which Analyzer you would like to be displayed. To close a clinic window, uncheck the option under the Clinic menu, or click the close button on the clinic window.

Stride Analyzer

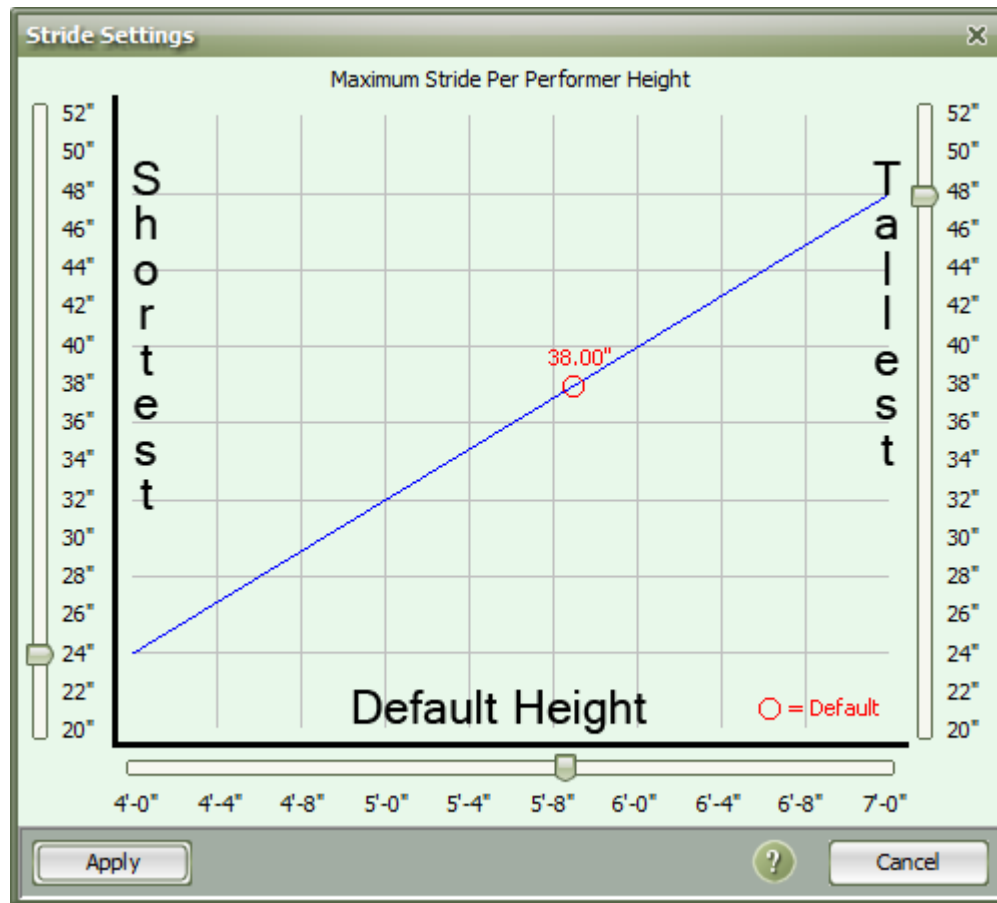
The Stride Analyzer watches for excess stride and graphs output in the Stride analysis window. The higher the output on the graph, the more performers are taking too large a step.



Selecting the option to **Show Warning Sign on Performers at Risk** in the Stride Analyzer window will display a visual warning symbol on the performer(s) at risk on counts where the stride might be too large. This will be displayed on your design grid.

3D has a predetermined set of default excessive strides. To change settings for what is deemed to be an excessive stride, select the **Settings** button in the Stride Analyzer window. When height is not entered for performers in the [Cast List](#), defaults will be used.

Stride Settings opens a new window with a graph displaying maximum stride (Y axis) and average performer height (X axis).



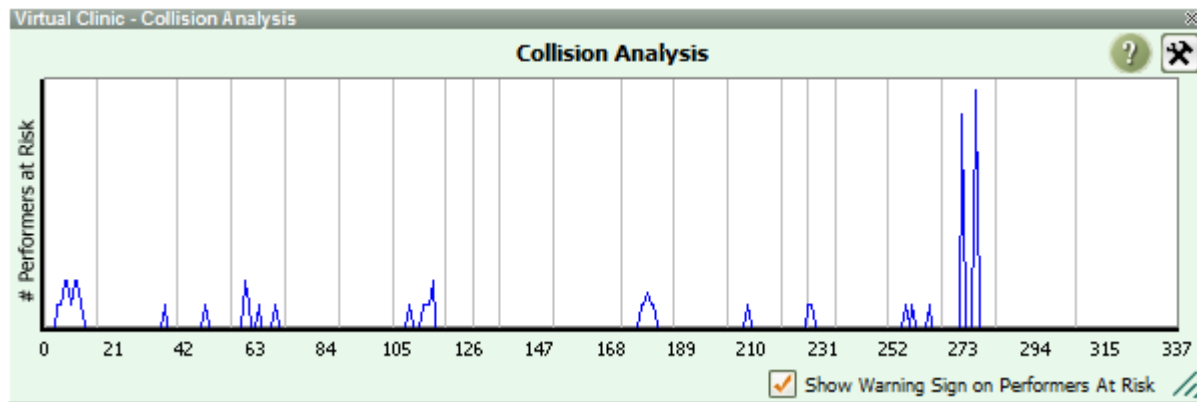
The slider on the left side of the Y axis sets the maximum stride for your **shortest** performer.

The slider on the right side of the Y axis sets the maximum stride for your **tallest** performer.

The X axis slider adjust the *average height* for your band. This is used as the default when height is not specified for performers in the [Cast List](#). The default stride is indicated on the graph by a red circle on the line displaying the maximum strides for the tallest and shortest performers.

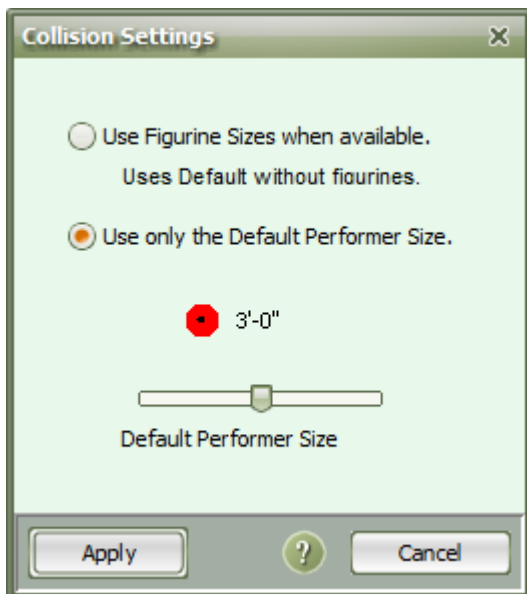
Collision Analyzer

The Collision Analyzer watches for collisions and graphs output in the Collision Analysis window. The higher the output on the graph, the more performers are colliding during those counts.



Selecting the option to **Show Warning Sign on Performers at Risk** in the Collision Analyzer window will display a visual warning symbol on the performer(s) at risk on counts where collisions might occur. This will be displayed on your design grid.

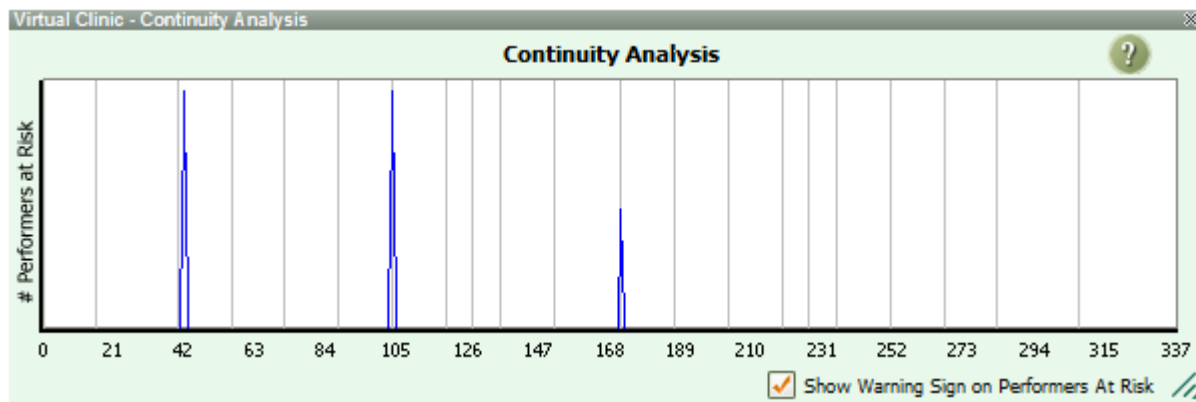
Collisions are based on performer size. This is determined by Figurines or setting the **Default Performer Size** in the Collision Analyzer Settings.



The **Performer Size** is the perimeter around a performer. When setting the Performer Size, you should consider instrumentation and equipment. Performer Size is automatically calculated. To have a more specific threshold for collisions, select the option to use **Figurine Size**. To have the same Performer Size for everyone in the ensemble, use the **Default Performer Size** option and set the value to what works best for your ensemble.

Continuity Analyzer

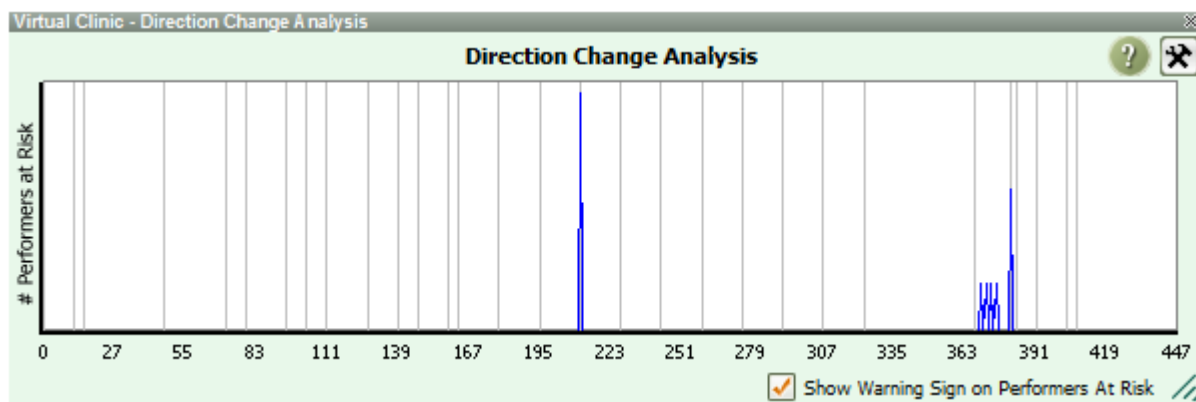
The Continuity Analyzer watches for large jumps in animation. These typically occur when rewriting a transition and the animation is not consistent with your written change.



Selecting the option to **Show Warning Sign on Performers At Risk** in the Continuity Analyzer will display a visual warning symbol on the performer(s) at risk on counts where the jump occurs. This will be displayed on your design grid.

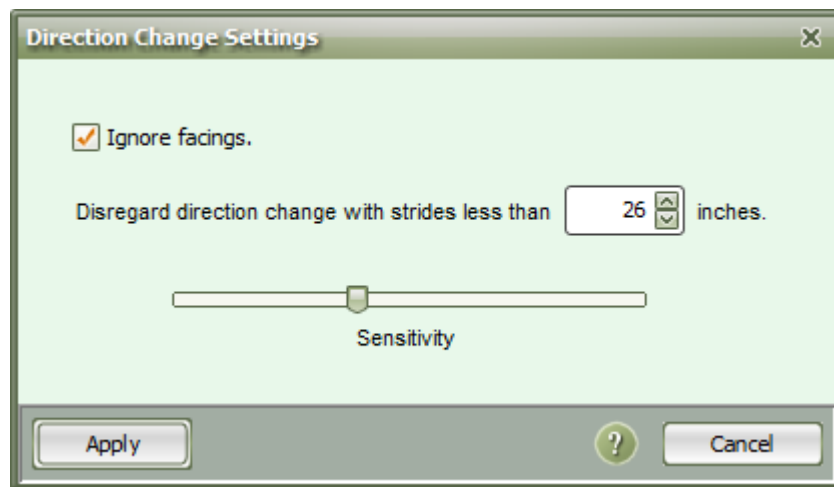
Direction Change Analyzer

The Direction Change Analyzer watches for difficult direction changes for performers in a drill.



Selecting the option to **Show Warning Sign on Performers At Risk** in the Direction Change Analyzer window will display a visual warning symbol on the performer(s) at risk of a difficult direction change. This will be displayed on your design grid.

You can adjust the sensitivity at which the Virtual Clinic thinks is a difficult direction change in the Direction Change Analysis Settings.



The **Ignore facing** option will ignore the facing of performers. Deselect this option if you would like the Virtual Clinic to account for performer facing during the drill.

Disregard stride will ignore strides that are shorter in length than the value you set.

The **Sensitivity** scrub bar is where you can adjust the threshold for the Direction Change Analyzer to set “at risk” performers. Move the scrub bar left to make the Direction Change Analyzer less sensitive, and right for more sensitive.

Design Techniques

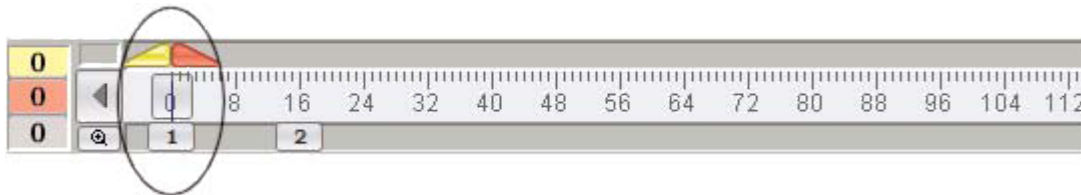
The following topics cover a few of the more advanced design techniques when charting in 3D.

Click on the arrow next to **Design Techniques** in the Table of Contents to the left to expand this section and begin.

Writing Backwards

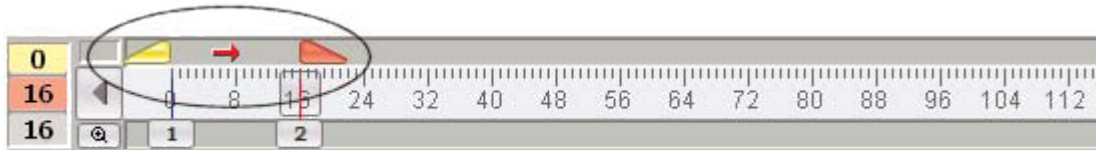
There will be times when you might wish to write backwards from a set later in the drill. For example, imagine your second set of a drill is actually the opening formation, and the first set is a transition into the opening formation. In this case, it is easier to create the opening formation at the later count first, then chart backwards to the beginning of the drill.

As with the above example, set #2 is the opening formation. In this case we need to create performers for the first time in the drill at set #2. These performers do not exist anywhere else in the drill file. Place both editing anchors at set #2. If you are charting backwards from a set of existing performers, skip this step. Place both anchors on the [Count Track](#) on the same count. This is necessary for creating “first time” performers. Holding [ALT] (or [OPTION] on Mac) while clicking on a page tab will force both **Yellow** and **Red Anchors** to move together to the tab. With the anchors set up properly, enter the new formations into the drill.

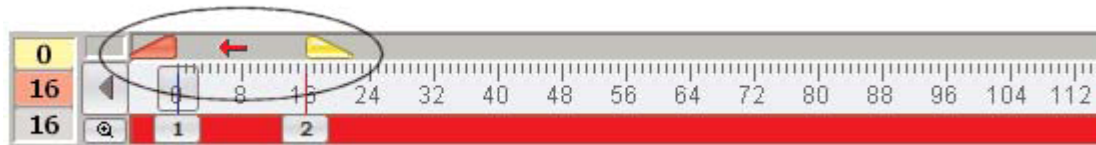


Using the above example, set #2 is the start of the set we have just finished, and now we want to move “backwards” to set #1 to design the ending count and transition between the two sets. Normally we would be thinking about the transition from the previous set (set #1) to the current set (set #2). To set up the anchors for the “backwards” design, set the editing anchors on the Count Track between set #2 and set #1. Click on the small red right arrow on the Count Track appearing between the **Yellow** and **Red Anchors**. The Red and Yellow Anchor will swap locations. Editing of shapes and all transitions will now be written backwards.

Forward drill writing as indicated by the small red right arrow on the Count Track.



Backward drill writing as indicated by the small LEFT arrow on the Count Track and the red warning bar in the Count Track's page tab area.



Do not forget to return the small red arrow back to its normal direction when you're ready to continue writing forward.

Sync Music to Drill

Syncing your music to a drill file is a great way to both visually and audibly preview the drill before hitting the field. You can synchronize an audio file at *any* point of your design process; whether it be the first or last thing you do to the drill. Some prefer to sync audio before any charting takes place, while others might wait until the drill is finished (or until you get a copy of the audio file, whichever comes first).

A 3D drill file can be synchronized to one of the three following types of audio files:

- **MID = MIDI audio file**
- **WAV = Waveform audio file**
- **OGG = Ogg Vorbis audio file**

We recommend using an **OGG** file as out of the three, .ogg files tend to be the smallest with the highest quality sound.

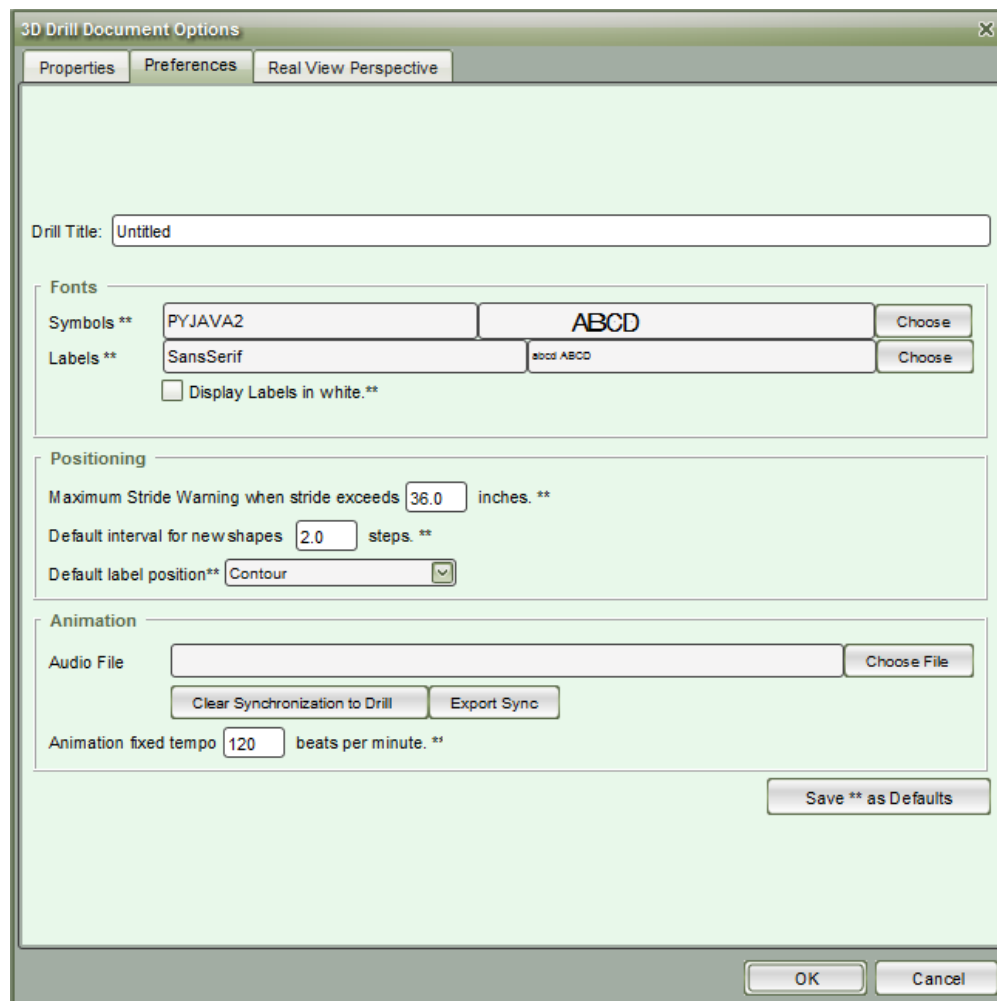


If your audio file is in a format other than the 3 file types listed above, you'll need to convert the audio file to one of the 3 supported files types. There are many free audio converters available online, however we recommend [Audacity](#) for its ease of use.

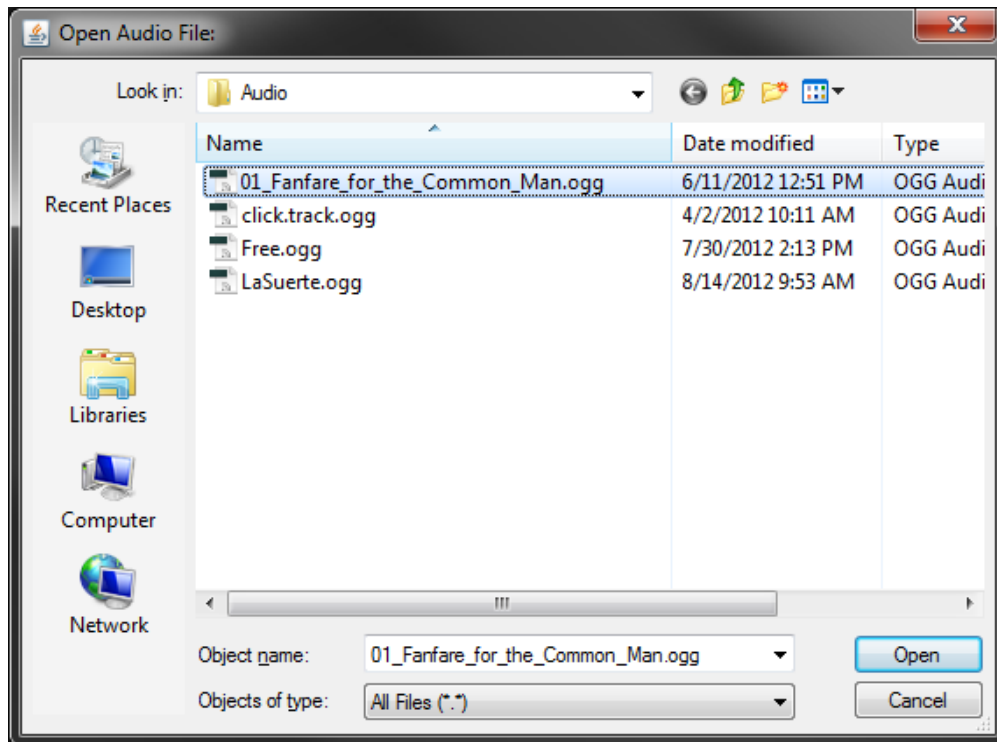
To sync an audio file, you'll need to do the following:

Load the Audio File in to Your Drill

With your drill opened, go to the **File** menu and open **Document Options**. In the **Document Options** window, click on the **Preferences** tab.



Click **Choose File** for the audio file and select the audio file you wish to sync. Depending on where your audio file is saved, you may need to select **Browse** to navigate to the exact location of the audio file on your machine.



Once you have selected your audio file, apply the the change in **Document Options** by pressing **OK** in the **Document Options** window.



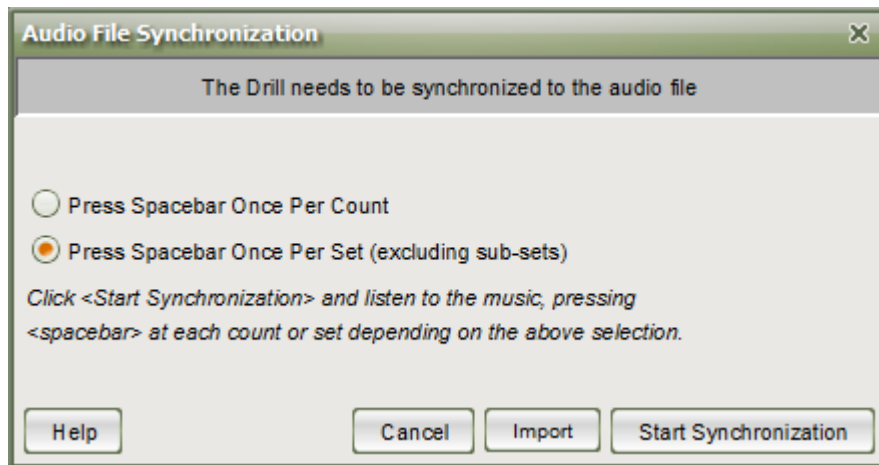
Any audio you wish to sync must be saved on your computer. A stream from a web page will not work.

Syncing the Audio File

Once the audio is loaded into your drill file, you'll then be ready to sync. Press the **Sound** button in the animation controls on your **Count Track**.



A new window will appear with options on how to sync the audio file.

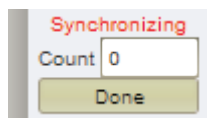


When syncing audio to a drill, you will be asked to sync by **count** or **page**.

Sync Audio by Count

To sync an audio file to a drill by count, choose **Start Synchronization**. The audio file will begin playing immediately once you press **Start Synchronization**, so be sure you're ready to go before pressing this button.

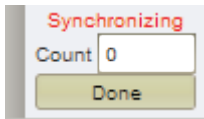
You'll want to press the [SPACEBAR] on your keyboard for each downbeat in the audio file. Each press of the [SPACEBAR] will advance the audio sync one count. When the sync is complete, press the **Done** button on the **Count Track**.



Sync Audio by Set

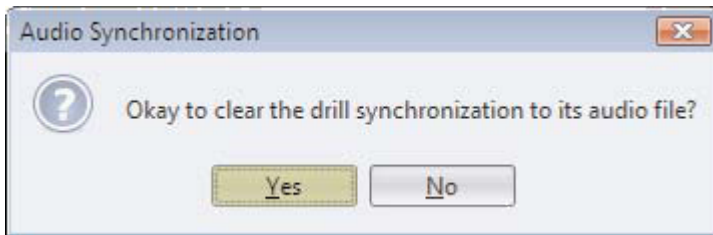
To sync an audio file to a drill by set, choose **Start Synchronization**. The audio file will begin playing immediately once you press **Start Synchronization**, so be sure you're ready to go before pressing this button.

You'll want to press the [SPACEBAR] on your keyboard on the 1st count of every transition (excluding sub-sets). This will sync the count data to music between the page tabs. When the sync is complete, press the **Done** button on the **Count Track**.



Re-syncing the Audio

Nobody is perfect the first time. If you need to re-sync the audio to the drill, you can clear the current sync by holding your [ALT] key (or [OPTION] on Macintosh) while clicking on the **Sound** button. A new window will appear, confirming that you wish to clear the current audio sync.



Once the sync has been cleared, you can then re-sync the audio by following the same steps above.

Previewing the Audio Sync with Drill

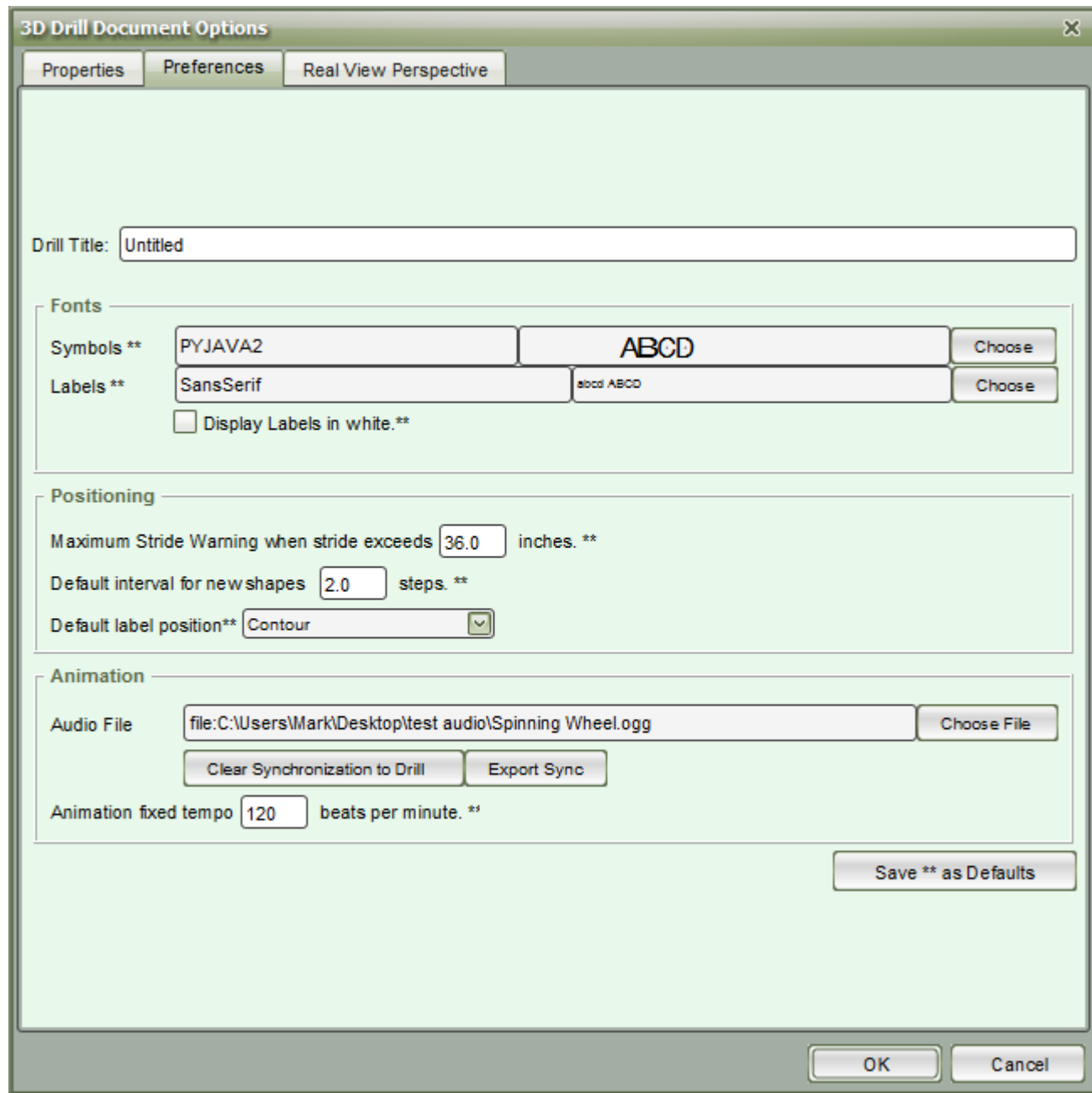
After the audio file is synchronized, each time you click on the **Play** button when the **Sound** button is depressed, the music will be played. This works the same whether you are previewing a chunk of drill, or the entire drill file.

Import/Export Audio Sync

Audio Synchronization can be imported and exported between drill files. This is a real time saver if you are working with multiple versions of a file. Importing an audio sync allows you to bypass syncing audio for a file, if the file you are importing into has the same audio sync data.

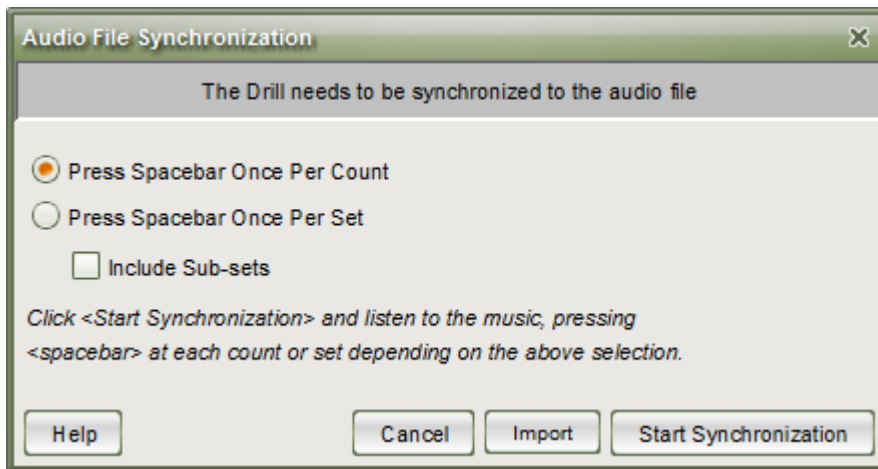
Exporting an Audio Sync

- Go to [File](#), [Document Options](#), and select the **Preferences** tab.
- Choose **Export Sync** for the audio file.
- A Save Drill Sync File window will open; give the audio sync a file name, and specify where you want to save the sync file. Press **Save** when you are done.
- A 3D Audio Sync file (.snc file type) will be created with the name you gave, in the location you specified.



Importing an Audio Sync

- Go to [File, Document Options](#), and select the **Preferences** tab.
- Choose the audio file you would like the drill to sync to, then press OK in [Document Options](#).
- Press the speaker button on the [Count Track](#). A new window will appear, with various options to sync the audio file.
- Choose the **Import** button in the Audio File Synchronization window.
- Select the 3D Audio Sync file (.snc file type) you wish to use, then press **Open**. The drill file will then be synced to the audio file.



Colored Page Tabs

You can quickly assign colored borders to page tabs on the Count Track. This is a great way to organize sets, or make visual reminders of transitions you would need to quickly jump to.

Double-click on a page tab, then choose **Color** in the **Page Tab Options** window. Choose which color you would like to use in the color picker.



Interactive Features

This section covers all functions found in the Interactive menu, including but not limited to: online file manager and its user permissions, checking for updates, re-authorizing / de-authorizing a machine, and purchasing plug-ins and accessories.

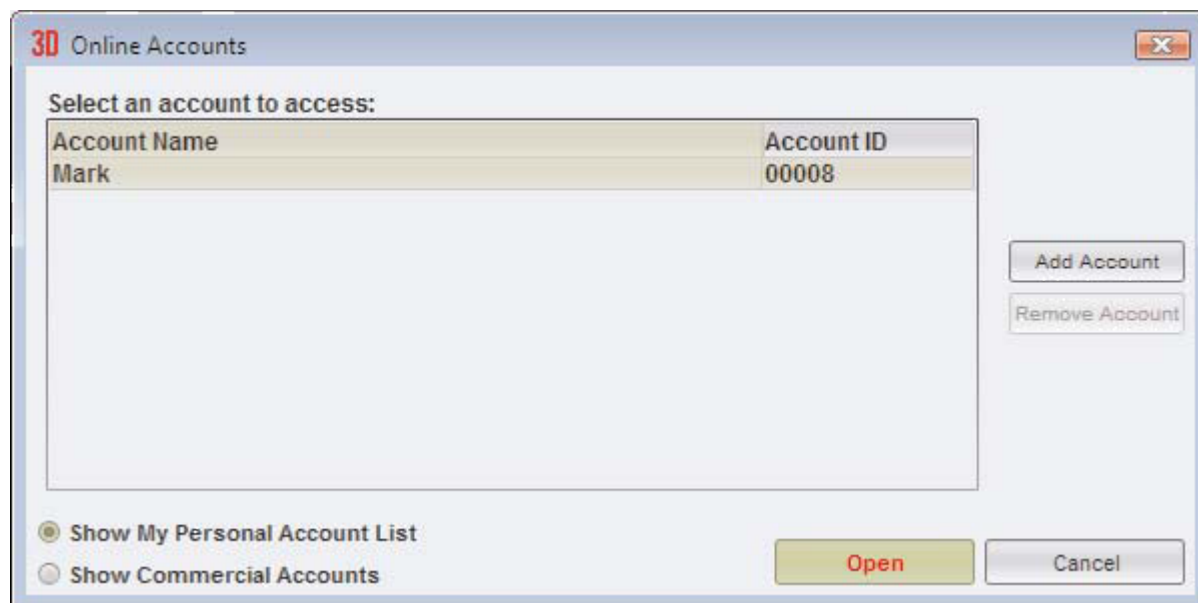
Click on the arrow next to **Interactive Features** in the Table of Contents to the left to expand this section and begin.

Online File Manager

Available on Interactive and Professional editions only.

The **Online File Manager** is a utility that manages the transfer of files to and from your Online Account. Depending on the access privileges you (the account administrator) set up, other users can sign on to your account and read (download) drills. Users can sign on to your account through other 3D applications or through 3D Viewers anywhere in the world.

To start the **Online File Manager** utility, select **Online File Manager** from the **Interactive** menu. The **Online File Manager** will attempt to go online and find the list of accounts that you can access. If the **Online File Manager** successfully connects to the **Pyware Online Accounts** a list of accounts will display.



Add Account will add an account to the list of accounts. If an account is selected in the list, **Delete Account** will remove it from the list.

Show My Personal Account List shows the list of accounts that you have entered either through **Add Account** as well as the account you were given during the initial setup of the program.

Show Commercial Accounts displays the list of commercial accounts currently accessible on the **Pyware Online Account** system*.

Clicking on an account in the list and clicking **Open** will open and display the “Sign On to Account” window. **Cancel** will close the list of Online Accounts, taking you back to the Log On screen.

A screenshot of a Windows-style dialog box titled "Signing on to Account: Mark". The dialog has a close button (X) in the top right corner. Inside, under the heading "Sign on as:", there are two radio button options. The first is "Unregistered User or Group (Anonymous Guest)". The second is "Registered User or Group:", which is selected. Below the selected option, there are three input fields: "User or Group Name:" with the text "Mark" entered, "Password:" with ten dots representing a masked password, and "Location:" with a dropdown arrow. At the bottom left is a "Save Settings" button. At the bottom right are two buttons: "Sign On" (highlighted in yellow) and "Cancel".

When signing on as an **Anonymous Guest**, you will be able to see the files on the account that have been given public access by the account administrator. **Anonymous Guests** are typically students of school accounts, or shoppers on commercial accounts. **Anonymous Guests** require no sign-on name or password.

When signing on as a **Registered User**, a user has unique privileges to see files that may (or may not) be seen by **Anonymous Guests**. These access privileges are set by you, the account administrator. Often **Registered Users** consist of clients of drill designers. These users need private access to the drill(s) that they have commissioned. No one else should be able to access those drills. In order to sign on as a **Registered User**, you must first be registered in the account by the account administrator. Once registered, the administrator will give you a sign on Name and Password.

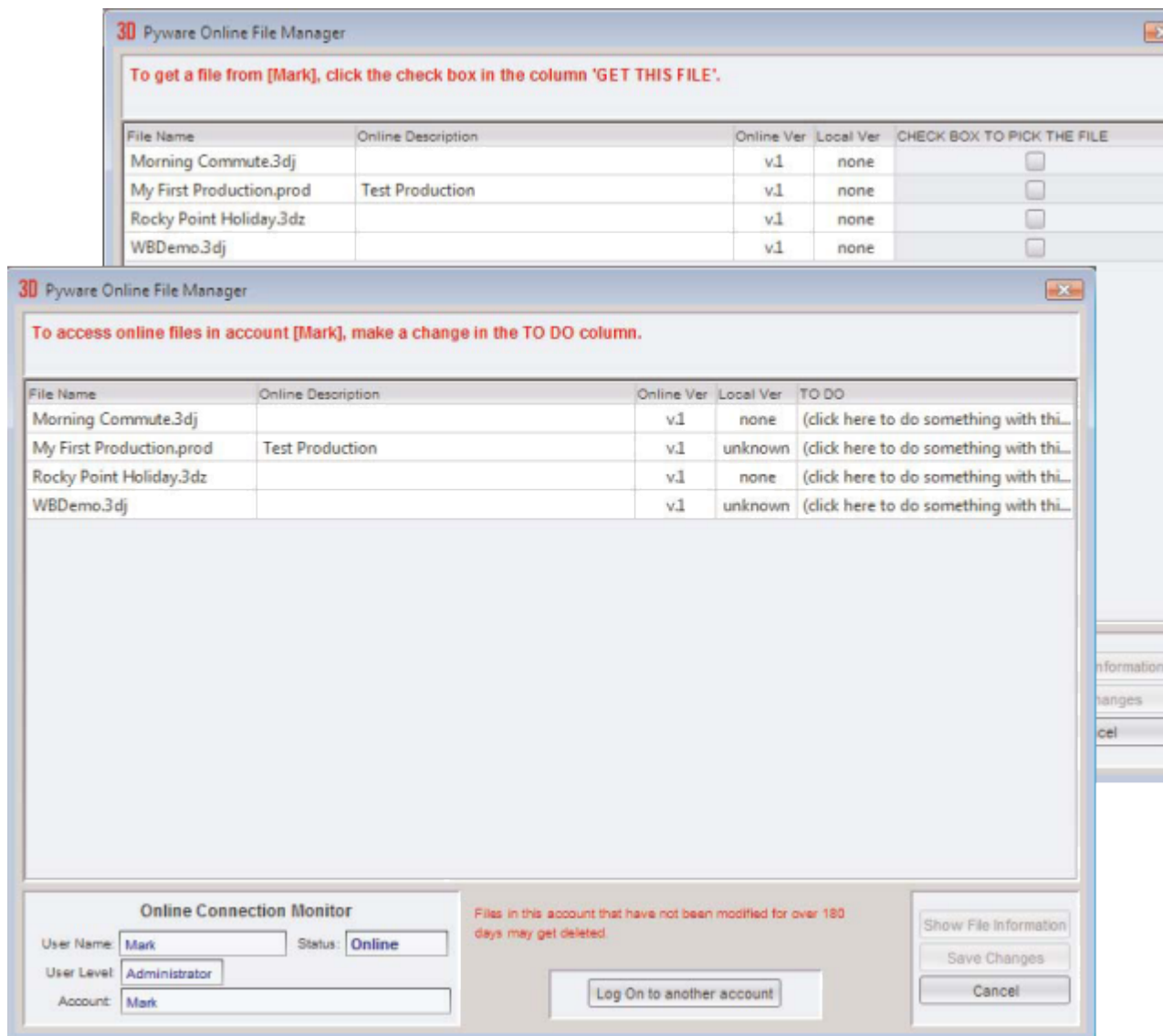
Each account has an Account Administrator. The administrators sign on Name and Password is given to the application's registered user when the online account is set up by Pygraphics. To sign on as an Account Administrator, select Registered User and enter the administrator's sign on Name and Password.

Save Settings is useful if you usually sign on into the same account repetitively because it will save the values you have typed in to make it faster next time you want to sign on.

Cancel will disconnect from the online account system and return to the **Online File Manager**. To reconnect, click **Log On** to another account.

Sign On will sign on to the account and display the list of accessible files.

Once a visitor has signed on to the account, the Online File Manager will display, listing all accessible files.



The **Online File Manager** will display all files the signed on user has privileges to see. You'll see a mix of both local files stored on the host computer, as well as the files located in the **online account**.

File Name is the actual name of the drill file (.3dj), drill package (.3dz), or production (.prod).

File Description is a description of the files, as entered by the account administrator of the online account.

The file **Versions** are useful when determining which copy of a file (local or online) is the most current.

Guests and **Registered Users** signing on to an account will see a **GET THIS FILE** column. The only action these users can perform is to read (download) files from the online account. **Account Administrators** will see a **TO DO** column, as they can perform a variety of tasks, such as uploading, downloading, and deleting files from the online account.

In the figure above notice that only five of the eight files listed are actually in the online account and the rest of the file are located on the local computer. Notice the online file versions for the files that are online are shown in the **Internet Copy** column. If there are local copies that have been downloaded from the online account the **Local Copy** will display the local version. You can use the versions to determine whether the drill file on your computer, or in the online account, is the most current.

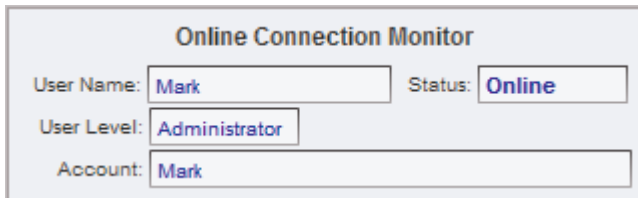
When logged in as the account administrator, there are four tasks that can be selected from the **TO DO** column in the Online File Manager. These are accessed from a pull down menu in the **TO DO** column.

- **Do Nothing** will not make any changes to the file.
- **Get the online internet copy** will download the online version of the file to the local computer.
- **Send a file copy to the internet account** will upload the local version of the file to the online account. This option is only available to the administrator.
- **Remove the file from the internet account** will remove the file entirely from the online account. This option is only available to the administrator.

Other control buttons in the Online File Manager window are:

- **Save Changes** will perform the tasks selected for each file.
- **Cancel** will log off the online account and close the Online File Manager.
- **Show File Information** will show the file information dialog of the selected file in the list.
- **Log on to another account** will log off the current account and display the list of accounts.

The **Online Connection Monitor** monitors the connection to the online account and display the user and account information.



The screenshot shows a window titled "Online Connection Monitor". It contains four fields: "User Name:" with the value "Mark", "Status:" with the value "Online", "User Level:" with the value "Administrator", and "Account:" with the value "Mark".

- **User Name** is the current user logged in.
- **User Level** is the privilege level of the currently logged in user.
- **Account** is the account in which the user is currently logged on to.
- **Status** is the current status of the file manager.

Online User File Access & Passwords

The **Online Users File Access & Passwords** utility is to be used by the account's administrator to setup the access privileges for visitors to their account. Visitors who have signed on to your account are called "users". Users can access your account from their 3D applications and from downloadable 3D Viewers.


There are three types of users:

- **Anonymous Guest** – This is a user who can access your account without having to sign on with a **User Name** and **Password**. These users can only read (download) files from your online account. They do not have the authority to write (upload) files to your online account. Allowing **Anonymous Guests** to sign on to your account is useful when you want a large group of users to have access to the same list of files, such as all performers in a marching band. Since a **User Name** and **Password** are not required to be an **Anonymous Guest**, it is also useful for **Commercial Online Accounts** for potential customers to be able to sign on. It is important to note that anyone must be provided with your **Account Name** and **Account ID** in order to view the uploaded files as an **Anonymous Guest**. There is no list or search function where a random individual with no credentials could browse for your files. This is opposite for **Commercial Accounts** – these accounts are publicly listed in the [Online File Manager](#) Account List and can be easily accessed by **Anonymous Guests** for viewing.
- **Registered Guest** – This is a user who can access your account with a specific **User Name** and **Password**. These users can read (download) files from your online account, but do not have the authority to write (upload) files to your online account. With this utility you can set up **Registered Guests** to see only selected files in the account. Setting up **Registered Guests** is useful to give unique file access to a single user such as a customer picking up commissioned drill from a designer.
- **Account Administrator** – This is a user who can access your account after signing on to the account as a **Registered User** using the account administrators **User Name** and **Password**. This user can read and write files from your online account. All files in the account are visible to this user. The administrator can use this utility to add or edit users and change their access privileges. You can set

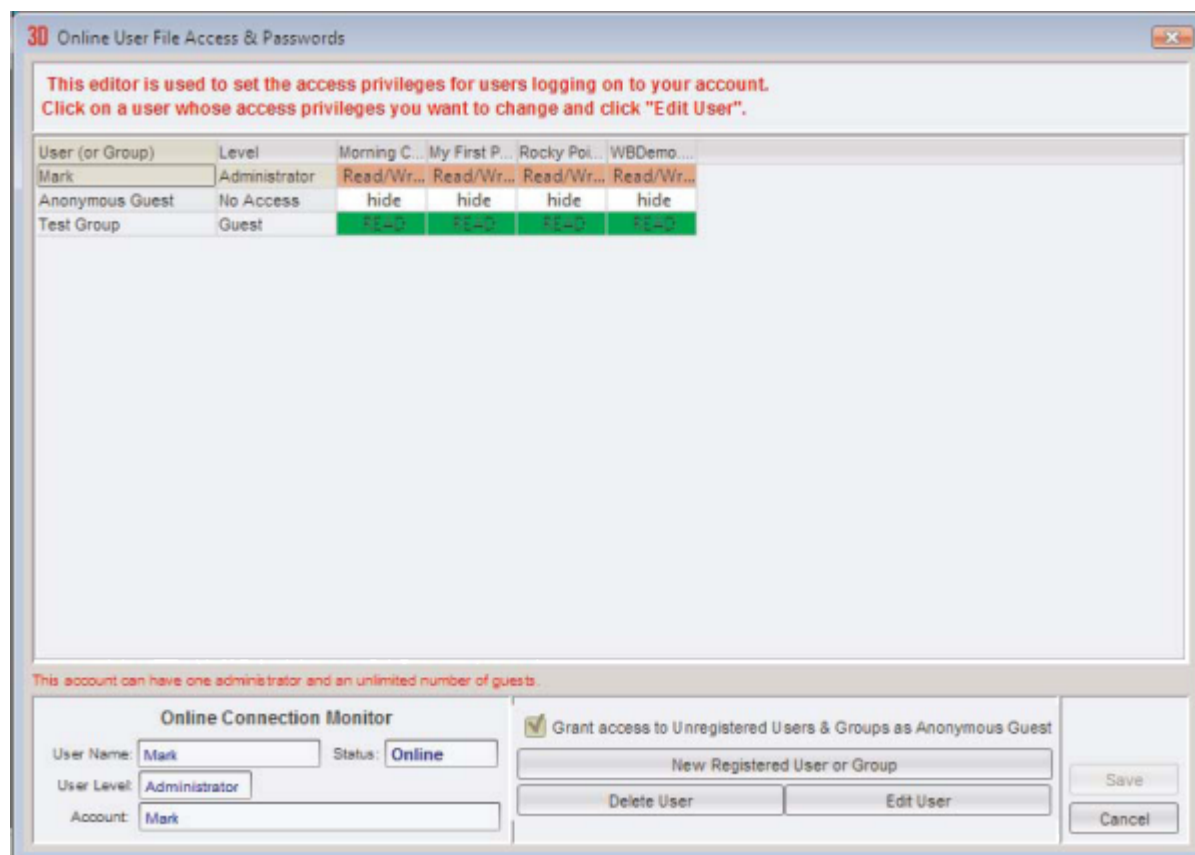
up different users to have differing access to files in the account. This utility can only be run by the account administrator.

To start the **Online File Access & Passwords**, select this option from the [Interactive](#) menu. The **Online Users File Access & Passwords** will attempt to go online and find your online account.

Once connected, a **Sign On** dialog will display for you to enter the account administrator's **Name** and **Password**.

A screenshot of a 'Sign On' dialog box. The title bar reads 'Signing on to Account: Mark'. Inside, under 'Sign on as:', there are two radio buttons. The first is 'Unregistered User or Group (Anonymous Guest)'. The second is 'Registered User or Group:', which is selected. Below the selected option, there are three input fields: 'User or Group Name:' with the text 'Mark', 'Password:' with ten dots, and 'Location:' with a dropdown arrow. At the bottom, there are three buttons: 'Save Settings', 'Sign On' (highlighted in yellow), and 'Cancel'.

Clicking **Sign On** will display the list of all files in the online account.



In the table, the **User** column displays the name you have designated for each of the users or user groups you have established.

The **Level** column displays the type of level given to each user you have established. The levels are:

- Administrator – has full access to the online account to add, update and remove files.
- Guest – has read only access for downloading files from the online account.
- No Access – can sign on, but will not see any files in the online account.

The remaining columns in the table designate each file in the online account and the type of access privilege the user is given to the file. The privileges are:

- Read/Write – the user can upload, download, and update this file from the online account.
- Read – the user can only download this file from the online account.
- Hide – the user will not see this file in the online account.

The option to **allow anonymous guests** for public access is used when you want to allow users access to your account without a unique User Name and Password. This option is typically useful for school band programs who want student performers to access certain files on the account without assigning user names

and passwords. This option is also useful for Commercial Accounts so that anyone can see a selection of files visible for anonymous guests in their account.

Adding a New User

To add a new user or user group to your list of users, click **New Registered User**. This will display the **Edit User Privileges** dialog.

3D Edit User Privileges

User or Group Name:

Level:

Password:

Set the access privilege you want this User (or Group) to have for each file that is currently online. You can also use the "...all files" check box below to set the access privilege for all files (including any files yet to be put online). If you change the password, you will need to notify the User (or Group) of the new password or they will no longer be able to sign on.

Online Files	Read Only
Morning Commute.3dj	<input checked="" type="checkbox"/>
My First Production.prod	<input checked="" type="checkbox"/>
Rocky Point Holiday.3dz	<input checked="" type="checkbox"/>
WBDemo.3dj	<input checked="" type="checkbox"/>

☒ Set all files readable.

☐ Set all files editable.

User Name and **Password** are text boxes where you enter a user name and password that you as the account administrator will determine.

Level is the level for the user's file access. **NO ACCESS** will prevent all files from being displayed on the user file list. **GUEST** allows user to see selected files in their users file list to read (download). The only user that can write (upload) files to the list is the Account Administrator.

Online Files is the list of all files current on the Online Account.

When the level is **GUEST**, the **Read Only** column determines whether this registered user has access to this file.

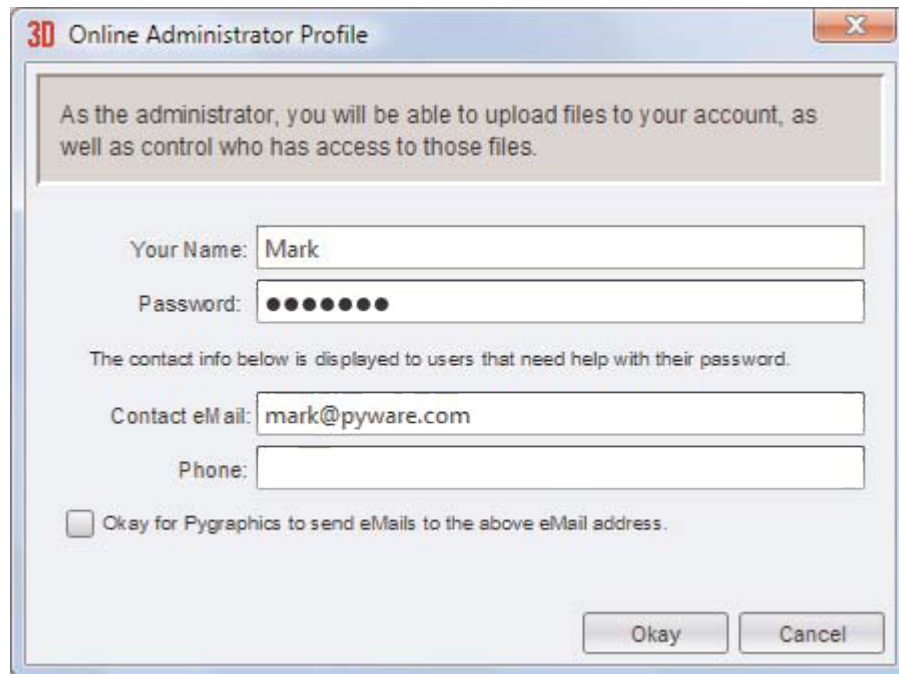
Set all files readable is used as a shortcut to set all current and any future files in the online account to **Read Only**. Remember, this option will set any future files added to the online account to be **Read Only** for this user. Conversely, if you do not use this option in a user's privileges, you will need to edit the user's privileges after new files have been uploaded into the account when you want the user to have access to the new files.

The **Read Only** column sets the file access for the user. If it is not checked, the user will not see the file when they sign on to the account.

Okay will accept the changes to the new user.

The **Edit User** button will display the same **Edit User** privileges dialog as did the **New Registered User** button.

When editing the **Account Administrator's** privileges, the log in and contact information will display. This contact information will be displayed to users that appear to be having trouble signing on to your account.



Delete User will delete the selected user.

Save will save the changes made to the account.

Drill Lock Decoder

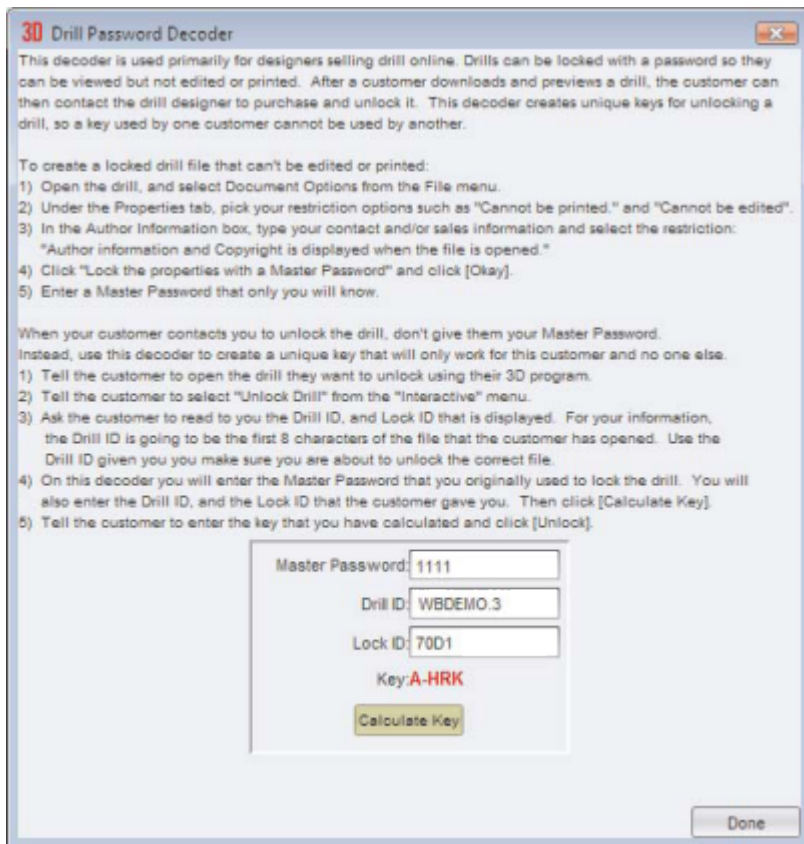
The **Drill Lock Decoder** utility is used primarily for designers selling drills online. Drills can be locked with a password so they can be viewed but not edited or printed. After a customer downloads and previews a drill, the customer can then contact the drill designer to purchase and unlock it. This decoder creates unique keys for unlocking a drill, so a key used by one customer cannot be used by another.

Locking a Drill

To create a locked drill file that can't be edited or printed:

- Open the drill and select [Document Options](#) from the [File](#) menu.
- In the **Author Information** box, type your contact and/or sales information.
- Under the **Properties** tab, pick your restriction options such as **Cannot be printed** and/or **Cannot be edited**.
- Choose to **Lock** the properties with a **Master Password** and enter it. The Master Password is the password that only you know. When your customer contacts you to unlock the drill, don't give them your Master Password. Instead, use this decoder to create a unique key that will only work for this

customer and no one else. Remember the Master Password because you will need it to create the unique key for your customer.

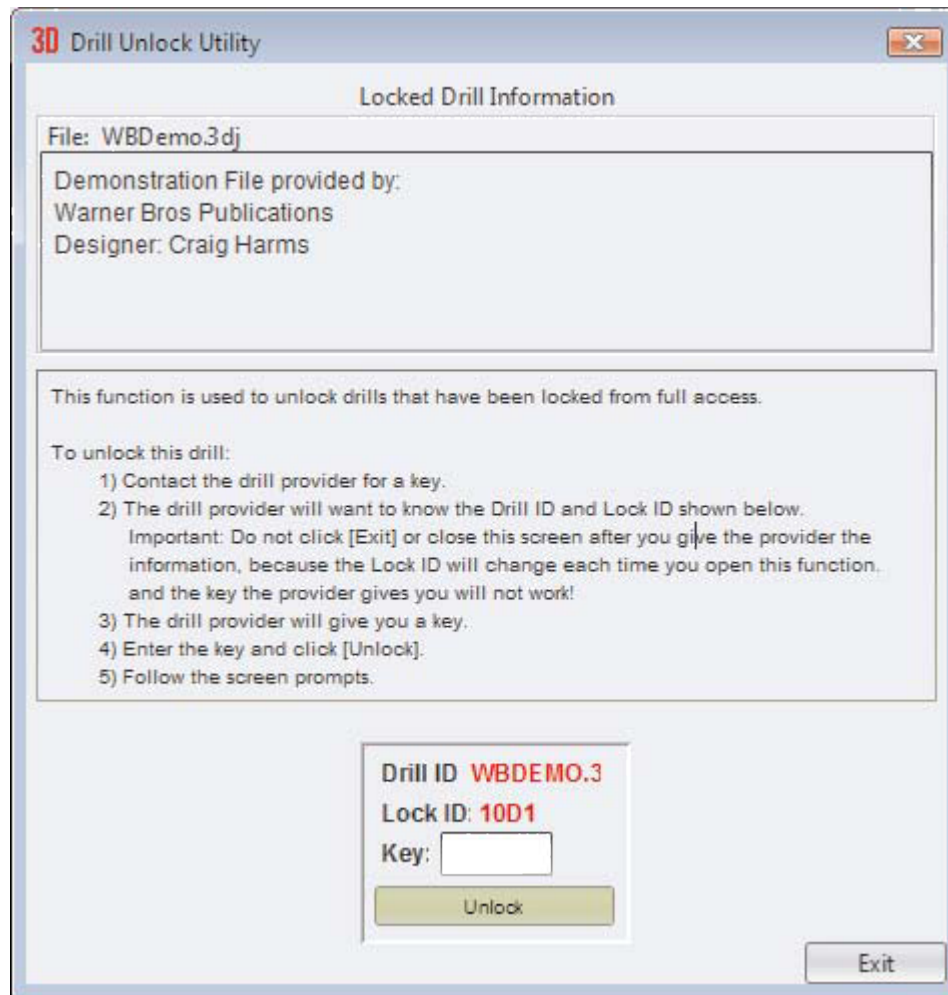


Unlock this Drill

This function is used to unlock drills that have been locked from full access by a drill designer.

Unlocking a Drill

To unlock a drill, first contact the drill designer for a key. The drill designer will want to know the **Drill ID** and **Lock ID** displayed in this window:



Do not click **Exit** or close this window after you give the designer the information. The **Lock ID** will change each time you use this function. If you close the window before entering the key you were provided, the key will not work.

Once you have provided the designer the **Drill ID** and **Lock ID**, they will be able to generate your **key**. Enter the **key** and click **Unlock**.

Performer's Tools Menu

This menu has access to all of the **Performer's Practice Tools** and utilities to manage them.

3D Performer's Practice Tools launches the same program that the performers can download and run on their home computers.

Leader Board Manager is a utility that manages the online Leader Board lists that are generated by the performers as they use the 3D Performance Simulator.

- As a performer practices their drills they attempt to reach a perfect score of 1000. As their scores improve, their score is uploaded to the drill's Leader Board so performers can compete for the top of the leader board. The Leader Board Manager displays the Leader Board lists of all the drills you have online.

Clear erases the list of the currently displayed Leader Board.

Clear All erases the list of all Leader Boards.

The **Purge** option will remove performers on all Leader Board lists that have been on a list for a predetermined number of days.

Print Performer's Setup Instructions prints a sheet that the director (or designer) can pass out to the performers, detailing steps to download and set up the Performer's Practice Tools.

Setup launches a wizard that allows 3D to communicate directly with an installation of the Performer's Practice Tools on the same computer. This option will also activate all of the "Enhanced" features that can be purchased by the performer, as well as allows 3D to directly launch the Performer's Practice Tools program.

Instantly Upgrade My 3D Now

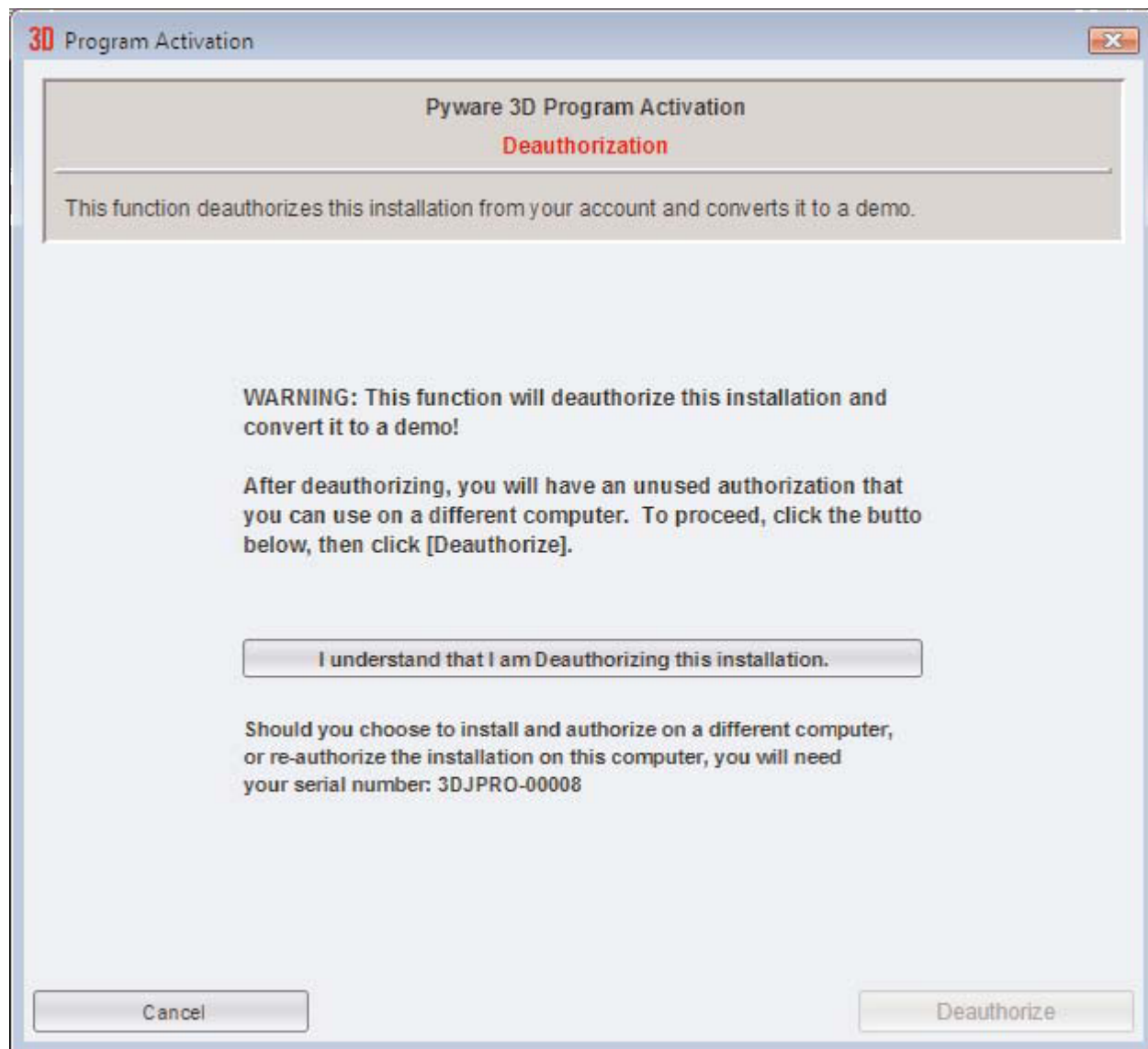
There are two prompts that appear when you choose the **Instantly Upgrade My 3D Now!** option:

- **How do I instantly upgrade my 3D edition** opens a window similar to [Get Plug-in and Accessories](#). This window has information and pricing regarding available updates and plug-ins.
- **I want to apply an existing upgrade or plug-in purchase** prompts you to authorize your program. If you have purchased an update (and have internet access at the time you are attempting to authorize), your new purchase will take effect after completing the online authorization.

Deauthorize This Computer

This function was employed for users who need to switch 3D installations between more machines than their license allows, all with the convenience of not having to contact Pygraphics to do so. Once you select

the deauthorize button, the program on your machine will switch to a restricted demonstration version that cannot save. You would then be able to install and activate on a different computer.



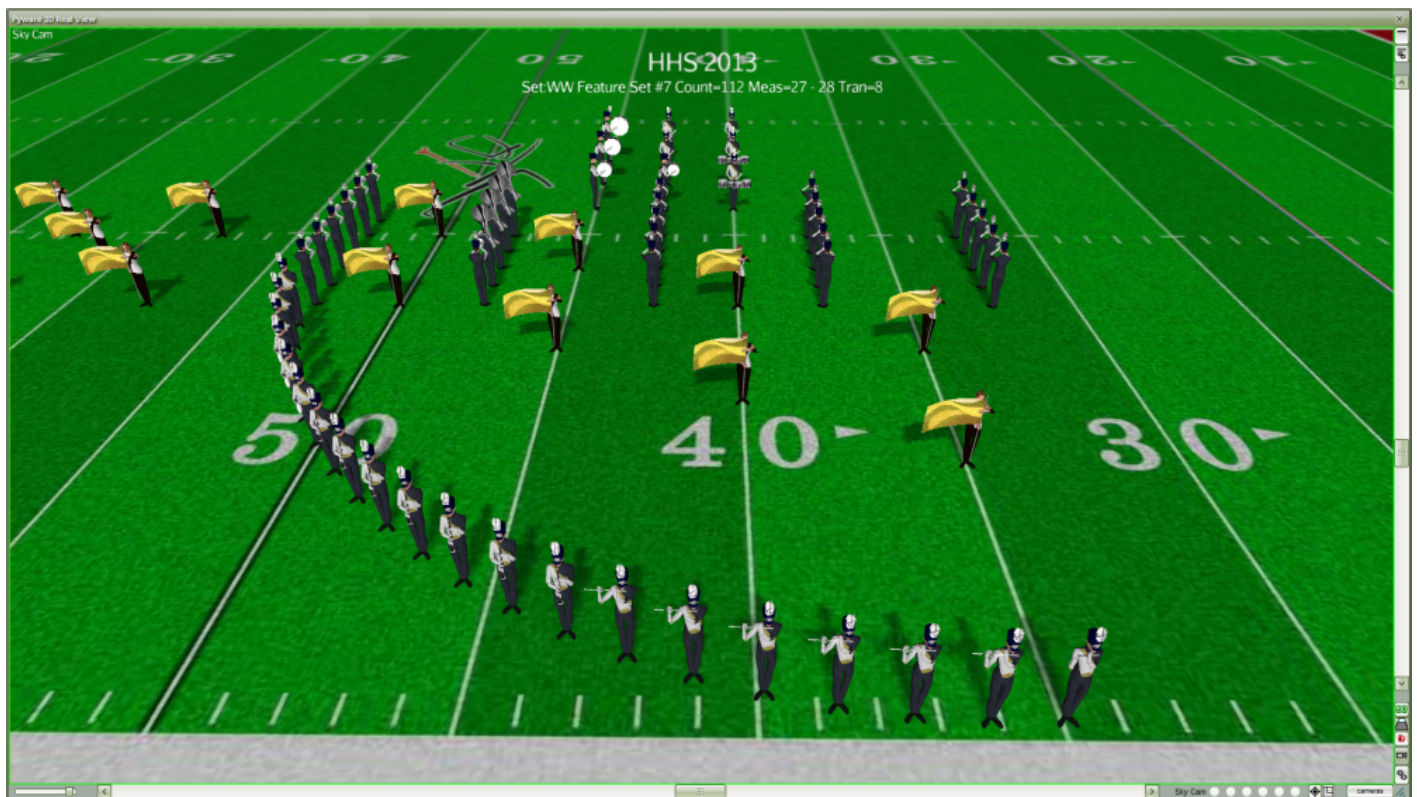
Get Plug-ins and Accessories

This option opens the 3D Upgrades and Accessories window for information and pricing regarding available updates and plug-ins. These may be purchased instantly online with a credit card.

Real View

The 3D Real View is one of the most powerful tools in 3D. Within the Real View, you are able to visualize your drills with fluid marching animations and true 3D performers. Customize the performer's uniforms and instrumentation to see your work in a performance scenario.

Detailed below are the features and options you'll find in the Real View window.



Zoom Slider

The slider on the bottom left side of the Real View window adjusts the zoom of the Real View. Move the slider left to zoom in, and right to zoom out.

Zoom can also be adjusted by scrolling your mouse wheel while the mouse is inside the Real View window.

Horizontal Adjustment

You can either click the Left-Right arrows, or drag the handle to adjust the field of vision horizontally. Horizontal view can also be adjusted by holding down a right-click and moving your mouse left or right.

Restore Default Camera Location

This button will reset the default location of the Real View camera.

Swap Cameras

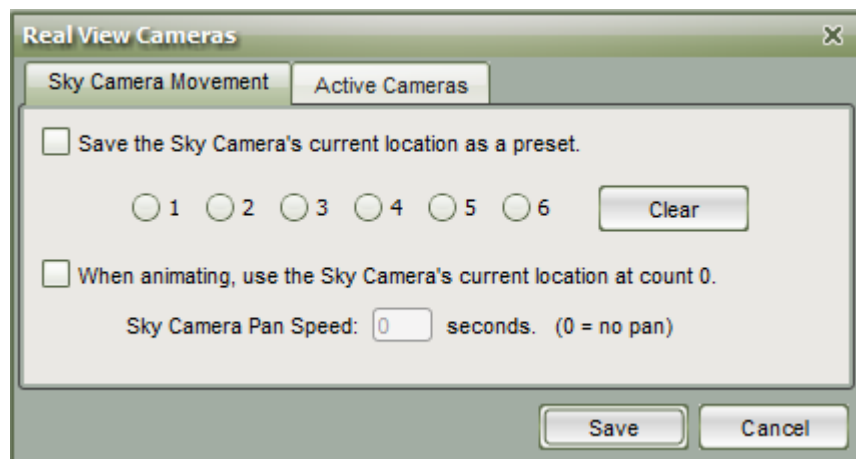
If you have multiple cameras (for example, Blimp and Sky cams) enabled in the Real View, you can toggle the focus of the main camera by pressing the **Swap Cameras** button. Pressing the **Swap Cameras** button multiple times will cycle through the cameras.

Real View Cameras

Cameras in the Real View have multiple options, from multiple angles, viewpoints, and panning. To adjust any of these settings, select the **Cameras** button in the Real View window. This will open a control panel with two tabs. Sky Camera Movement and Active Cameras.

Sky Camera Movement

The Sky Camera Movement tab is where you will find options for camera panning, as well as setting values for fixed camera angles.



Camera Angles: There are 6 camera radio buttons available for you to quickly jump to different viewing angles when watching the animation or previewing a chart. To set specific angles to a preset button, change the view point in the Real View window to your desired angle, then press the **Cameras** button. Select the **Sky Camera Movement** tab. Assign the angle you created to a radio button, 1-6. Once you save a camera angle through this process, you can instantly jump to that view in the Real View anytime during the design or previewing animation process.

To remove all saved camera angles, press the **Cameras** button, then choose **Clear** on the Sky Camera Movement tab.

Camera Panning: Camera panning is based on the placement of your **Red Anchor** on the [Count Track](#).

Once the anchor is in the desired starting position, adjust the Real View field of vision, then press the **Cameras** button. This will open the Real View Cameras window. On the Sky Camera Movement tab, select the check box to use Camera panning starting at count X (where X=current Red Anchor location).

The **Camera Pan Speed** sets the speed of the camera pan. Leaving the speed at 0 will result in a snap, or no pan, to the set camera location.

After the preset Camera Angle Speed has been set, press Save to retain the Camera Angle information.

Active Cameras

The 3D Real View allows up to 4 different active cameras at once. To set your active cameras, select the **Cameras** button on the Real View.



Select the Active Cameras tab and choose which cameras you would like displayed from the 4 available:

The **Sky Camera** is the least restricted of the 4. It can zoom as far in or out as desired, and be set from any view point.

The **Ground Camera** will follow a performer that has been selected with the [Spotlight](#) tool. This camera can be set to any angle, however the zoom is restricted.

The **Helmet camera** is a first person view of a performer that has been selected with the [Spotlight](#) tool. This is a fixed view point dependent on the selected performer's facing.

The **Blimp Camera** is an aerial view with limited zoom. Any tilting or sliding in this view has been disabled.

Real View Document Options

The [Document Options](#) button on the Real View window is a way to quickly launch to the Real View Perspective tab in a drills' Document Options. Here you can specify settings for fabrics (such as uniforms and flag silks), default visuals, and a performance surface (if any).

Show/Hide Camera Panning

If camera panning has been assigned to a drill file and you wish to ignore it, select the **Show/Hide Camera Panning** button. This will keep the Real View window at a fixed angle while playing the animation.

Show/Hide Performer Labels

Performer labels can be displayed in the Real View window. This is particularly helpful when using the Ground or Helmet camera options, so the selected performer has a better understanding of their responsibility and immediate surroundings.

By default, performer labels are displayed in the Real View. To hide performer labels, press the **Show/Hide Labels** button in the Real View window.

If labels have not been assigned to performers, 3D will display labels automatically assigned based on the order that performers were entered. These labels will be replaced by user entered labels through either the [Performer Labeling](#) tool or the [Cast List](#).

Show/Hide Performance Surface

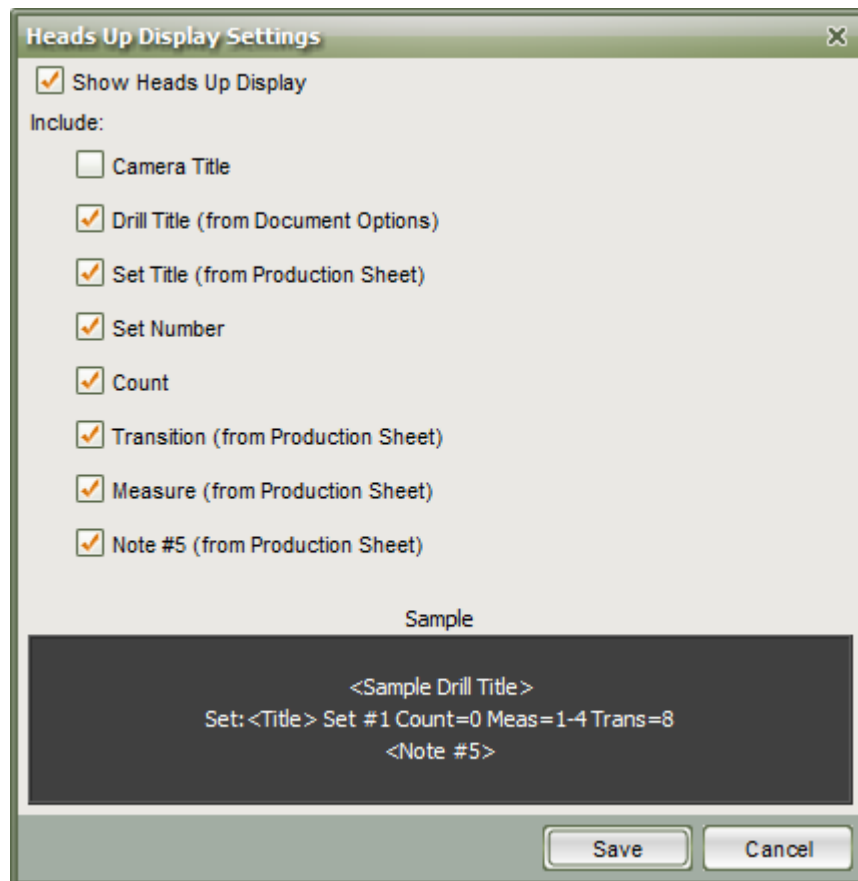
In the Real View window, you have the option to display step grids and performance surfaces. To do so, select the **Show/Hide Performance Surface** button in the Real View window. Clicking the button switches the option between the step grid and any existing performance surfaces loaded into the drill.

Vertical Adjustment

You can either click the Top-Bottom arrows, or drag the handle to adjust the field depth. Depth can also be adjusted by holding down a right-click and moving your mouse up or down (while inside the Real View window).

Heads Up Display (HUD) Settings

Production Sheet data can be displayed as an overlay in the Real View window. This information shown can be adjusted by clicking on the **HUD Settings** button located on the Real View window.



In the Real View window, click the **HUD Settings** button. A new window will appear. To enable the HUD, check the Show Heads Up Display option. You can also choose to include or exclude any of the data listed in this window for display in the Real View. When your options are set, press **Save**.

Windows Shade

When selected, the Window Shade option will open the Real View perspective while animating, and keep the window shaded when not animating. This feature is especially helpful if you are running 3D on one screen.

Visuals Editor

The Visuals Editor tool aids in customization of both performers and performances in the Real View. Use this tool to choose uniform style, performer facing, equipment carried, equipment visuals, marching style, hold style, and pace.

The tool can be kept open while designing, this way you can set multiple performance effects and visuals while on the move.

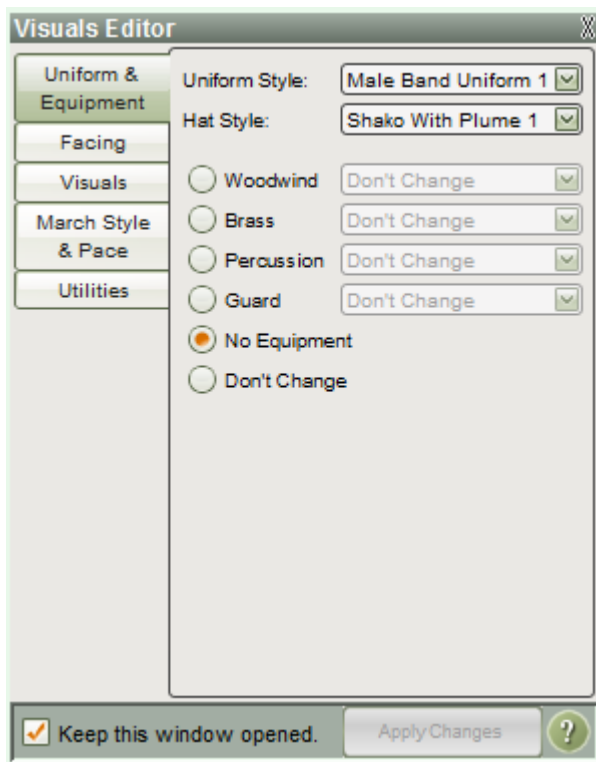
There are 5 different tabs available on the Visuals Editor: [Uniform & Equipment](#), [Facing](#), [Visuals](#), [March Style & Pace](#), and [Utilities](#). Each of these tabs and their respective features will be outlined in the following topics.

To use the Visuals Editor, the [Real View](#) must be enabled, and you must select at least one performer on the field. To open the tool, select the **Visuals Editor** on your [Tool Palette](#).



Click on the arrow next to **Visuals Editor** in the Table of Contents to the left to expand this section and begin.

Uniform & Equipment



Uniform Style

With the Visuals Editor, you have multiple uniform “styles” to select from. Any performer at any point during a drill can wear any of the uniforms available. This means that you could have a traditional uniform for the winds and percussion, and a guard uniform for the color guard.



All changes in the Visuals Editor are based on the location of the **Yellow** and **Red Anchors** on the Count Track. Because of this, uniforms can be changed throughout the drill. There is no restriction on how many times a uniform can be changed; just be sure to have your anchors on the Count Track in the correct location where the change will occur!

Assigning a Uniform

To select a uniform for use, highlight (select) performers on the field and open the **Visuals Editor** tool. If not already selected, select the **Uniform & Equipment** tab.

At the top of the **Uniform & Equipment** tab will be two menus; one for Uniform Style and one for Hat Style. Select which uniform you would like under Uniform Style, and repeat the process for Hat Style. Once these changes are made, they will apply for the entirety of the drill, or until another change occurs.

Assigning Equipment

Carried instruments and equipment is easily assigned and changed for performers in a drill.

To have performers carry an instrument or equipment, you must first select the performers on the field with a [Selection](#) tool. Once the performers are selected, open the Visuals Editor and click on the **Uniform & Equipment** tab.

Select the radio button to enable the equipment “family” you wish to choose from. Once selected, the menu will be enabled, allowing you to pick the equipment of your choice.

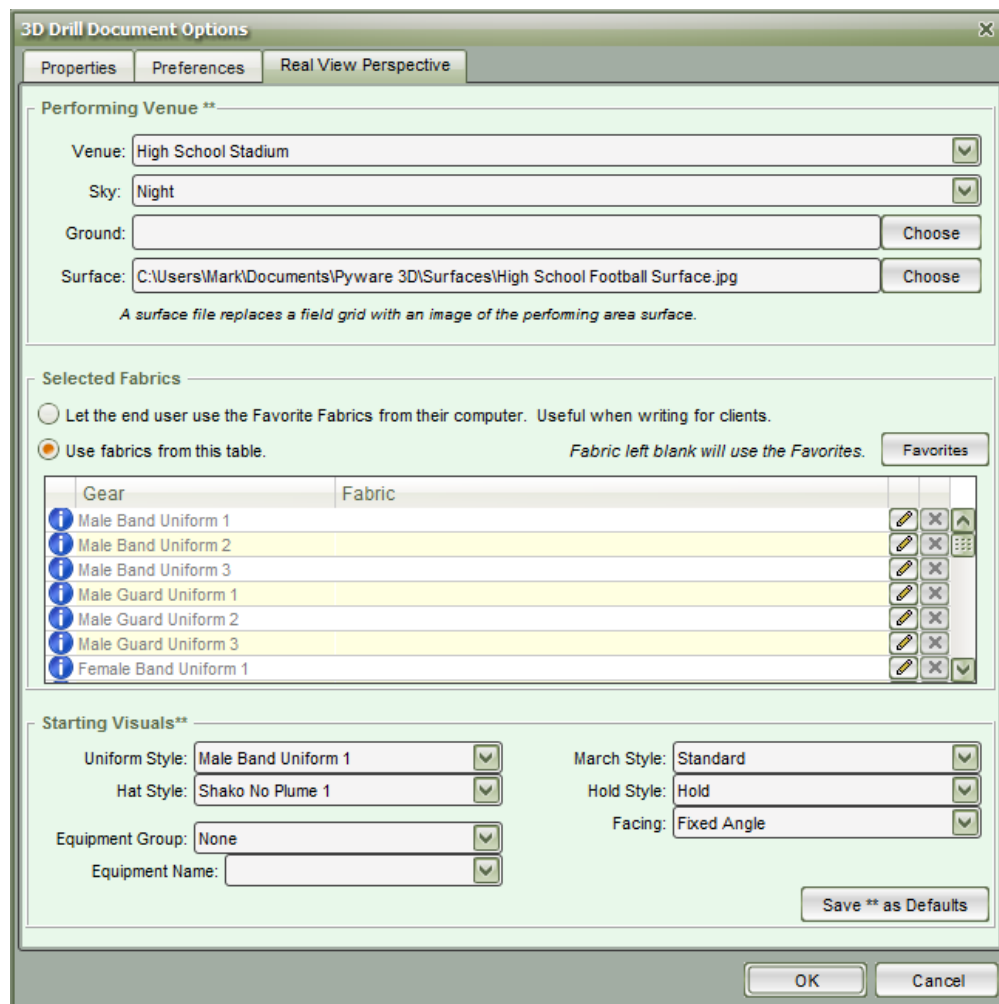
For example, if you selected trumpets on the field, you would choose the **Brass** radio button, then “Trumpet” from the Brass menu.

Facing

The Facing tab controls which way performers face in a drill. The facing of performers can be changed at any count in the drill.

Default Facing in a File

To change the default facing for one file, open the drill file. Go to the [File](#) menu and choose [Document Options](#). Select the **Real View Perspective** tab. You should see a “Facing Style” menu. Choose to have performers face a fixed angle, or follow the direction of movement.



3D Drill Document Options

Properties | Preferences | Real View Perspective

Performing Venue **

Venue: High School Stadium

Sky: Night

Ground: Choose

Surface: C:\Users\Mark\Documents\Pyware 3D\Surfaces\High School Football Surface.jpg Choose

A surface file replaces a field grid with an image of the performing area surface.

Selected Fabrics

☐ Let the end user use the Favorite Fabrics from their computer. Useful when writing for clients.

☒ Use fabrics from this table. *Fabric left blank will use the Favorites.* Favorites

Gear	Fabric			
Male Band Uniform 1				
Male Band Uniform 2				
Male Band Uniform 3				
Male Guard Uniform 1				
Male Guard Uniform 2				
Male Guard Uniform 3				
Female Band Uniform 1				

Starting Visuals**

Uniform Style: Male Band Uniform 1

Hat Style: Shako No Plume 1

Equipment Group: None

Equipment Name:

March Style: Standard

Hold Style: Hold

Facing: Fixed Angle

Save ** as Defaults

OK Cancel



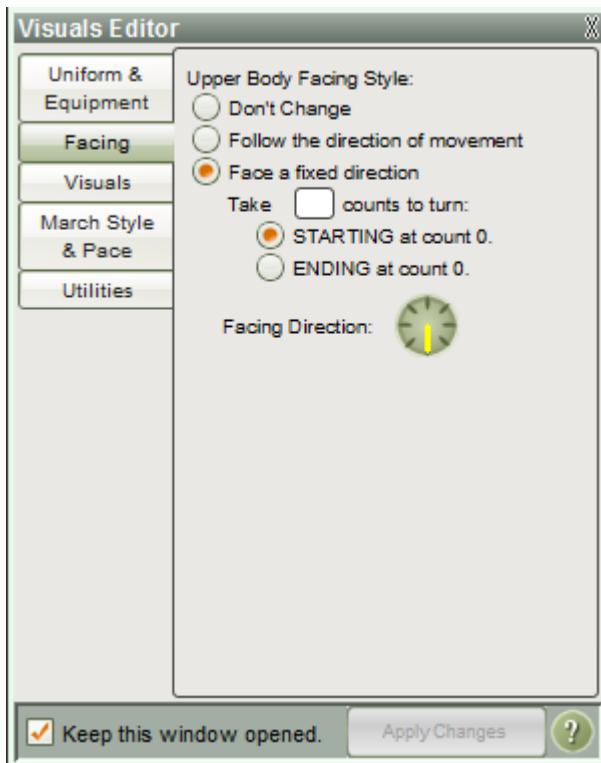
The changes to the Document Options will only affect performers AFTER the change has been made (new performers, for example). Performers that were in the file prior to the change will not be affected.

Any edits made to the Document Options can become defaults for new files by selecting the "Save as Defaults for New Files" button.

Change Performer Facing

To change the facing of performers, select the performers and open the [Visuals Editor](#) tool.

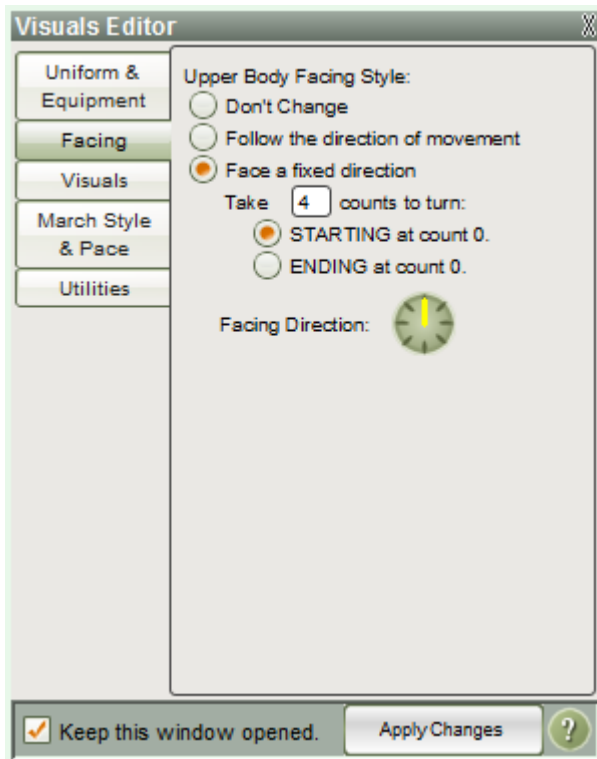
Once the Visuals Editor tool is opened select the **Facing** tab. Choose the Facing Style you would like for the selected performers. If facing a fixed direction, you will need to select the direction on the Facing Direction Compass.



You may choose for these changes to occur either **STARTING** at count X (your **Yellow Anchor** location) or **ENDING** at count X (your **Red Anchor** location).

Turn Into a Facing

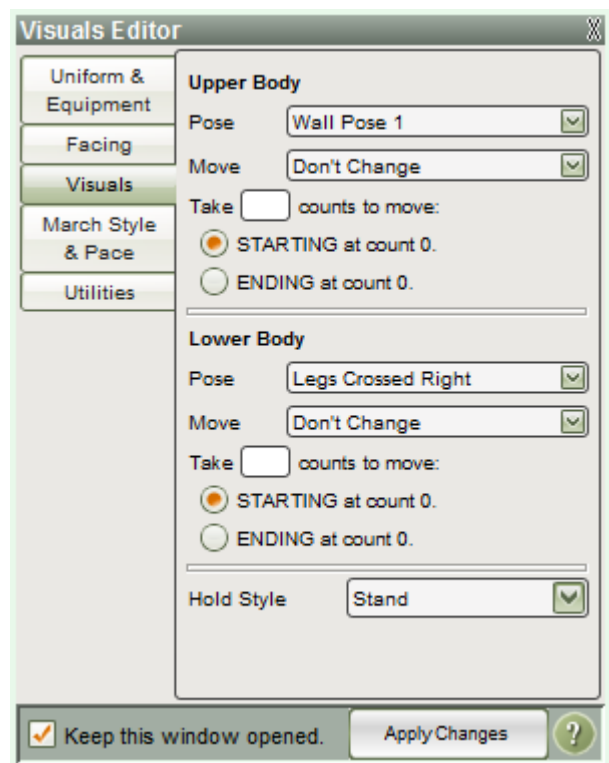
To have performers turn to face a direction over a range of counts, select the performers and open the [Visuals Editor](#) tool. Select the **Facing** tab in the tool's control panel. Choose to face a fixed direction, then select the direction on the compass and enter the number of counts you would like the turn to take.



You may choose for these changes to occur either STARTING at count X (your **Yellow Anchor** location) or ENDING at count X (your **Red Anchor** location).

Visuals

Performer visuals can be broken down into categories, depending on the body orientation and equipment assigned. You can define upper and lower body visuals, poses and maneuvers.



Upper Body

Upper Body visuals are dependent on the selected performer's assigned equipment (if any). The list of **Pose** and **Move** options may change depending on what the selected performer is carrying.

To assign an Upper Body visual, select a performer or group of performers on the field. Open the **Visuals Editor** tool and click on the Visuals tab. If you wish to assign a **Pose** (a non-moving hold), select the appropriate Pose from the list. IF you wish to assign a **Move** (a moving maneuver), select the appropriate Move from the list. You can enter a count value to have the performer take X amount of counts to hit the Pose or do the Move, and have it start or end at a certain count in the drill (dependent on your **Yellow** and **Red Anchor** locations on the [Count Track](#)).

Lower Body

Much like Upper Body visuals, Lower Body visuals can be assigned to a performer or group of selected performers. To do so, select the desired performers on the field with any [Selection](#) tool. Open your **Visuals Editor** and click on the Visuals tab. If you wish to assign a Pose (a non-moving hold), select the appropriate Pose from the list. If you wish to assign a move (a moving maneuver), select the appropriate Move from the list. You can enter a count value to have the performer take X amount of counts to hit the Pose or do the Move, and have it start or end at a certain count in the drill (dependent on your **Yellow** and **Red Anchor** locations on the [Count Track](#)).

Hold Style

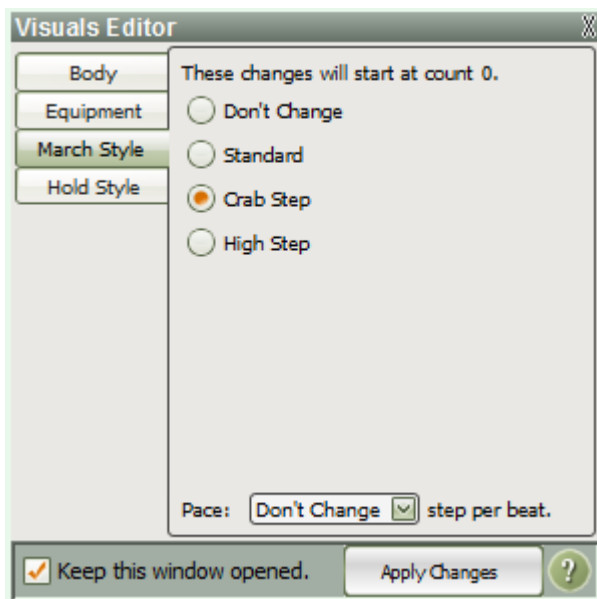
The menu under Hold Style on the **Visuals Editor** tool allows you to specify if selected performers will stand or mark time during a hold.



See [Real View Poses Guide](#) for a quick visual reference for all available poses.

March Style & Pace

Multiple marching styles are available for you to choose from. By default, performers marching in the [Real View](#) will march with a bent knee style and jazz run when necessary. You can, however, specify for percussion to march with a crab step, or have the performers march with a traditional style high step.



h3. March Style

To change the march style of performers, select the performer(s) and open the **Visuals Editor** tool. On the March Style & Pace tab, choose the style you want performed and press **Apply Changes**.

Pace

Performers can march single, double, or half time, based on your input.

To change the pace of a performer, select the performer(s) and open the **Visuals Editor** tool. On the March Style & Pace tab, choose the pace option you would like from the menu and select **Apply Changes**.

Once a pace has been applied for performers, they will continue marching at that pace until the pace has been adjusted again.



All changes in the **Visuals Editor** are based on the location of the **Yellow** and **Red Anchors** on the Count Track. Because of this, march style can be changed throughout the drill. There is no restriction on how many times marching styles can change; just be sure to have your anchors on the Count Track in the correct location where the change will occur! If you are setting a default for the file (such as March Style), make sure the **Red Anchor** is at count zero. If your anchors are spread when you change the style, the style change will apply to that transition and from that point forward, or until another change is made.

Utilities (Visuals Editor)

The Utilities tab contains quick links for different tools in the program that are frequently used in conjunction with the Real View perspective.

Fabric/Visual Options opens the drill file's Document Options so you may specify which fabrics to use for the drill.

Fabric Editor is a quick way to open either the drill's fabric folder, or launch an image editor to customize fabrics for use in a drill.

Symbol to Real View Map will open the Symbol Map Editor, where you can specify uniform and equipment values to be saved, depending on which symbol is used on the design grid.

Movie Maker will begin the process for creating videos of your drills.

Plug-ins

There are four plug-ins available for Pyware 3D: the [Floor Covers](#) plug-in, [Personal Drill Book Printer](#), [Spiral Tool](#) plug-in, and the [Traditional Tools](#).

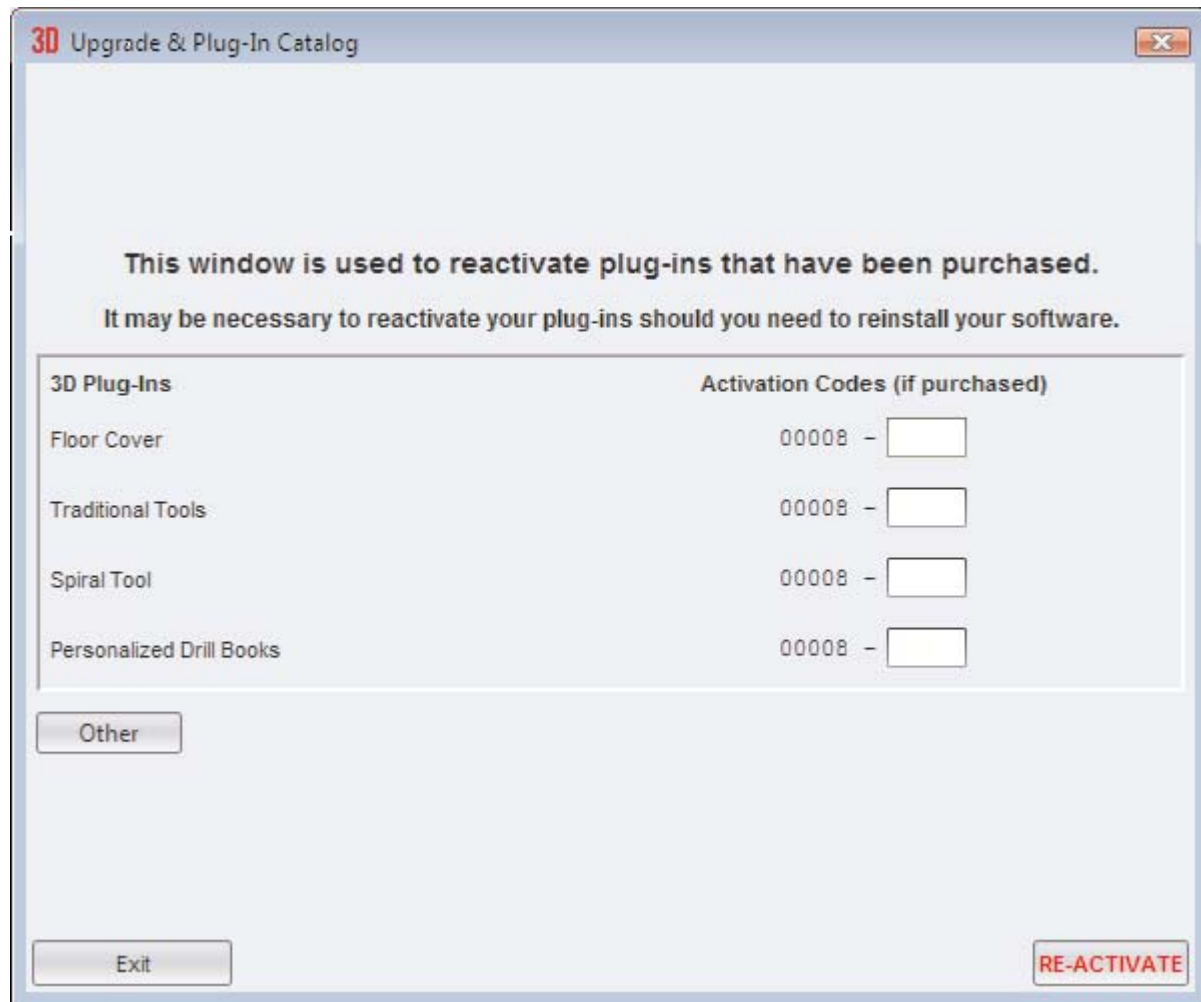
All plug-ins are included in the Professional edition of 3D. Any plug-in can be purchased separately on the Basic or Interactive edition.

Installation Instructions

All plug-ins are installed during 3D's installation. You would need to activate 3D before attempting to activate any plug-in purchase. Once 3D has been activated, do the following to activate your plug-ins:

- Open 3D
- Go to the [File](#) menu and choose [Application Options](#)
- Click on the **Plug-ins** tab
- Click the **Re-activate Plug-ins** button
- Enter the **Plug-in Activation Code** in the text box at the bottom of the screen. The **Plug-in Activation Code** was provided to you at the time of purchase. If you do not have an activation code for your plug-in, [Contact Pygraphics, Inc.](#) for assistance.
- Click **Re-activate**

If the steps above were followed correctly, your plug-in(s) will be unlocked. Your plug-in(s) will be available for use after a restart of 3D.



Click on the arrow next to **Plug-ins** in the Table of Contents to the left to expand this section and begin.

Floor Covers

In Pyware 3D, a performing surface is most always made up of a grid created by the [Grid Designer](#) of the [Utilities](#) menu. Grids are the lines on the display (much like yard lines on a football field). Most performing surfaces can be defined using simply these horizontal and vertical grid lines. However, in some cases there are other characteristics of a performing surface that would be handy to show on the screen. For example, the markings on a standard basketball court would be nice for indoor performances. These special markings can be displayed using Floor Covers. When creating a grid using the Grid Designer, you can add a Floor Cover that is placed under the grid. The floor cover usually represents the markings of a basketball court, soccer field or other standard field. It could, however, also be the logo that is painted in the center of a football field, or the design on a canvas that lays over the performing surface for an indoor performance. There are many uses for Floor Covers.

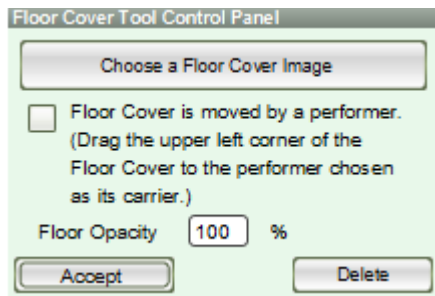
Adding a Moveable Floor Cover

A Moveable Floor Cover is an image such as a stage, wall, or pit area. Any .jpg or .gif image can be used as the Moveable Floor Cover. All Moveable Floor Covers are entered at count 0 of the drill. Moveable Floor covers can be moved around the field by assigning a performer to be the carrier of the floor cover. To control the movement of a Moveable Floor Cover, you can assign the Moveable Floor Cover to an existing performer, or create a new performer using the [Point](#) tool. To move the Moveable Floor Cover, use any [Editing](#) tool on the performer and the Moveable Floor Cover will follow the movement of the performer.



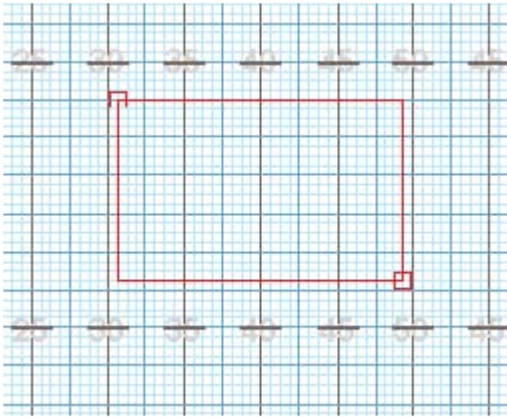
Control Panel Options

Clicking on the **Moveable Floor Covers** tool will display the *Floor Cover Tool Control Panel.



Clicking on top of an existing floor cover will select the floor covers for editing. A floor cover is selected when it is outlined in red.

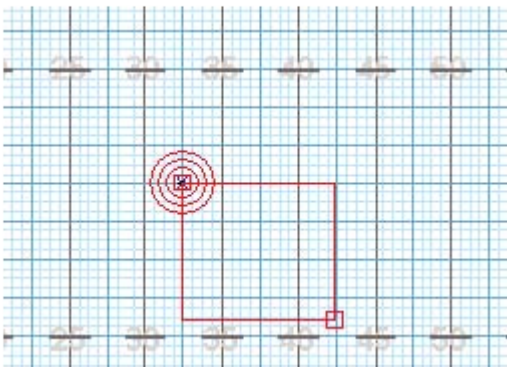
Clicking a location anywhere else in the design area will start the creation of a new floor cover. The first click will be the location of the upper-left corner of the floor cover. Move the cursor to the location for the lower-right corner of the floor cover and click. A red box will indicate the location entered.



Editing handles will appear on a selected or new floor cover. Dragging the handle in the upper-left corner will move the location of the floor cover. Dragging the handle in the lower-right corner will change the size of the floor cover.

Clicking on **Choose a Floor Cover Image** in the Floor Cover Tool Control Panel will display a file dialog for finding an existing image.

Floor Cover is carried by a performer will cause the floor cover to move with the movement of a selected performer. To select the performer to be the floor cover's carrier, drag the upper-left corner of the floor cover directly on top of a performer. A red "bullseye" will appear on top of the performer to indicate the performer that will carry the floor cover throughout the drill. The carrier can be any performer in the drill.



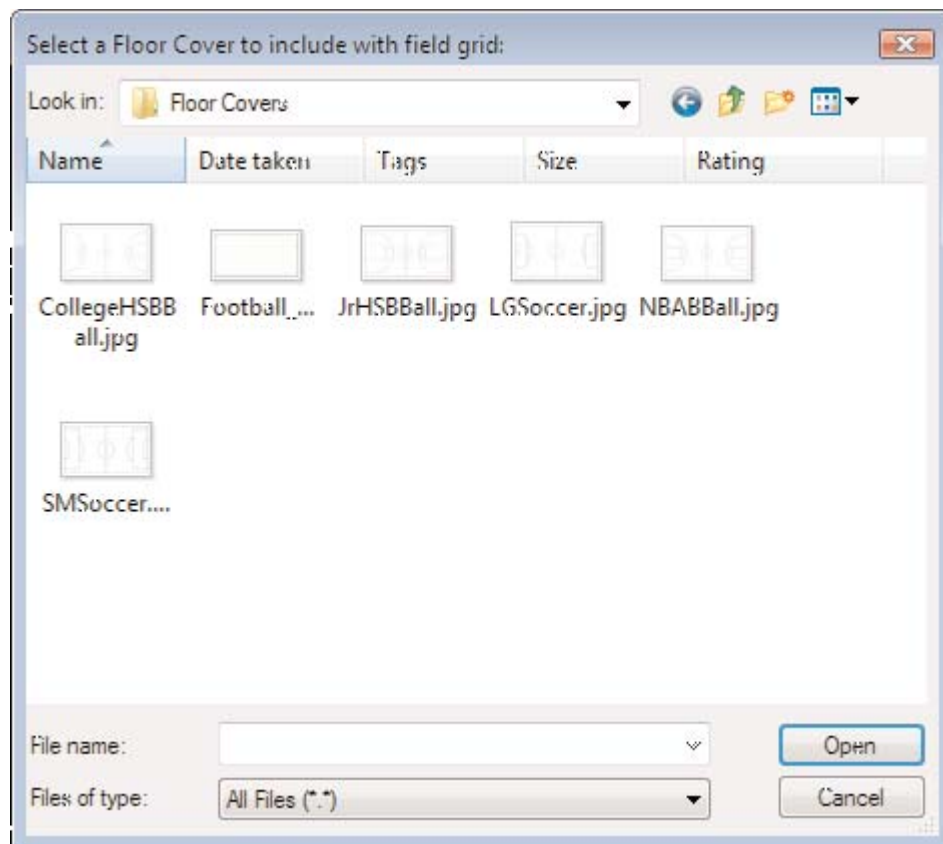
Selecting the performer and editing its movement throughout the drill will cause the floor cover to move as well.

The **Opacity** of the floor cover can be entered by entering a number in the Floor Opacity text box. The transparency value is a percentage. If you choose an opacity of 50% the floor cover will allow 50% of the drill to be seen through it on the design field.

Loading a Floor Cover in the Grid Designer

To create a grid that includes a floor cover you will use the Grid Designer found in the menu of 3D.

- Select [Grid Designer](#) from the [Utilities](#) menu.
- Load the grid you wish to use by selecting **Load** then choosing the grid of your choice.
- Click **Floor Cover** and open your floor cover image file.



- Once the floor and grid are loaded as you like, you can save the setup by selecting **Save** or **Save As** so you can use the grid design on new drill files.
- Selecting **OK** will apply the changes to the drill file that is currently open.

Adding a School Logo to a Grid Layout

Included in the Floor Covers folder (inside your user Documents\Pyware 3D folder) is a Football_Template.jpg file. This file is created with the correct floor cover dimensions (height and width) of a standard football field. The file also has a tick mark at each yard line location.

- To add a logo to the file, open the file “Football_Template.jpg” with an image editing program.
- Paste your logo into the template. Scale and locate the logo so that it fits correctly in the template using the yard line tick marks as a guide.
- Delete the outer border and tick marks leaving only the logo in the file.
- Select Save As for the file under a new name. Make sure the location of the file is in the Floor Covers folder.
- Use the steps in the section above for adding a floor cover to an existing grid.

Transferring Floor Covers

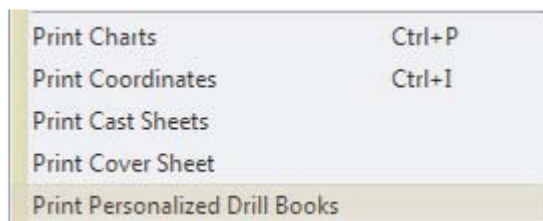
Should you transfer the drill file to another computer, you will need to also transfer the floor cover image used in your drill. You can save a 3D Drill File as a **3D Package** that will include the floor cover image used with the drill into one file. When saving, the package option **Include Floor Cover** must be set. To change the format of an existing drill file to a **3D Package**, choose **Save As** from the **File** menu and set the **Save** options.

Personal Drill Book Printer

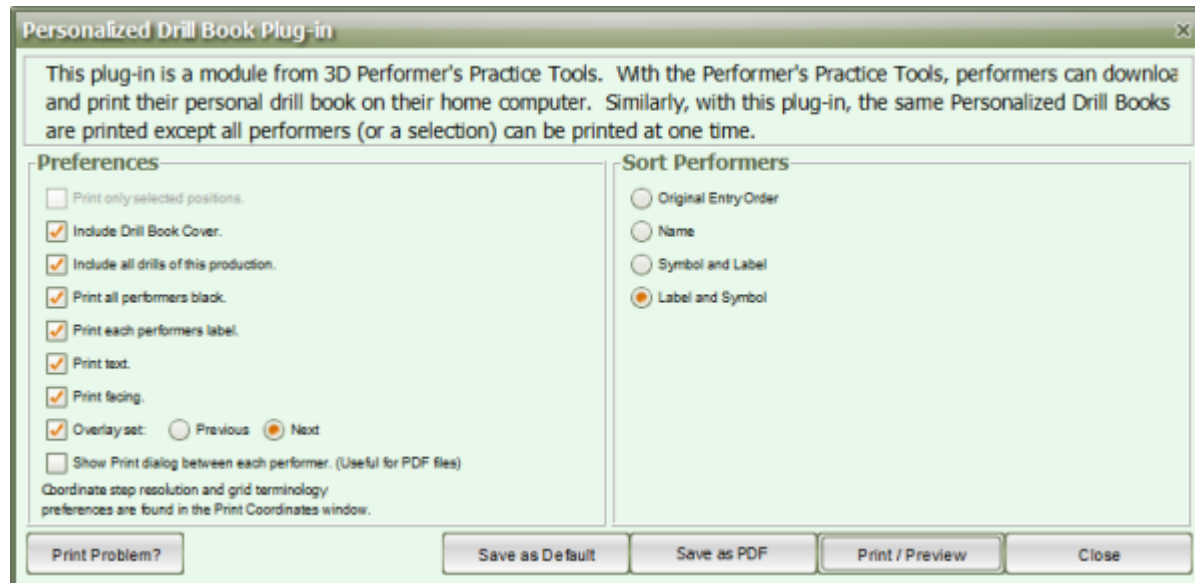
The **Personal Drill Book Printer** is a plug-in that harnesses one of the most powerful features of the Performer’s Practice Tools. This plug-in allows you to print customized drill books for each performer that contain drill charts, set by set pathways, and coordinate sheets.

Printing a Drill Book

Before printing drill books it is suggested that you label and name all performers (in the [Cast List](#)) for this tool to be most effective. To print a Personalized Drill Book select **Print Personalized Drill Books** from the [File](#) menu.



This will open the Print options for the Personalized Drill Books.



Drill Book Printing Preferences

Print only selected positions only prints drill books for performers that you currently have selected in the drill. Use any [Selection](#) tool to select the performers.

Include Drill Book Cover includes a cover for the drill book pages to be inserted into.

Print all drills of this production includes all drills that are part of the current open production.

Print all performers black prints all performers black instead of the color set in the label editor.

Print each performer's label prints each performer's label that is set in the label editor tool.

Print Text prints all the text boxes that have been entered on each page.

Print Facing prints the facing direction for each performer.

Overlay set: (Previous) (Next) prints the secondary positions as dots from either the previous or the next drill set.

Sort Performers allows you to sort the drill books in order of Original Entry, Name, Symbol & Label, or Label & Symbol.

Save as Default saves the preferences that you select as the default settings for Drill Book printouts.

Print/Preview opens the Print Preview screen that is seen on the next page.

Close closes the Print Drill Book dialog.

Print Preview

The print preview screen is accessed by clicking the Print/Preview button in the Print Drill Book dialog. All drill charts printed on the drill book are in the student perspective.

3D Print Preview

Print... Page Setup Page: 9 of 14 100% Close

Sample Drill Set #16
Performer: Count: 22

Set	Move	Count	Left-Right	Visitor-Home
15	8	216	1.25 stps outside Left 30 yd In	9.0 stps in fnt of Home hash (HS)
16	10	226	2.5 stps outside Left 35 yd In	6.5 stps in fnt of Home hash (HS)
17	12	238	2.0 stps inside Left 30 yd In	3.0 stps in fnt of Home hash (HS)

Sample Drill Set #17
Performer: Count: 23

Set	Move	Count	Left-Right	Visitor-Home
16	10	226	2.5 stps outside Left 35 yd In	6.5 stps in fnt of Home hash (HS)
17	12	238	2.0 stps inside Left 30 yd In	3.0 stps in fnt of Home hash (HS)
18	20	258	1.0 stp outside Left 35 yd In	3.0 stps in fnt of Home hash (HS)

Print will send the job to the printer.

Previous Page will move to the previous preview page of the print job.

Next Page will move to the next preview page of the print job.

Page Setup opens the printer's page setup dialog.

Done closes the print preview and returns to the print charts dialog.

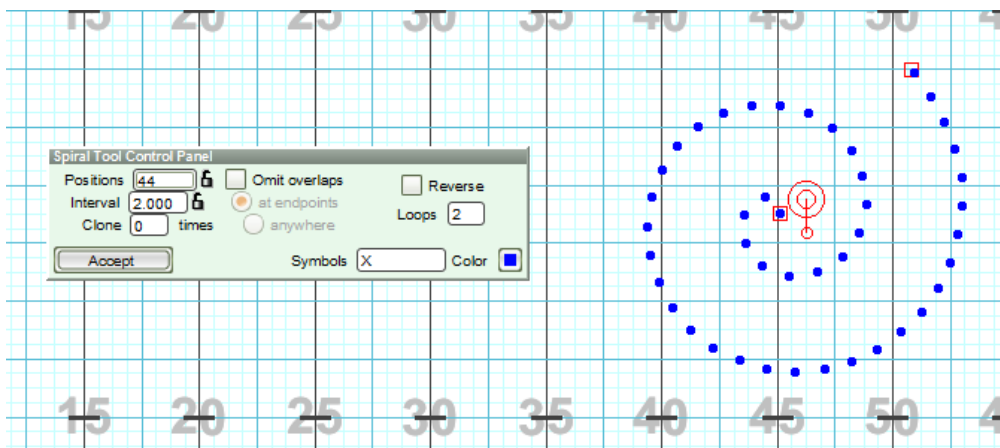
Spiral Tool

The **Spiral** tool is a plug-in that allows a designer to easily create a fluid spiral shape. The Spiral tool can create spirals of any numbers of loops.

For NEW performers, set the **Red** and **Yellow Anchors** on the [Count Track](#) to the count at which you wish the spiral to be drawn. To transition EXISTING performers into a spiral, move the **Red Anchor** to the count where the selected performers should “hit” the spiral shape. Move the **Yellow Anchor** to the beginning count of the transition into the new spiral. This is usually the previous set in the drill. Select the existing performers that will be moving into the spiral using a [Selection Tool](#). See the [Drawing Tools](#) overview for more explanation between new performers and transitioning existing performers.



Clicking on the **Spiral** tool will display the **Spiral Tool Control Panel**.



Drawing a Spiral

The **Spiral** tool operates similar to the [Circle](#) tool. Spirals are drawn by clicking two points on the field display. The first click on the field will be the center point (or first endpoint) of the spiral. The second click will be the second endpoint of the spiral. The remaining performers will be drawn in automatically, depending on the number of loops you specified. You can change the number of loops of the spiral before committing the form to drill.

Spiral Tool Control Panel Options

Loops sets the number of times the spiral will loop.

Reverse changes the direction of the spiral.

Many of the options in the **Spiral Tool Control Panel** are exactly the same as options in the [Line](#) tool. Refer to the [Line](#) tool for details on the **Clone**, **Symbol**, **Color**, **Editing Handles**, and **Reposition Handles**. See [Matching Lines](#) for an explanation of the **Matching Lines** functions.



The Spiral tool is a separate purchase on Basic and Interactive editions, and is included with the Professional edition. See the [Interactive Features](#) page for more information on purchasing the plug-in.

Traditional Tools

The **Traditional Tools Plug-in** includes a set of tools that are frequently used in military (traditional) style marching. This set of tools includes:

- [Sequential Push Tool](#) – used to create step offs and drop offs
- [Counter March Tool](#) – used to create counter marches
- [Parade Gate Tool](#) – used to create parade gates or wide, sweeping turns
- The [Traditional Tool](#) – allows you to create multiple maneuvers and combine them over the course of a single transition

Sequential Push Tool

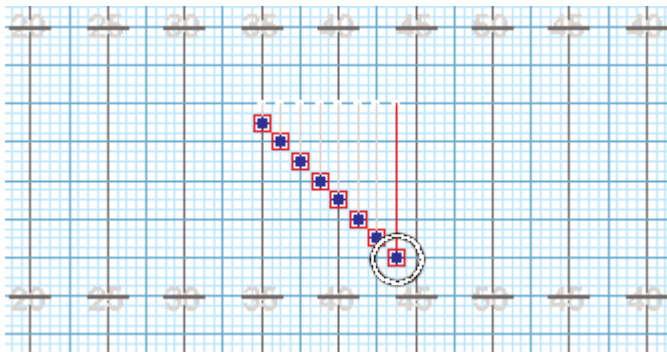
The **Sequential Push Tool** aids in easily creating step offs and drop offs.



Since this tool is an [Editing](#) tool, performers must be selected, and your **Yellow** and **Red Anchors** on the [Count Track](#) must be spread for a transition. Click on the Sequential Push Tool on the [Tool Palette](#) to open the **Sequential Push Control Panel**.



Editing handles appear on each performer. Dragging the **editing handle** of a position to a final location will cause all other performers to follow behind in a sequential movement. The position that is dragged will always be the performer that will travel the furthest in the maneuver.

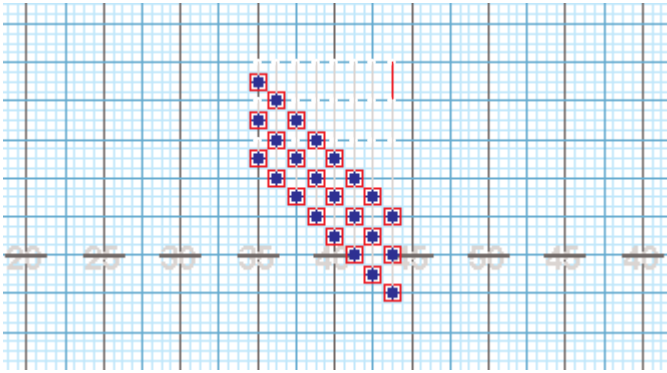


If there are not enough counts in the transition for all performers to have time to step off, the remaining performers will mark time.

Entering a value in the **Stride** text box automatically moves the performers into the new location based on the stride length entered. Likewise, entering a number into the **Distance** text box automatically moves the performers into the new location based on the distance entered. Clicking on the directional compass will move the positions to reflect the new direction.

Snap to Horz/Vert padlock will snap the positions to horizontal, vertical, or 45 degree direction.

Multi-Segment allows you to select more than one shape (segment) and have the step off be uniform in all of the selected shapes as shown here:



The value in **Step Off** designates the counts between each step off. For example, if you entered “2”, then the positions will step off every 2 counts until either the end of the shape or the number of counts in the maneuver is reached.

The value in **Drop Off** designates the counts between each drop off. Typically you will enter a value for either the **Step Off** or **Drop Off** and leave the other at 0. For example, if you enter a “0” as the Step Off and “2” as the Drop Off, all positions will step off together and a performer will drop off every 2 counts until the end of the maneuver. If there are not enough counts in the maneuver, some positions may just mark time.

The [Animation Controls](#) are always accessible while using this tool for previewing the maneuver.

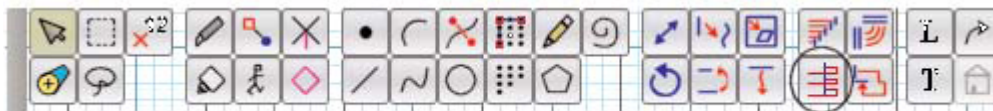
Reset to Hold – resets the animation to a “Hold” from the secondary count.

Revert button resets the handles to their initial position.

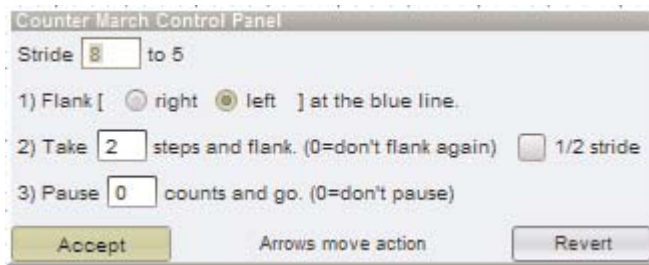
Accept will accept the transition to the drill.

Counter March Tool

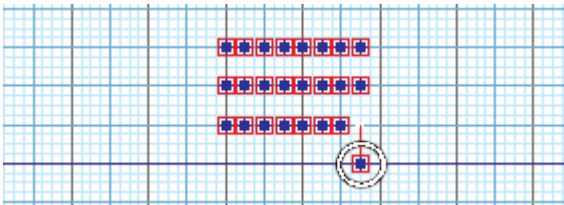
The **Counter March Tool** aids in easily creating counter march transitions.



Since this tool is an [Editing](#) tool, performers must be selected, and your **Yellow** and **Red Anchors** on the [Count Track](#) must be spread for a transition. Click on the Counter March Tool on the [Tool Palette](#) to open the **Counter March Control Panel**.



Editing handles appear on each performer. Dragging the **editing handle** of the counter march to the location on the field where the counter march is to begin. A blue line will designate the location where the counter march maneuver will begin.



In the **Counter March Control Panel**, the value in the **Stride** text box determines the stride length the performers will be using during this maneuver.

The **Flank** options determine which way the performers will first turn in the counter march.

The value in **Take [] steps and flank** designates the number of counts the performers will hold (or mark time) before the second flank.

The [Animation Controls](#) are always accessible while using this tool for previewing the maneuver.

Revert button resets the handles to their initial position.

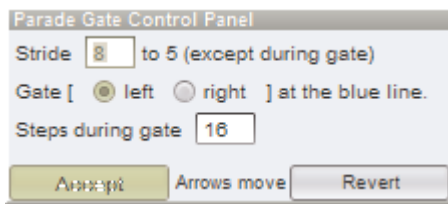
Accept commits the transition to the drill.

Parade Gate Tool

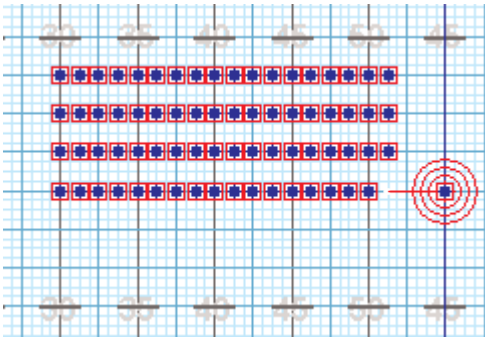
The **Parade Gate** tool allows you to create wide gate turns easily. This is an essential tool for parades when rounding corners.



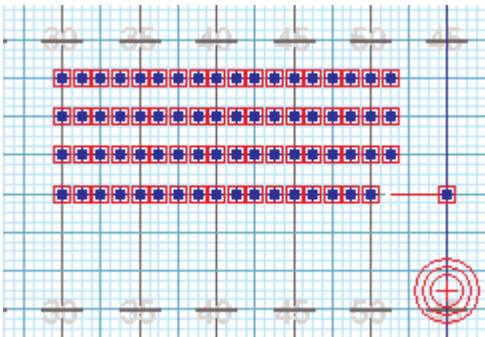
Since this tool is an [Editing](#) tool, performers must be selected, and your **Yellow** and **Red Anchors** on the [Count Track](#) must be spread for a transition. Click on the Parade Gate tool on the [Tool Palette](#) to open the **Parade Gate Control Panel**.



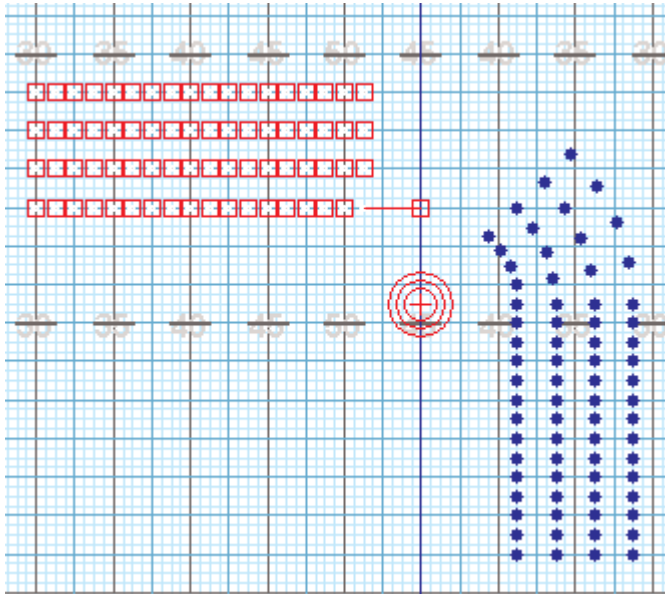
Editing handles appear on each performer. Drag any performer to determine the initial marching direction and the point at which the rotation of the gate maneuver should begin.



The **center point** of the rotation will occur at the final location of the **editing handle** you drag.



You can change the **center point** of the rotation by dragging the **center point indicator**.



In the **Control Panel**, the value in the **Stride** text box designates the stride length the performers will use during this maneuver, except during the actual gate (turn). During the gate all performers will be taking different strides.

Gate [left] [right] at the blue line designates which way the positions will turn when performing the gate. The gate will not begin until the performers cross the blue line.

The value in **steps during gate** designates the number of steps taken in the gate. The default is 16. This means the performers take a total of 16 steps during the execution of the gate maneuver.

Revert resets the handles to their initial position.

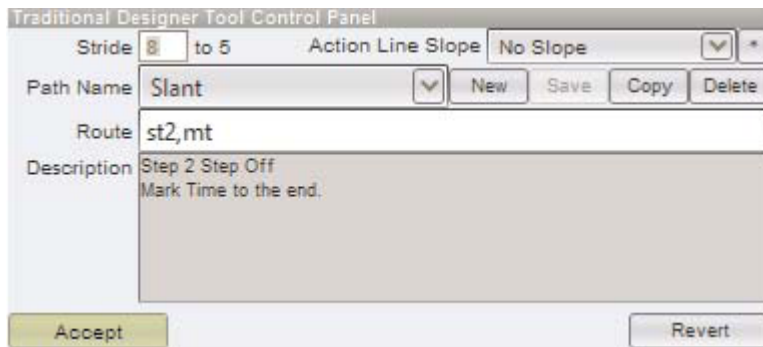
Accept commits the transition to the drill.

Traditional Tool

The **Traditional Tool** aids in creating multiple maneuvers and combining them over the course of a single transition.

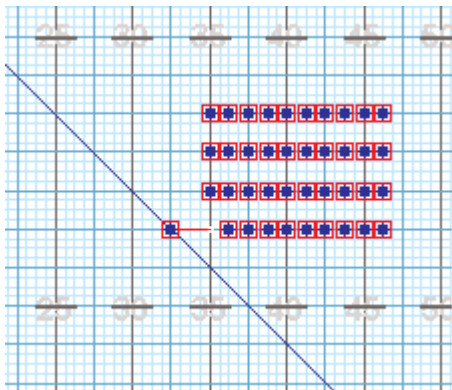


Since this tool is an [Editing](#) tool, performers must be selected, and your **Yellow** and **Red Anchors** on the [Count Track](#) must be spread for a transition. Click on the Traditional Tool on the [Tool Palette](#) to open the **Traditional Tool Control Panel**.

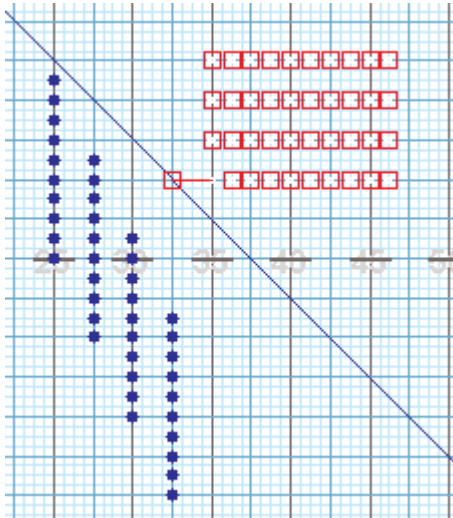


Editing handles appear on each performer. Drag any performer to determine the initial marching direction for all for of the performers.

As you drag an **editing handle** an action line will appear on the field. This action line designates the starting line for a **Route** (maneuver) to begin. As each performer crosses this line, the performer will begin following the **Route**.



In this example, the performers are initially moving in the same direction as the leader (left). As they cross the action line, the performers begin the route. In this case the route is a simple LF (Left Flank).



Traditional Tool Route Key

The Traditional Tool allows you to create multi-maneuver transitions. These transitions are created by entering **Routes** consisting of a combination of moves. There are 8 different moves available:

Code: Movement

LF: Left Flank

RF: Right Flank

MT: Mark Time

FM: Forward March

TR: To the Rear

ST: Step Off (such as step 2)

SD: Drop Off (such as drop 2)

H: Half Stride (taking a half distance step)

Routes are entered in the **Route** box by typing the code for the move followed by a number of steps. Each move is separate with a comma.

For example: **LF2,LF**

The above example is a Left Flank (LF), then take 2 steps and make another Left Flank (LF), then continue marching to the end of the transition. This is a standard left Counter March. When entering the route in the **Route** text box, the description of the maneuver(s) will appear in the **Description** area. This will help you confirm that you are entering a correct route.

Action Line Slope changes the slope of the starting line of the route. Typically the slope will be 0. However you can set the line to a 45 degree slope which allows you to create column left and right formations. There are 7 different settings of slope available: no slope, 22.5, 45, 67.5, -67.5, -45, and -22.5 degrees. Any selection will influence the direction the column will turn.

New creates a new traditional maneuver.

Save will save your route as a traditional maneuver to be used again later.

Copy will open and display a saved route.

Delete will delete a saved route.

Revert resets the handles to their initial position.

Accept accepts the shape into the drill.

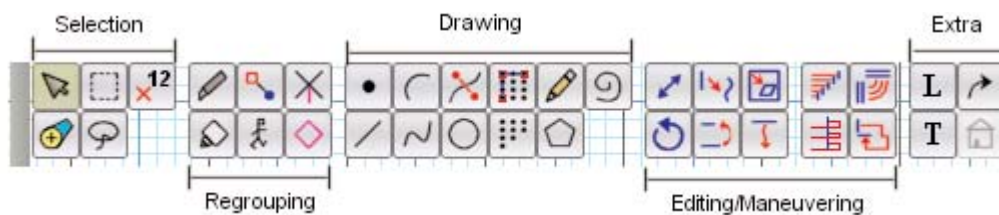
FAQ

The subtopics below cover a broad range of frequently asked questions. You can navigate the topics by clicking the arrow left of **FAQ** in the Table of Contents to expand the list of viewable topics, or by searching for your inquiry in the search box above.

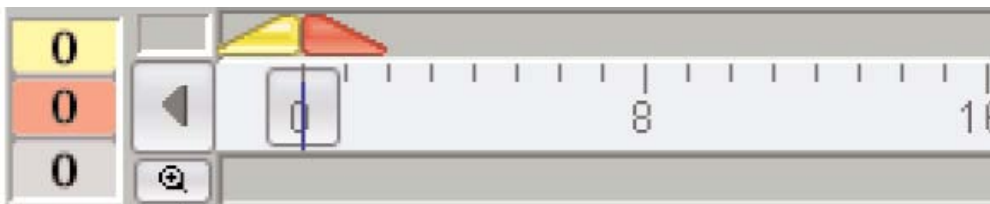
Add Performers to the Drill

Adding Performers to a New Drill

When starting a new file, performers are added to a drill by any of the [Drawing](#) tools on the [Tool Palette](#). Drawing tools on the Tool Palette are outlined below:



To add performers with a Drawing tool, your primary and secondary (red and yellow) anchors must be on the same count on the [Count Track](#).



Although not necessary, we recommend adding all performers on count zero of the drill, especially if you are still “learning the ropes” of 3D. Performers can technically be inserted at any count. This is helpful if you would like to start from a certain set, or “hit” in the drill and work backwards to the beginning.

Adding Performers to an Existing Drill

Much like adding performers in a new drill, you can add performers to an existing drill by drawing the performers with any of the [Drawing](#) tools, while both anchors on your [Count Track](#) are together.

If you need to add multiple people, such as the drum line or color guard, this would typically be the quickest method to adding performers in an existing drill.

If you only need to add a few people, you might want to consider using the Drill Rewrite function. More on that [here](#).

Adding Performers via the Drill Rewrite

Numbers change; it's a fact of life when designing marching shows. It's just about inevitable that there will be some sort of adaptation required from the time you designed (or contracted a designer) your drill and teaching the drill. When that time comes, look to the [Drill Rewrite](#) function to quickly insert or remove performers. Since we're just discussing adding performers on this topic, we'll keep this section related only to the "Insert Performer" option of the Drill Rewrite.

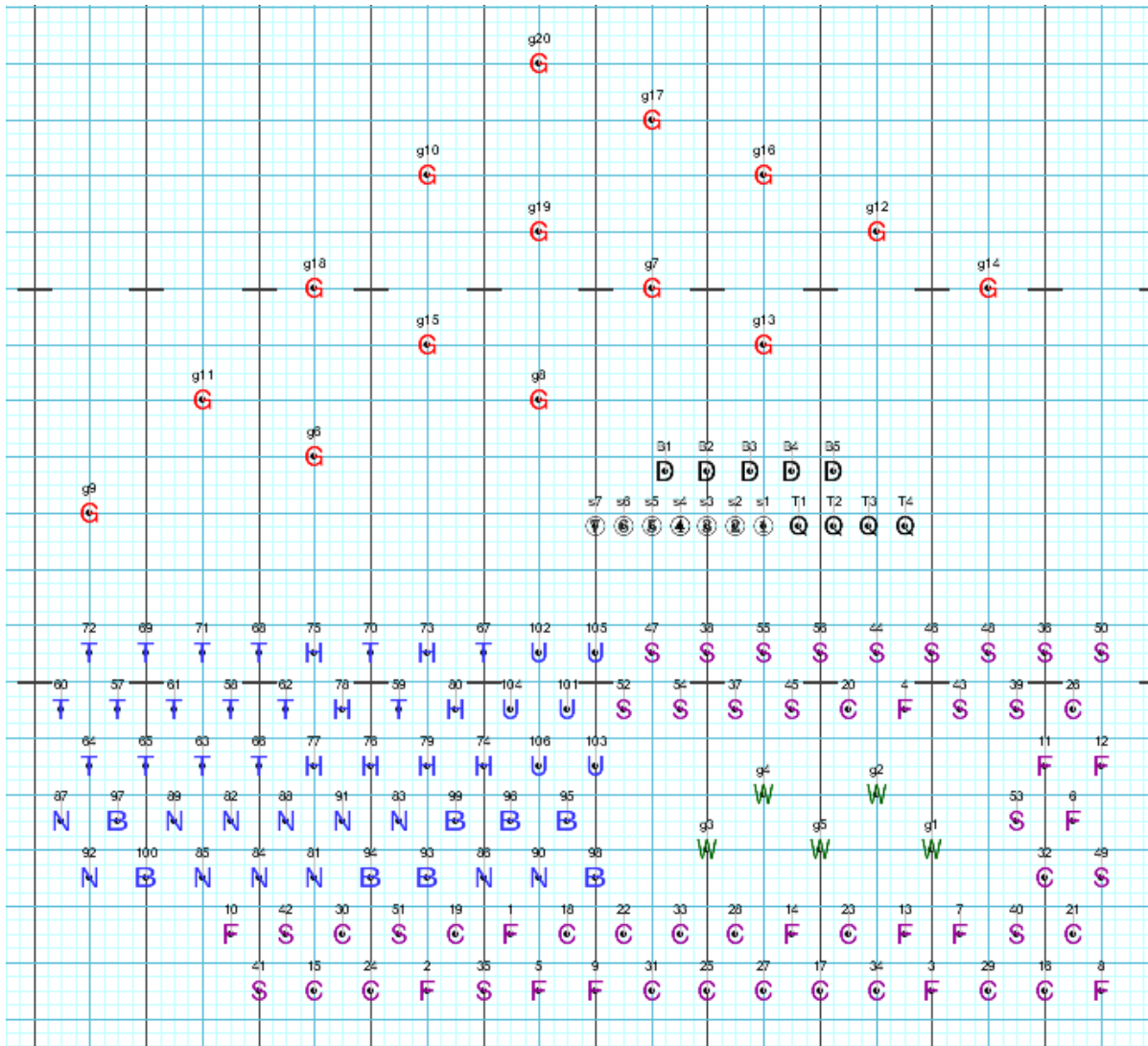
Simply put, the [Drill Rewrite](#) is a function that allows you to quickly insert or remove performers from a drill file. When a performer is inserted into a drill, the Drill Rewrite function will attempt to maintain the integrity of each set. The Drill Rewrite function accomplishes this by paying respect to the way forms are "grouped" (matched) on each set.

Before we get into adding anyone with the Drill Rewrite, it's best if you understand a few concepts first.

Picture vs. Form

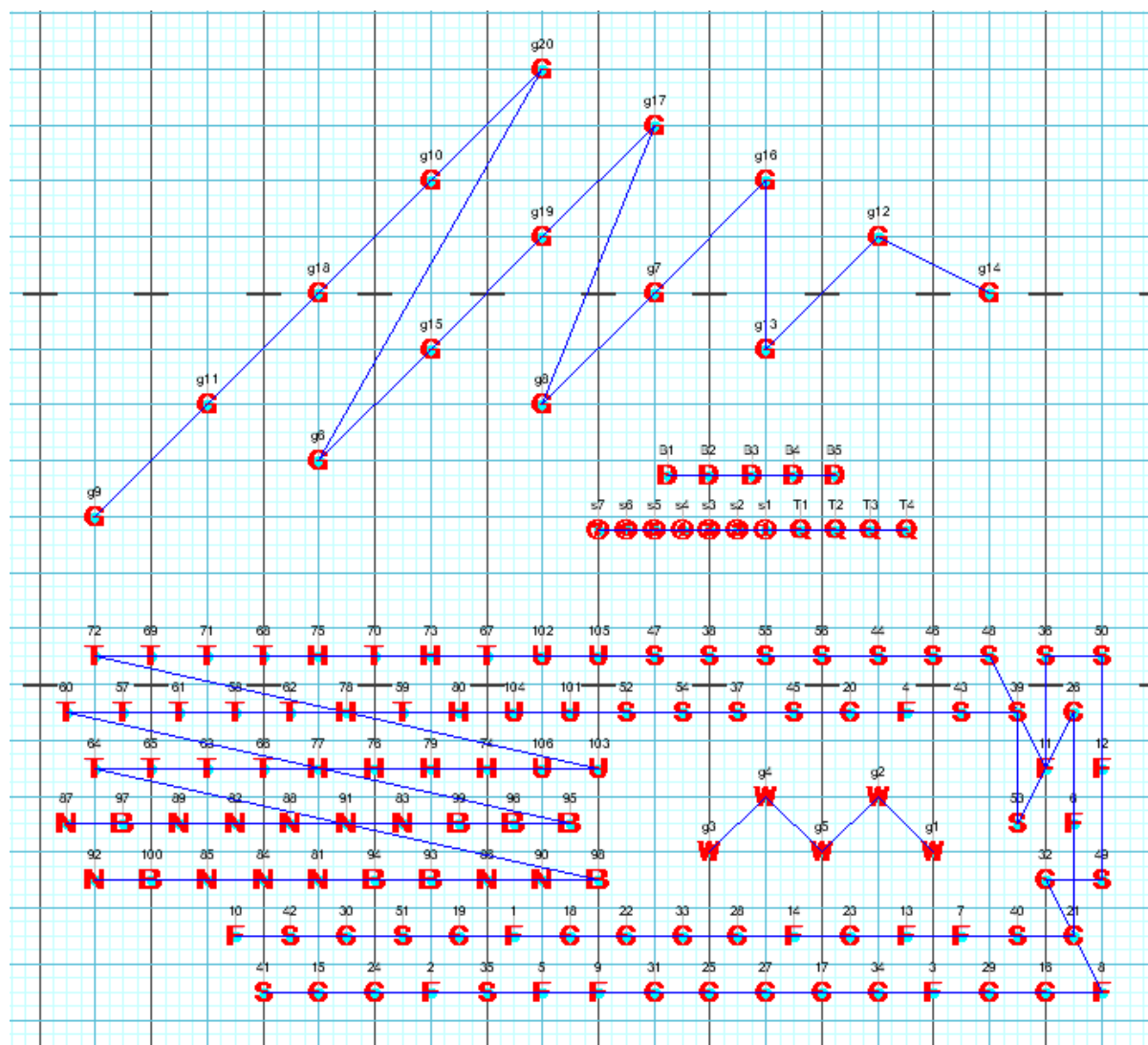
The [Drill Rewrite](#) will insert a performer between two performers that *remain next to each other throughout the entirety of the drill*. This means that if two performers that start adjacent to each other, but at some point in the drill separate into different groups, squads, mesh, etc., you would not be able to insert the performer between them via the Drill Rewrite function. Because of this, we suggest doing a little prep work to maximize the effectiveness of the Drill Rewrite function.

Take a look at the following image.



This is a set of a drill. The performers are standing in the picture for the set. A picture can be composed of multiple forms.

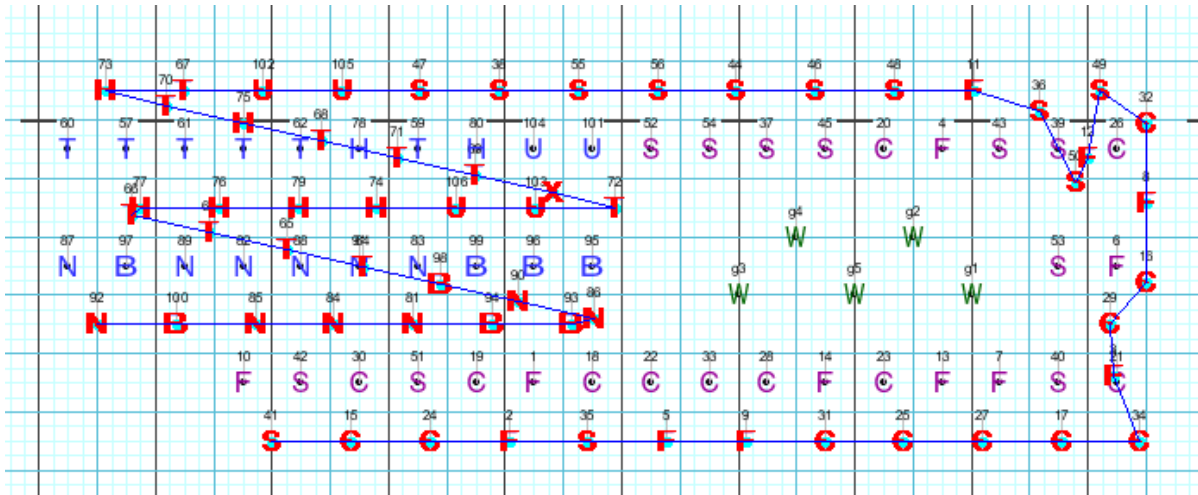
Here's the exact same picture, with all of the forms selected:



In this particular example, multiple forms create the big picture (set). This is important to both understand and identify as you can save yourself quite a bit of work on the back end of the Drill Rewrite.

When equalizing a form to account for the newly inserted performer(s), the Drill Rewrite function will equalize the shape of the form, not the picture.

Our best suggestion is to identify where in the drill you wish to add the performer, then look at each page, set by set, and see how the form is grouped together with respect to other forms. Taking the same example from above, let's say we want to add an additional trumpet. The trumpets comprise a few rows of the wind block and look good if you look at the big picture (set), but if you look at their grouping it seems a little strange. If we add a trumpet with the current grouping, 3D will equalize the form as it stands. The result probably won't be the effect you're looking for. Here's what it looks like if we add a trumpet between T72 and T69 without changing how the form is grouped on that set:



As you can see, 3D equalized the previous form (grouping) when we inserted a new performer. Because the grouping of that particular form was so large, with parts of it going over other forms, the result is quite messy. This is why we recommend observing and/or changing any grouping (if necessary) where you wish to insert a performer using the Drill Rewrite, before going through the Drill Rewrite steps.

Once you are satisfied with how the forms are grouped on each set, you can then go to the [Utilities](#) menu and choose [Drill Rewrite](#). From the Drill Rewrite control panel, on the insert performers tab, click on a performer on the field that you would like to insert the new performer next to. If they performer remains adjacent to another performer in the drill, both performers will highlight. You can then continue forward with the Drill Rewrite process.

Apply Text Boxes to All Sets in a Drill

While text boxes can be incredibly helpful as they can contain pertinent instructions, adding that instruction on every page can be very time consuming. 3D has the ability to drastically reduce the time it takes to add text instruction on every page by using Text Box Templates.



This feature is only available on Interactive and Professional editions of 3D.

Simply put, pushing out a text box on every page is a 3 step process:

1. Enter the information you wish to be displayed on each text box in the Production Sheet.
2. Create the template for where and what information will be displayed in the text box.

- 3. Apply the text box template to count 0 of the drill. You'll then be prompted to apply that text box to all other drill pages (sets).

We'll break the process down into 3 separate sub-topics, which can be found here: [1](#), [2](#), [3](#).

Enter Information in the Production Sheet

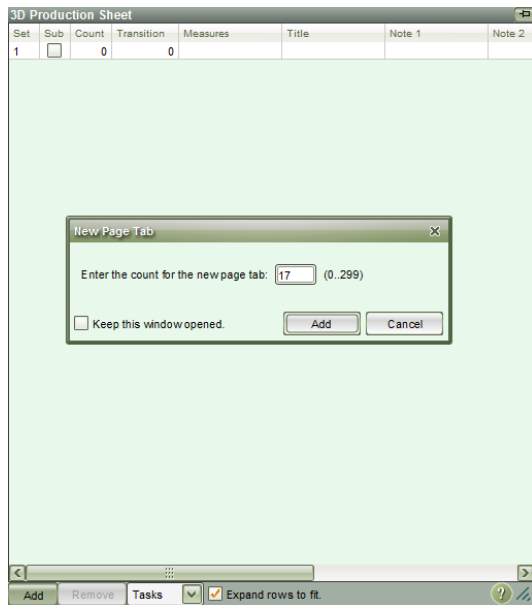
Text Box Templates take your hand-picked information from the [Production Sheet](#) to be displayed in text boxes. Because of this, the Production Sheet must have, at the very least, the information you wish to display in the text box.

3D Production Sheet							
Set	Sub	Count	Transition	Measures	Title	Note 1	Note
1	<input type="checkbox"/>	0	0		Arabesque: Mvt. 1		
1A	<input checked="" type="checkbox"/>	17	17	1-8	Arabesque: Mvt. 1	Hold	
2	<input type="checkbox"/>	33	16	9-12	Arabesque: Mvt. 1	All winds follow the	
3	<input type="checkbox"/>	49	16	13-16	Arabesque: Mvt. 1	All winds follow the	
4	<input type="checkbox"/>	65	16	17-20	Arabesque: Mvt. 1	All winds follow the	
5	<input type="checkbox"/>	81	16	21-24	Arabesque: Mvt. 1	All winds follow the	
6	<input type="checkbox"/>	97	16	25-28	Arabesque: Mvt. 1		
7	<input type="checkbox"/>	113	16	29-32	Arabesque: Mvt. 1		
8	<input type="checkbox"/>	123	10	33-35	Arabesque: Mvt. 1		
9	<input type="checkbox"/>	139	16	36-39	Arabesque: Mvt. 1		
9A	<input checked="" type="checkbox"/>	155	16	40-43	Arabesque: Mvt. 1	Hold	
10	<input type="checkbox"/>	171	16	1-4	Arabesque: Mvt. 1	Flute 70 should curv	
11	<input type="checkbox"/>	187	16	5-8	Arabesque: Mvt. 1	Rifles to the front in t	
11A	<input checked="" type="checkbox"/>	195	8	9	Arabesque: Mvt. 1	Mellos and tubas sta	
12	<input type="checkbox"/>	211	16	10-13	Arabesque: Mvt. 1	Hold	
13	<input type="checkbox"/>	227	16	14-17	Arabesque: Mvt. 1	Tubas, mellos, rifles	
14	<input type="checkbox"/>	239	12	18-21	Arabesque: Mvt. 1	Woodwinds, percus	
15	<input type="checkbox"/>	255	16	22-25	Arabesque: Mvt. 1	Brass, rifles and per	
16	<input type="checkbox"/>	267	12	26-29	Arabesque: Mvt. 1	Woodwinds percuss	
17	<input type="checkbox"/>	283	16	30-33	Arabesque: Mvt. 1		
18	<input type="checkbox"/>	299	16	34-37	Arabesque: Mvt. 1		
19	<input type="checkbox"/>	315	16	38-41	Arabesque: Mvt. 1		
20	<input type="checkbox"/>	323	8	42-43	Arabesque: Mvt. 1		
20A	<input checked="" type="checkbox"/>	335	12	44-46	Arabesque: Mvt. 1		

Much of this information is input in the Production Sheet when you add sets to the drill. Columns like Set, Subset, Count and Transition will all have data based on the pages on your [Count Track](#). The Measures, Title, and Notes 1-5 columns are user defined and would display nothing without your input.

Adding Pages to the Production Sheet

First and foremost, pages must be present in the [Production Sheet](#) before you can add any other related information. To add a page, click the **Add** button at the bottom. A new window will appear, where you can add a page to the entered count for the drill.



You can add as many pages as your drill requires; there is no minimum or maximum limit to the number of pages a drill can have.



By default, a new drill has 300 counts. If you need to add counts to a drill, go to the [Utilities](#) menu and choose the Count Editor. There you will find an option to add or remove counts from a drill.

Once your pages are entered, you can then begin entering information in the Title, Measures and Notes columns. Click in the cell you wish to enter in information, enter the information, then you can click out (off) the cell when done.

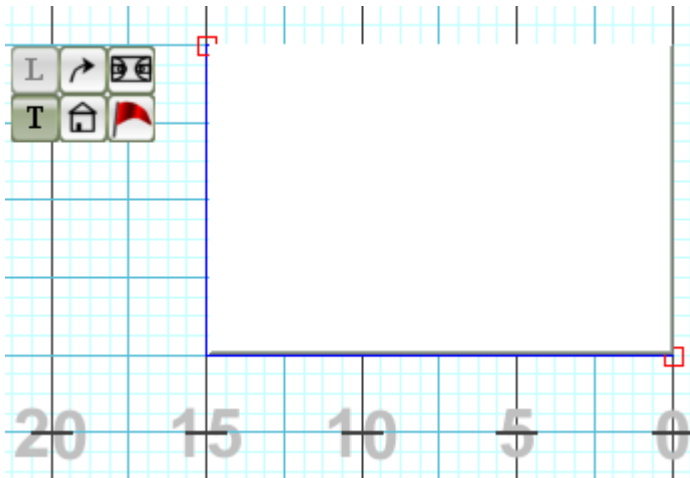
Creating the Template

Once your [Production Sheet](#) has information to display in a text box, creating the text box and saving it as a template is quite simple.

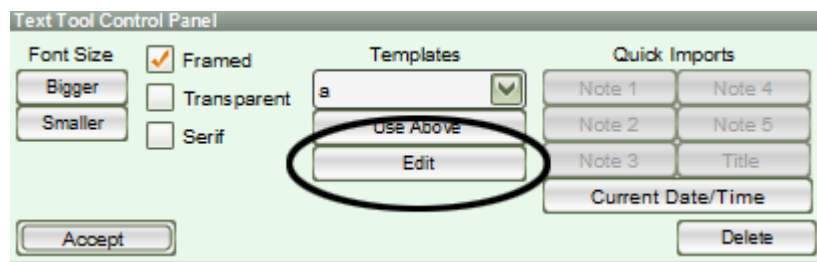
To begin, open the [Text](#) tool on count 0 of the drill.



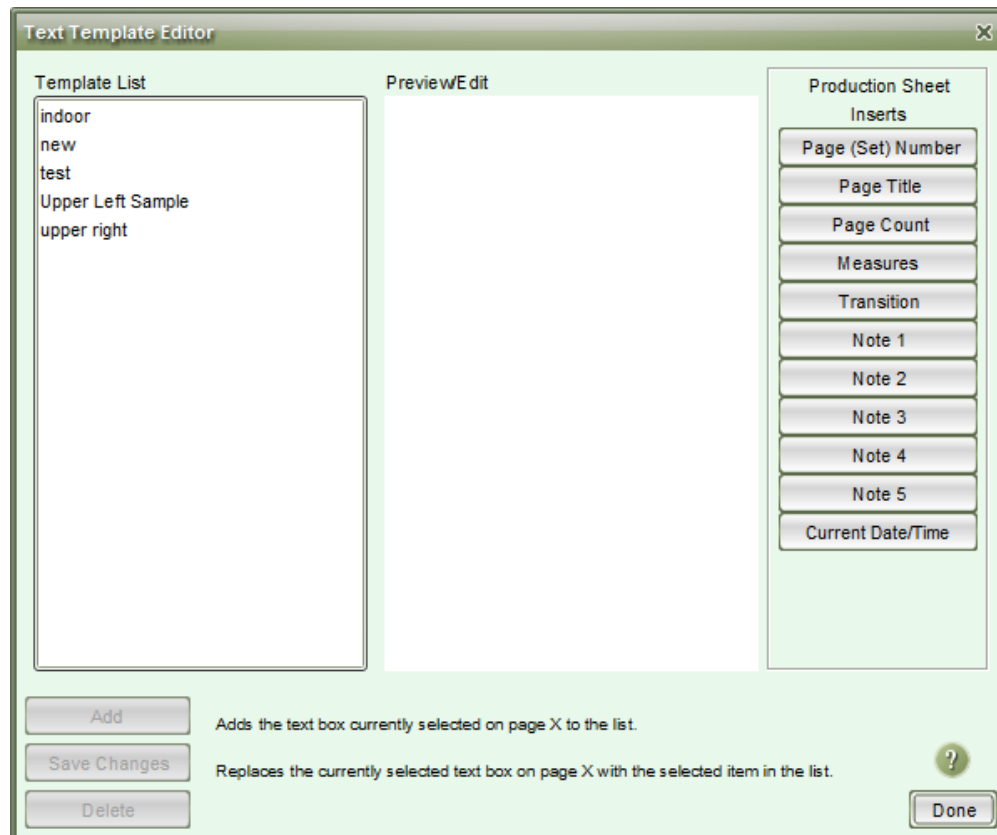
Create the text box shape and size by clicking twice on the field, once for the upper-left corner, and second for the lower-right corner. You can reposition the text box by clicking and dragging the edit handle in the upper-left corner, and re-size the text box by clicking and dragging the edit handle in the lower right corner.



Once you have the size and shape of your desired text box, click the **Edit** button in the Text Tool Control Panel.



The Text Template Editor window will appear. This is where we define what information will display from the [Production Sheet](#) in the text boxes.

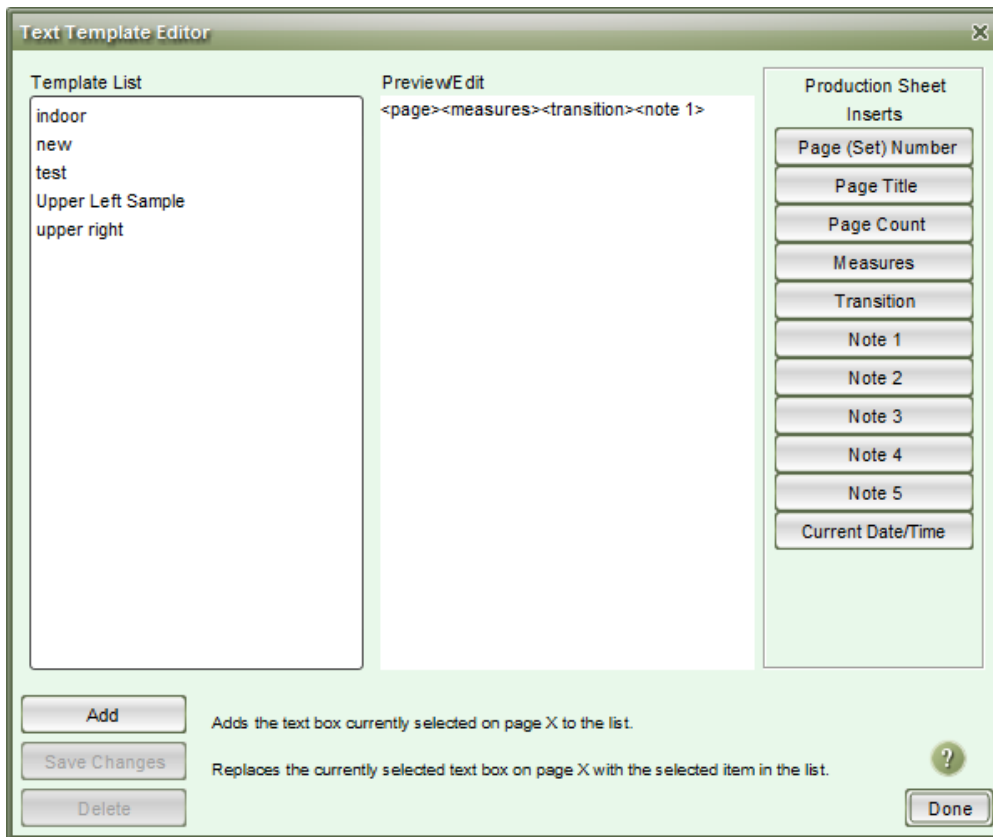


The buttons that run down the right side of the Text Template Editor, appropriately named Production Sheet Inserts, are the list of available options to input in a text box. You'll notice each button has it's own column in the Production Sheet. This is because all of the information in the Production Sheet is at your disposal for use in text boxes.

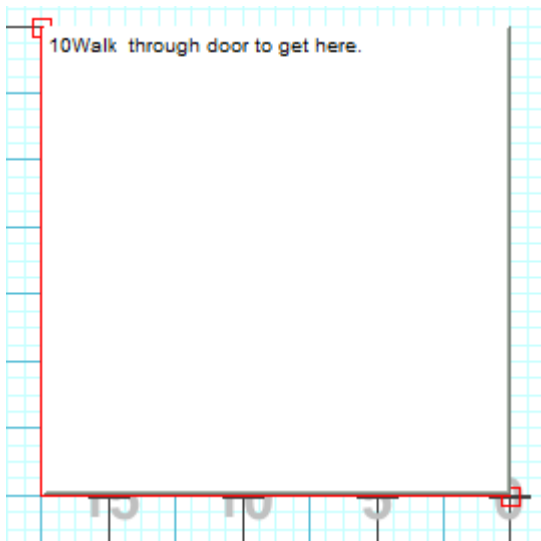
If you click a button, it will add that Production Sheet value to the Preview/Edit section of the Text Template Editor window. Let's say we wanted to have the **Page Number, Measures, Transition, and Notes 1** column in a text box on every page. Here's what it would look like if we clicked each of those respective buttons, in order:



Production Sheet Inserts will be in <> (brackets) in the Preview/Edit button.

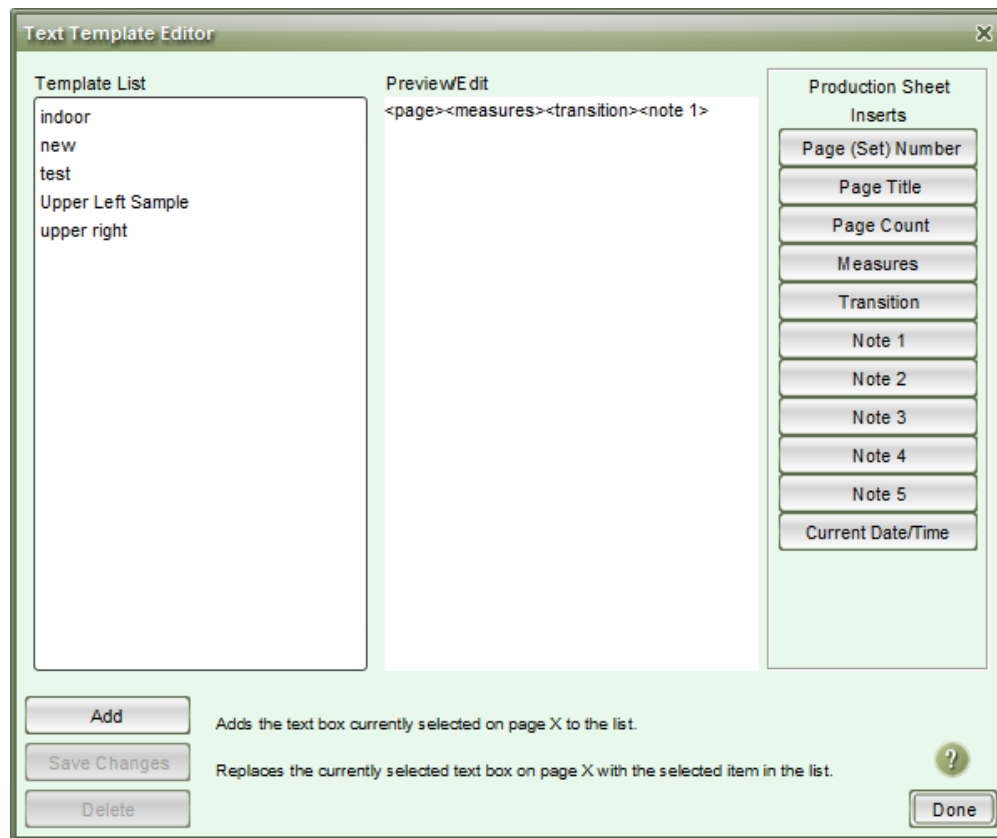


And here's what that text box would look like:

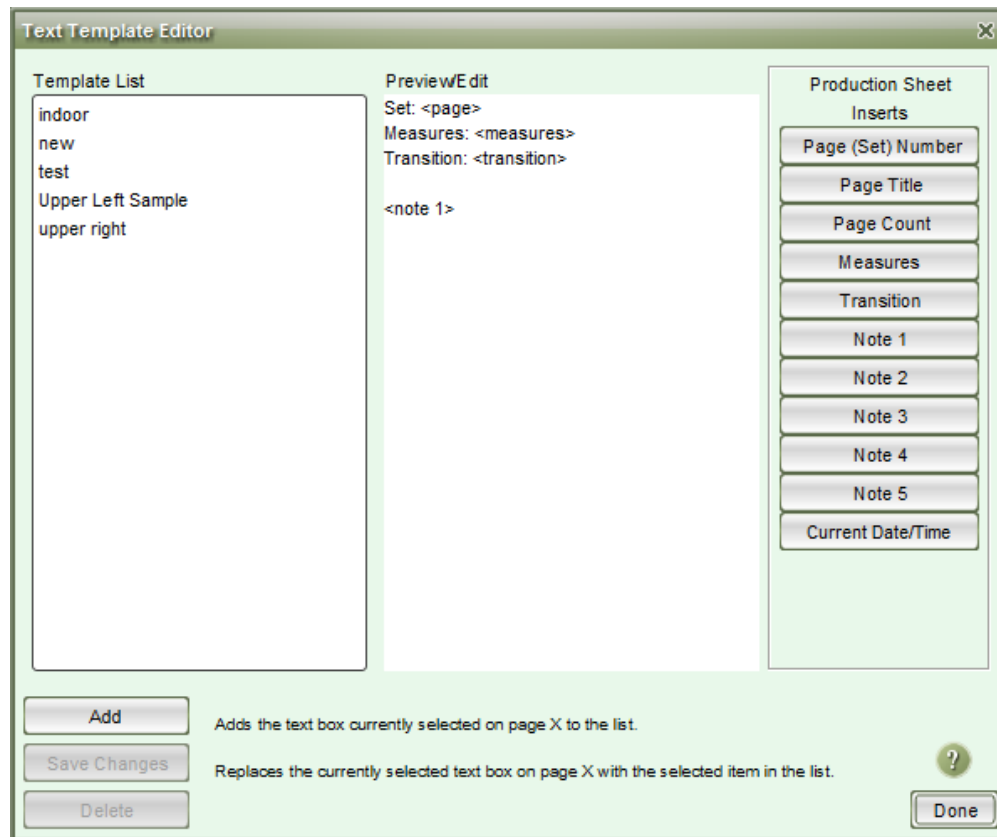


Not exactly the effect we were looking for! This can be prevented by adding a little formatting to the Production Sheet Inserts. Let's go back to the Text Template Editor and format the information to make it more legible.

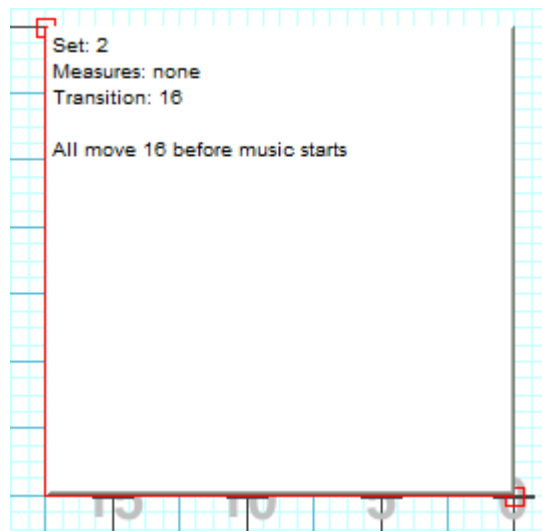
You can type in the Preview/Edit section of the Text Template Editor window. This allows you to add text before or after the Production Sheet Inserts, this way you'll know what numbers are what, as well as add line breaks for visibility (if desired). So with a little formatting, and using the exact same Production Sheet Inserts, we can make this:



Look like this:



Which will result in this on the page:



Once you have the template designed as you wish, press the **Add** button in the Text Template Editor window. You will be prompted to name the template. Enter the template name, press **OK**, then **Done** in the Text Template Editor window.

The template will then be available for use in any future drill by selecting the template from the Templates menu in the Text Tool Control Panel and pressing the **Use Above** button. Press **Accept** in the Text Tool Control Panel to apply the text box.

Adding the Template to All Pages

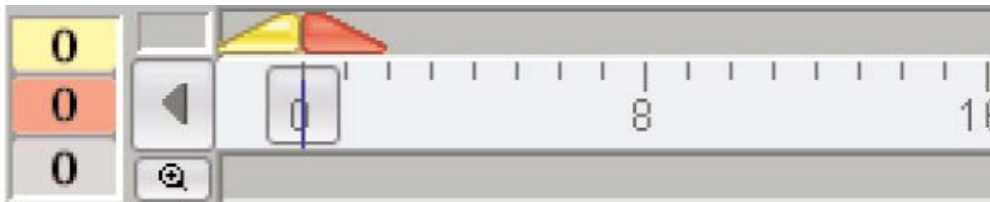
Once your [Text Box Template has been created](#), applying the template to all pages is extremely quick.

Text Box Templates are applied to all pages on count zero of a drill. If you add a template to any other count of the drill, you will not be prompted to apply the template across all pages.



In order to apply the template to all pages in a drill, a drill file must have page tabs. See the [How to Create Page Tabs](#) topic for discussion on adding page tabs to a drill.

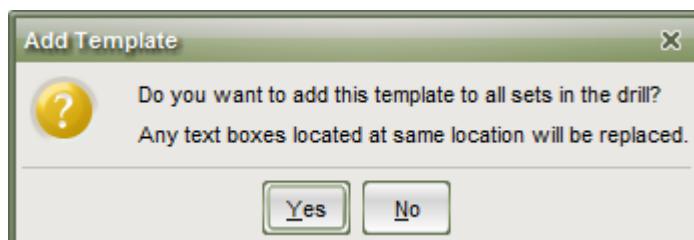
To begin, make sure both anchors are on count 0 of your [Count Track](#).



Open the [Text](#) tool on your [Tool Palette](#).



In the Text Tool Control Panel, select your template from the Templates menu and press **Use Above**. You'll be prompted to confirm adding the template to all pages of the drill.



Select **Yes** and your text box template will be added to every page in your drill file.

Continuation File

A commonly asked question we get each year is “how do I take the last set from one file and make it the first set of another file?”

The process is extremely simple when using the **Continuation File** function.

- To begin, you would need an existing drill file. Open the drill that you would like to continue FROM (the drill which contains the last set that you would like to copy).
- Go to [File](#), and choose [New Drill](#).
- In the New Drill window will be a section for continuing the existing file. Select the file in the list, and then choose whether to continue from the last count of the selected file, or count X (where X is the count you specify).
- Set any remaining options for the new drill.

New 3D Drill File

Drill Title:

Maximum Counts: Only one musical number per drill is recommended.

This drill file is:

☐ a new drill. It is not continued from a previous file.

☒ a continuation of the drill from the selected file:

stride test.3dj

☐ Continue from the last count of drill in the selected file.

☒ Continue from count of the selected file.

Template:

Field/Stage Grid Layout:

Real View Venue:

Real View Sky:

Real View Ground:

Real View Surface:

The new file will be created, with the form from the previous drill set as the opening picture of the new file.



Once the file is created, be sure to [import your Cast List](#) information so you don't have to relabel all performers!

Convert Audio Files to OGG Format

Although permissible audio file types include MIDI and WAV, we recommend using OGG audio files to sync to your drill. OGG files tend to be the smallest size with the highest quality.

If you have been provided a file format that isn't OGG, it's extremely simple to convert an audio file to the OGG format.

Converting Audio Files to OGG

First and foremost, you'll need an application to convert your audio to OGG. We recommend Audacity for it's simplicity and price (free!). Download and install Audacity from the following links:

- Windows Installer: [Download Audacity for Windows](#)
- Macintosh Installer: [Download Audacity for Mac OS X](#)

1. Once you have downloaded the installer, be sure to run the installer so Audacity is installed on your machine.
2. Open Audacity.
3. Click the **File** menu and choose **Open**.
4. A file browser will open. Locate the audio file you would like to convert, select it, and press **Open**.
5. Click the **File** menu and choose **Export**.
6. A file browser will open. Enter a file name. For the File Type, choose **Ogg Vorbis**. Select a location to save the new file then press **Save**.
7. Nothing needs to be entered in the **Edit Metadata** window, so press **OK** to begin the export.
8. Your new OGG file will appear in the destination location you chose to save the file to.

Create a Custom Fabric Using GIMP

The term "fabrics" in 3D could refer to multiple different things. Any textures in the [Real View](#) (including, but not limited to: uniforms, helms, flag silks, flag poles, drums, and skin color) are all considered fabrics for the sake of simplicity. This means that with the right software, you could manipulate the fabrics we provide to customize the look and feel of performers and equipment in the 3D Real View.

To create a fabric for use in 3D, you must have an image editing program. We recommend GIMP or Photoshop.

While there are many image editing programs available, we recommend using GIMP because of it's cost effectiveness (read: free!) and power. This does not mean that GIMP is the only way to go about editing fabrics for use in the Pyware 3D Real View. If you are more comfortable using a different image manipulation software, by all means, please do so. From this point forward, these instructions will detail creating a fabric in GIMP.



We have many custom uniforms designed and available for FREE as a direct download from our site. Please visit www.pyware.com/fabricgallery/ to view the available uniforms.

Downloading GIMP

Download and install GIMP for your operating system:

[Download GIMP for Windows](#)

[Download GIMP for Mac](#)

Once the download is complete, be sure to run the installer to install and set up GIMP for use.

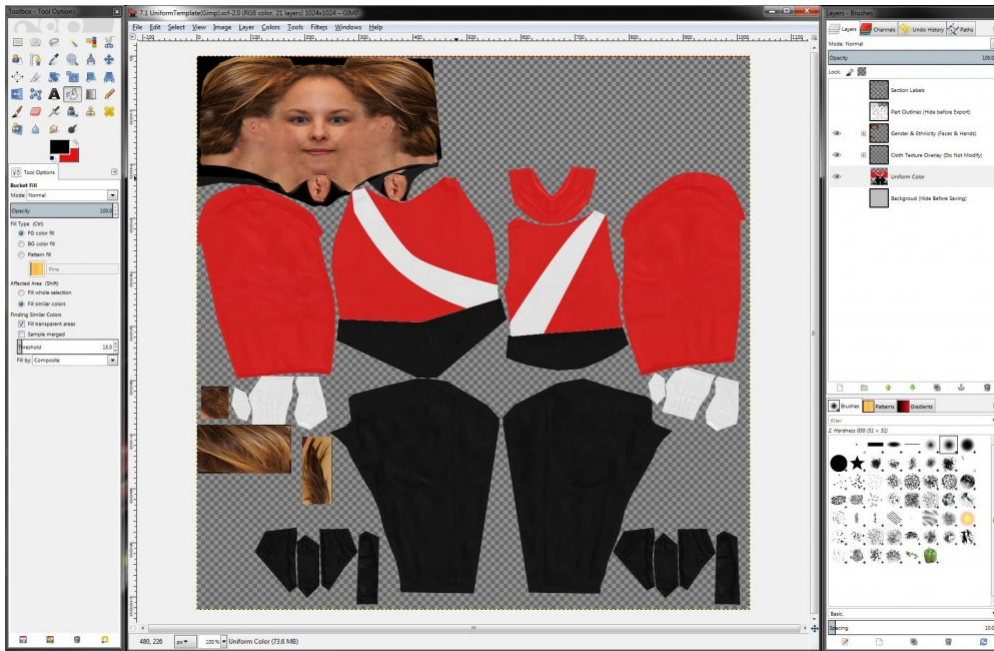
After you have GIMP installed, you can start following the steps to creating a custom uniform by clicking on the sub-topics on the left. The first step would be to [Open the Template File](#) for editing.

Open the Template File

We provide you with a template file that you can edit in GIMP to get your desired custom uniform. The template file can be found at the following location:

Documents\Pyware 3D\Fabric\Templates\7.1 Uniform Template (gimp).xcf

Open the template file. This will launch GIMP, which might take a few moments to fully load. Once the template has loaded, you'll see something similar to the following image:



GIMP Layout

Before we get started, now would be a good time to familiarize yourself with the layout of GIMP.

The panel on the left of the design (or workspace) area is the Toolbox. This is where you will find tools for selection and editing.

The window in the middle of the image is your workspace. This is where you'll be adapting the uniform for your ensemble.

The panel to the right of the design area is the Layers panel. This panel lists all layers of an image. The Layers panel also has quick access to the various paths for the image, whether provided in the template or created by the user. We'll briefly discuss paths later on.

Click through to the next topic, [Creating a New Uniform Layer](#), to continue.

Create a New Uniform Layer

The Layers Panel

In the Layers panel, you will find multiple options, or layers (as they are called by GIMP) available. Think of a layer as a piece of an image. If the image was laid horizontally, you could theoretically stack things on top of the image. Each thing you stacked would be its own separate layer.

Layers can be nested, or grouped under other layers. The order of layers is important, as much like in real life, if you stack a larger object on top of a smaller object, you will no longer see the smaller object. The same can be said with the layers of an image. If, for example, the sash on your uniform was on its own separate layer from the uniform coat, and ordered *under* the uniform coat layer, the sash would not be visible. With that being said, the following layers are available in the template file from top (highest) to bottom (lowest):

- **Section Labels**

This layer, when visible, will display the name of each piece of the uniform that can be edited. The Section Labels layer corresponds with the next layer below it, the Part Outlines. This layer should be hidden before saving the image file.

- **Part Outlines**

This layer, when visible, displays the outlines for the uniform. When creating a custom uniform, you only need to color inside the boundaries of this layer, as anything beyond the outlines will not be represented on the performers. Think of it as coloring inside the lines of a coloring book. This layer should be hidden before saving the image file.

- **Gender & Ethnicity (Face & Hands)**

The Gender & Ethnicity layer is a group of layers that contain options for different ethnicities for the performers. To change the ethnicity of the performers, click the visibility (eye) icon to turn off the current skin, and click in the same area to turn on the visibility on the ethnicity layer you wish to use. You may need to expand the list to view the available layers.

- **Cloth Texture Overlay**

This layer contains an overlay to add a sense of realism to the uniform. You should not need to edit anything in this layer.

- **Uniform Color**

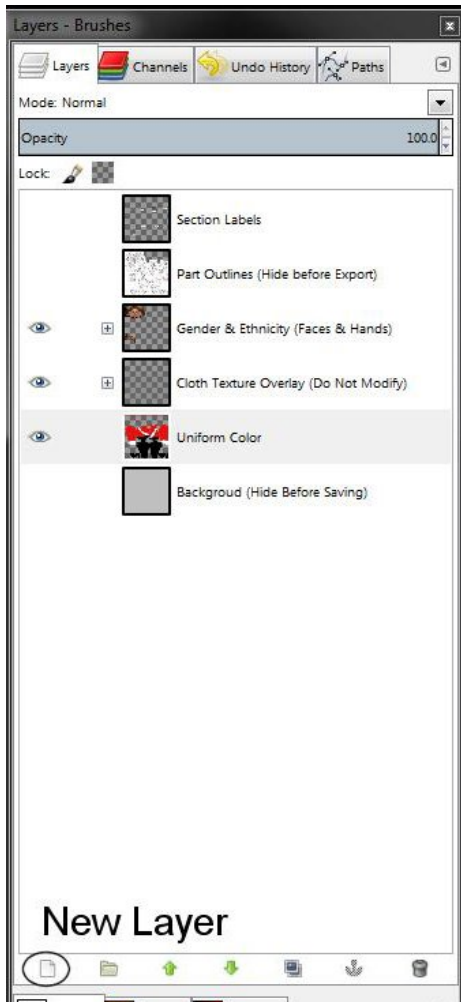
The Uniform Color layer shows the current template uniform. You will be creating a new layer just like this one when designing your custom uniform.

- **Background**

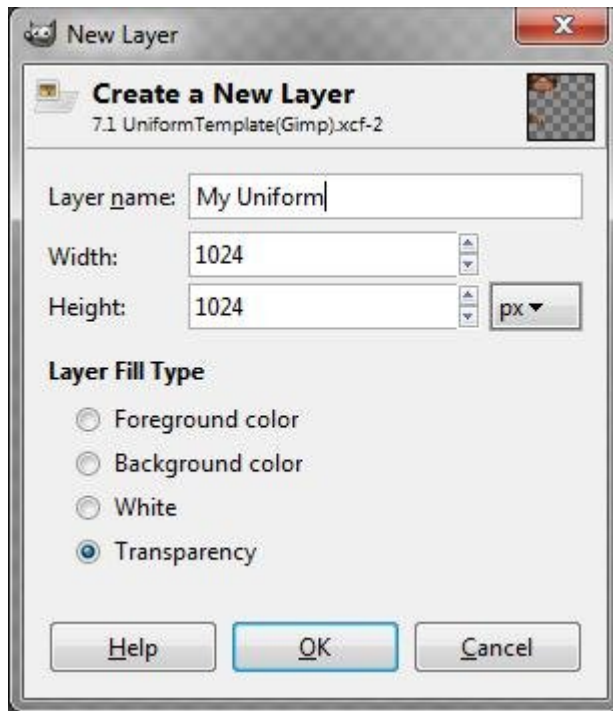
The Background layer is available should you want to have a color behind the uniform. This layer should be hidden before saving the image file.

Create a New Layer

You'll want to create a new layer when working on your uniform, otherwise you'll overwrite the template. To create a new layer, click the **New Layer** button.



A new window will appear. Give the layer a name, then press **OK**.

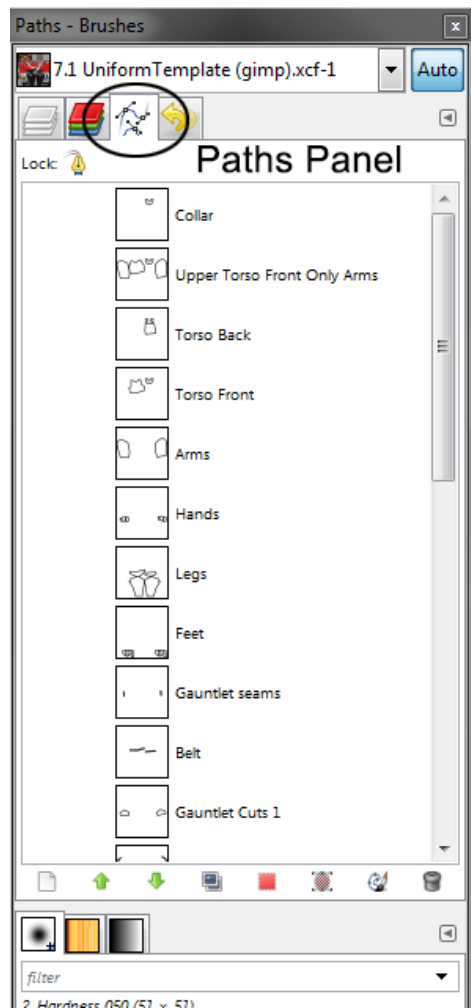


You'll see your newly created layer in the Layers panel. As we discussed earlier, the order of layers in the Layers panel is important. Be sure that your new layer is between the **Cloth Texture Overlay** and **Uniform Color** layers. Whenever you're designing the custom uniform, you will want to be sure that this new layer is selected for editing. Again, you do not want to edit the template layer!

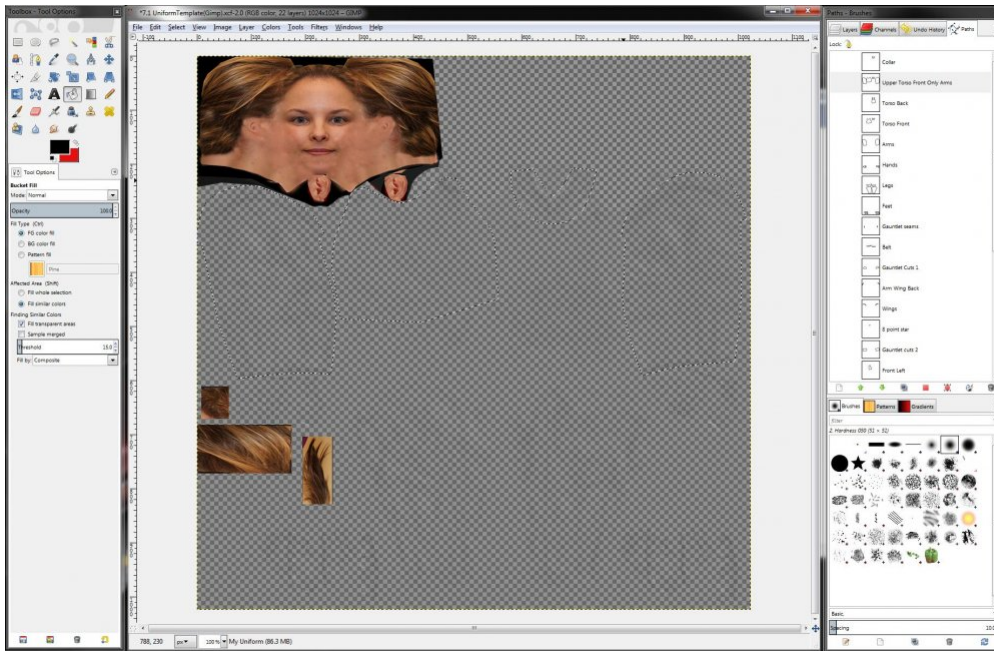
Click through to the next topic, [Select Paths to Edit](#), to continue.

Select Paths to Edit

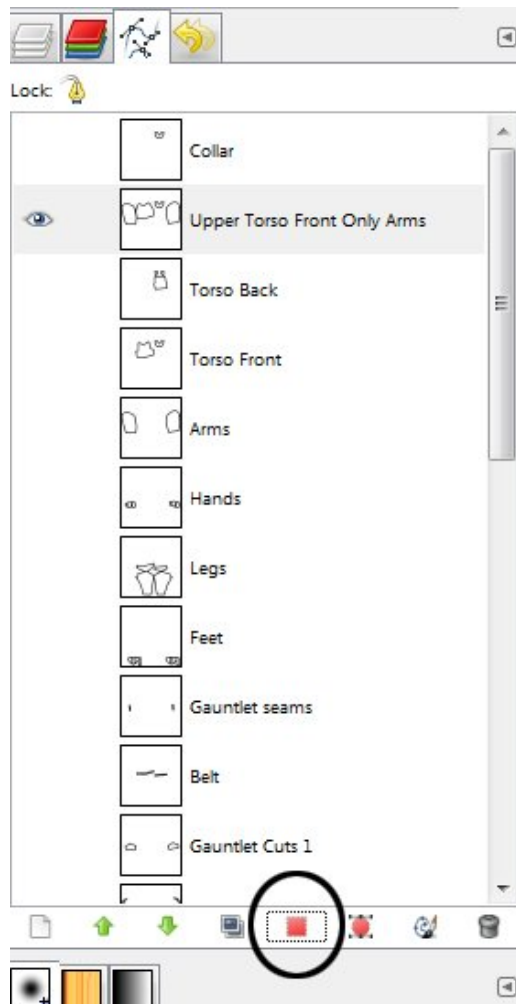
In its simplest form, creating a custom uniform is much like coloring between the lines. In GIMP, the lines we set as the boundaries for color are called Paths. If you open the Paths panel, you'll see various paths with uniform part names. The Paths panel is opened by clicking on the Paths tab in the Layers window.



These paths act as the guides (boundaries) for colorizing the uniform. For example, if we click on the the **Upper Torso Front Only Arms** path, you'll see those pieces of the uniform are selected. If you go back to the Layers panel and turn off the visibility for the template uniform, the selected path will be much more obvious.



If we choose the Path to Selection button, the line changes to a dashed line, indicating it's been selected. When a path is selected, you can only color inside of that selected path.

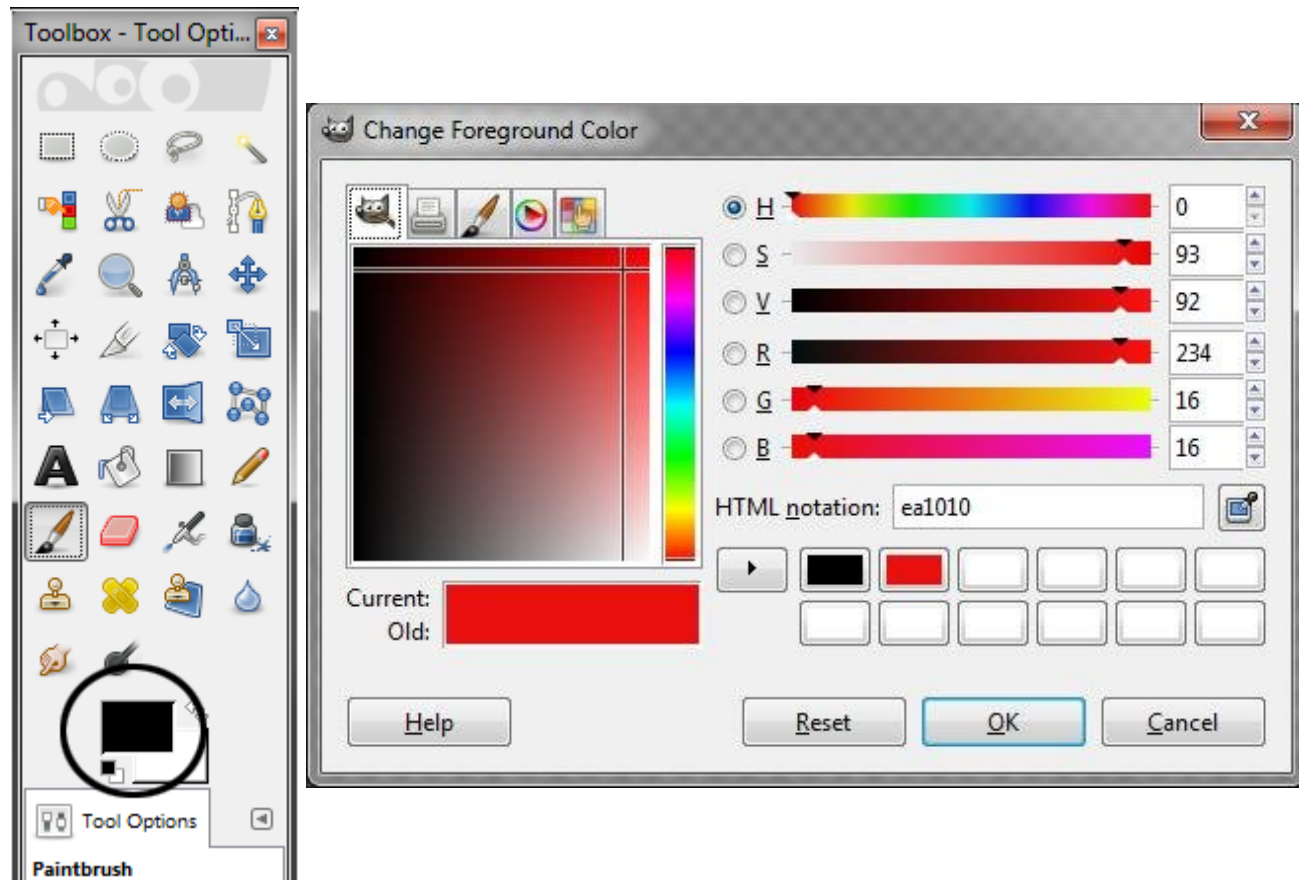


Click through to the next topic, [Colorize Paths](#), to continue.

Colorize Paths

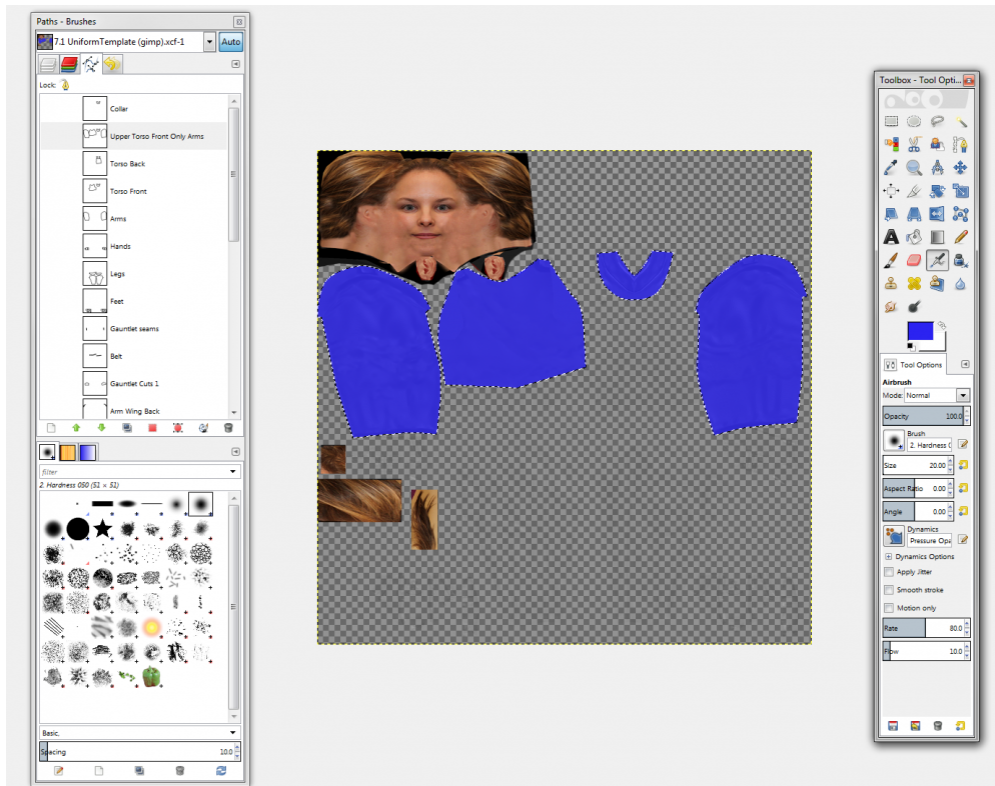
Once a path has been selected, you can easily fill the selected area by using either Photoshop or GIMP's Fill command. Before you fill the selected area, you'll want to first specify which color you would like to fill the area with.

Click on the Foreground Color box and a Color Picker will appear.



Choose the color you wish to fill the area with, then press **OK**. With the path selected (and your uniform layer selected), go to the **Edit** menu and choose **Fill with FG Color**. This will apply the color you have selected to the path.

In this example, we colored the **Upper Torso Front Only Arms** path. This filled the selected path with the foreground color I have selected (blue).



You can repeat this process by selecting the next path, setting the color you wish to fill it with, then choosing the **Fill with FG Color** command to fill the selected area.

Click through to the next topic, [Hide Section and Label Outlines](#), to continue.

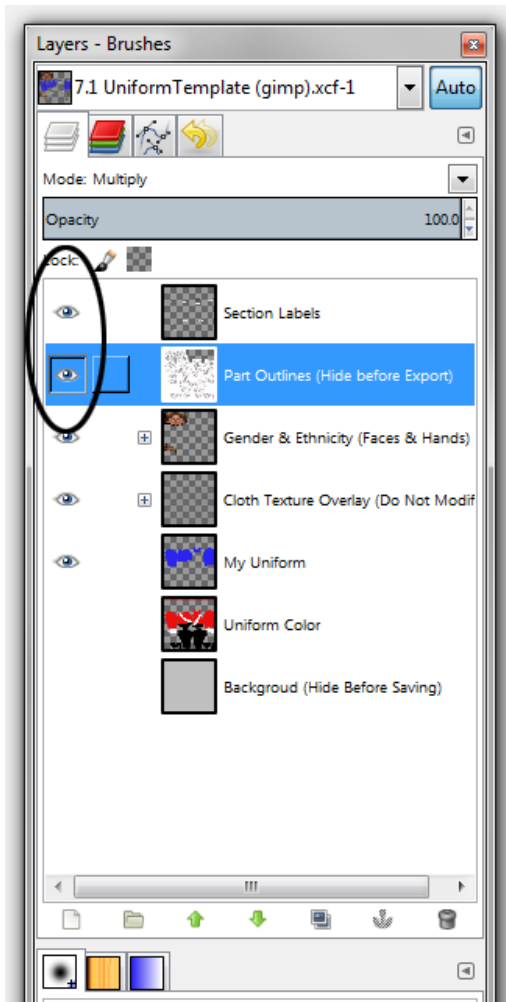


The above is for creating a very simplistic uniform. You can get as creative or technical as needed with the template file when customizing the file for your ensemble. Be sure to stay inside the guide lines for each uniform piece.

Hide Section and Label Outlines

Once you have completed the uniform, you'll want to hide the **Section Labels** and **Part Outlines** guide layers before saving the file as an image. If these layers are not hidden before saving the image and loading the image in 3D, you'll have an undesired effect of seeing both the outlines and section labels on the performers.

To hide these layers, click the visibility (eye icon) next to the layer.

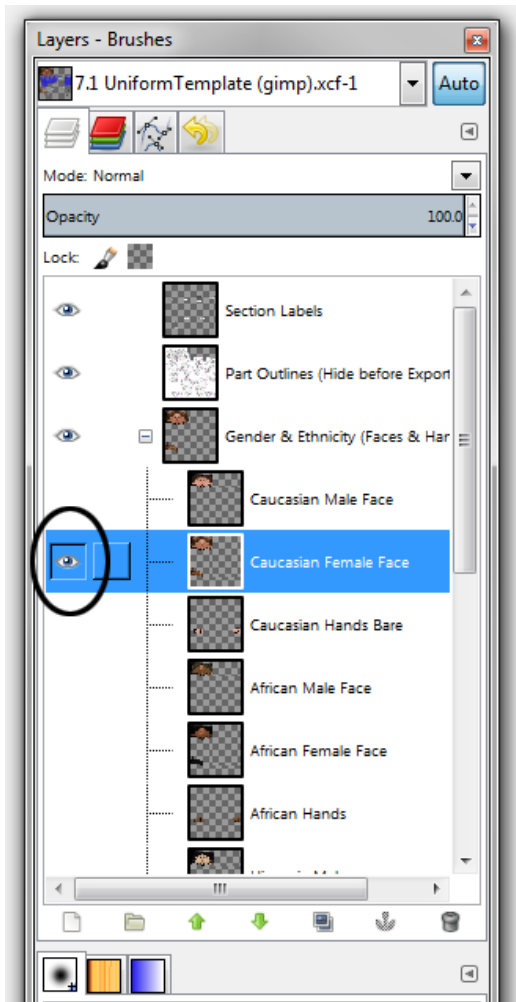


Click through to the next topic, [Save As Image File](#), to continue.

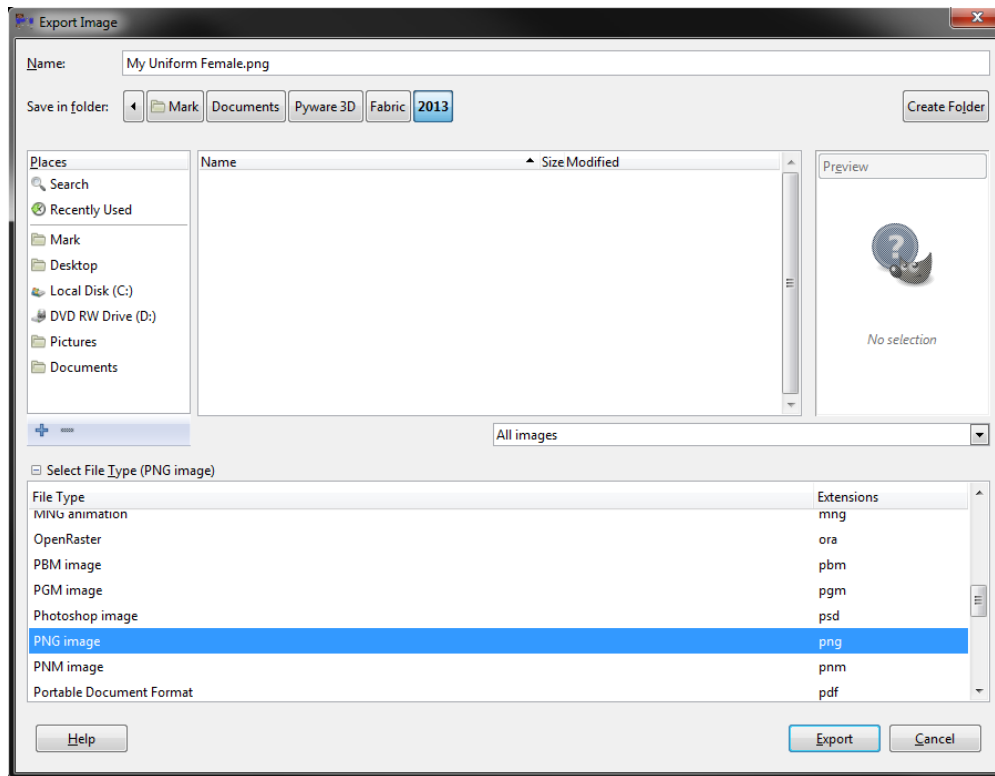
Save As Image File

After you have completed the uniform and hid the guide layers, your file will be ready to be saved for uploading in 3D.

You'll want to save two copies of the file, one for male uniforms, and one for female uniforms. Turn on the gender layer of your choice by clicking the **visibility (eye icon)** for that layer.



Hide the gender layer that you will save second. Go to the **File** menu and choose **Export**. For the file type, choose either a .jpg or .png image file. Give the file a name, and be sure to save the image in an easily accessible location.



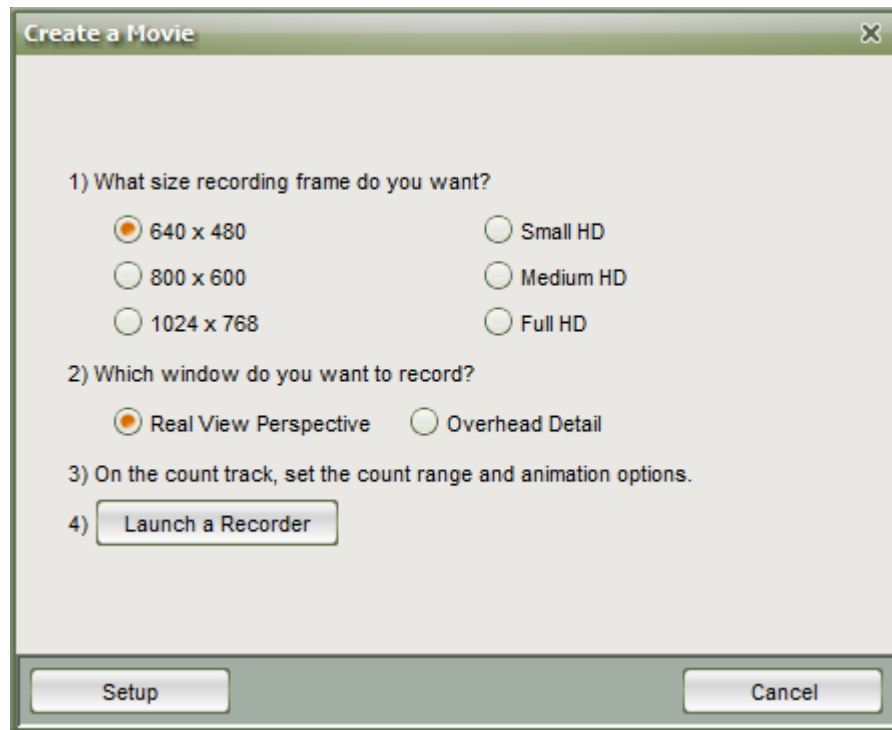
Repeat this process for the opposite gender you just saved.

At this point, editing the uniform should be complete. For the next step, you'll want to jump to the [Load a Custom Fabric File in 3D](#) topic.

Create a Movie of Your Drill

Capturing a movie of the drill animation is a fantastic way to share the animation with either your students or clients, especially if they do not have the ability to download and install the demonstration version of 3D.

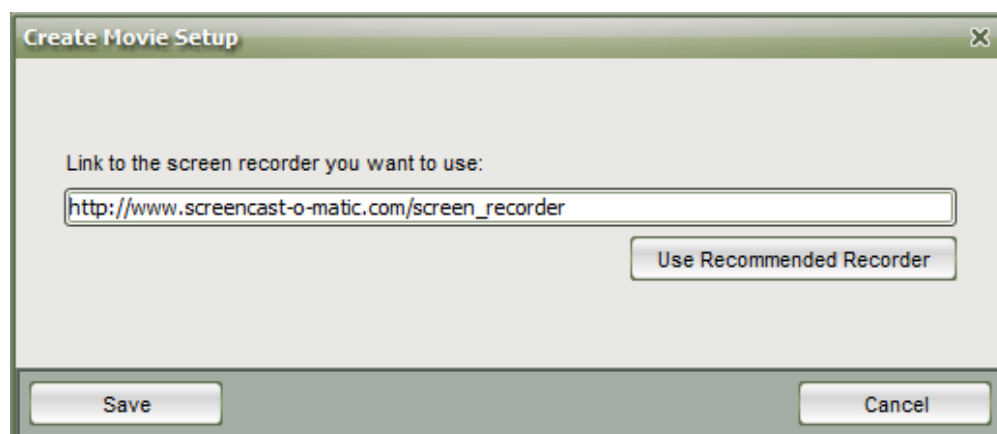
To create a movie of your drill, you'll need to go to the [Utilities](#) menu and choose [Create Movie](#). A new window will open with various recording options.



If you know the size of the movie you would like to create, you may set the size option here. If you are not sure about which size you would like to use, you can set the size later once you have launched the recorder.

We launch a 3rd party application from 3D called Screencast-O-Matic to capture the animation and save it as a video. Before you can use Screencast-O-Matic, you'll need to set up the application for use in 3D. To do so, click on the **Setup** button in the Create a Movie window.

The Setup window will appear. Simply click the **Use Recommended Recorder** button and press **Save**. This will take you back to the Create Movie window.

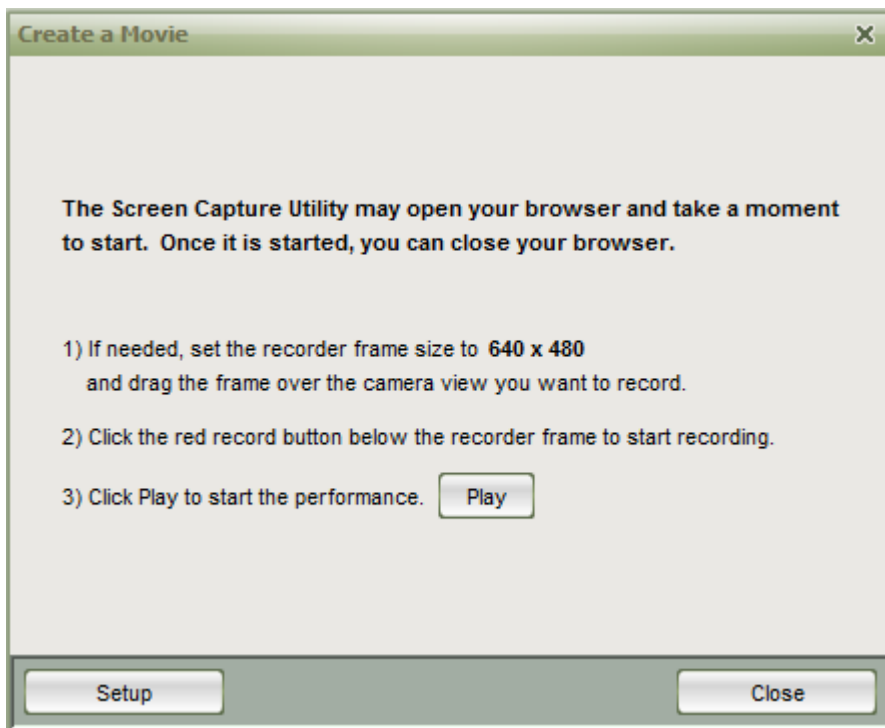


Choose **Launch a Recorder**. Two new windows will open, one for 3D and the other for the screen recording application. It's very possible your web browser will open, as Screencast-O-Matic is typically launched from a web browser (unless otherwise already installed on your machine).

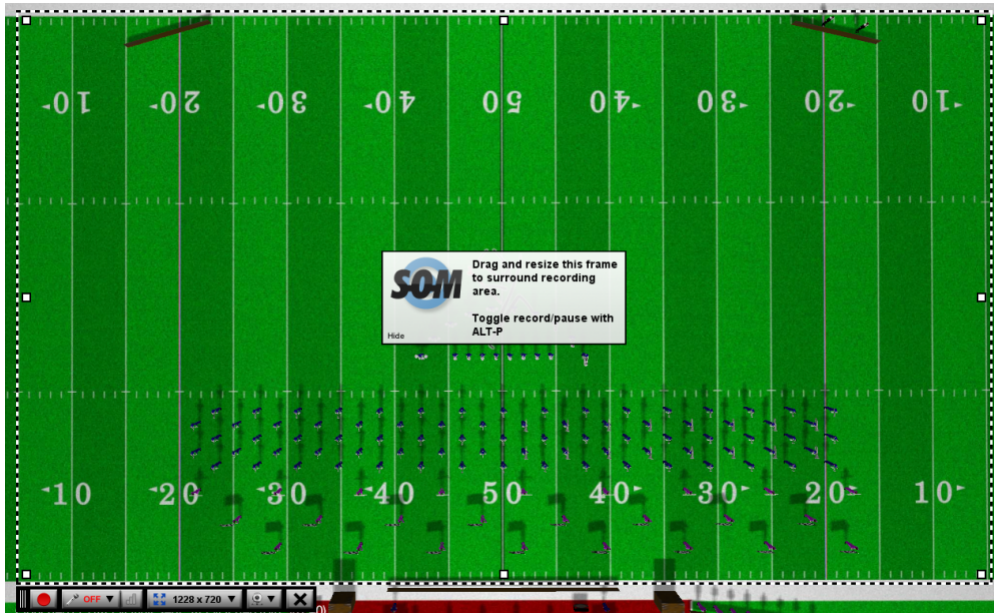


As of Mac OS X 10.7.3, all Java Applets are disabled by default. Scroll to the bottom of the page for instructions on enabling Java applets to run on Macintosh.

The 3D window gives further instruction for recording.



The screen capture window is adjustable. You can click and drag on the frame to resize the recording area, or click and drag in the middle of the recording area to reposition. The screen recording application will only capture what is included in this frame.



Now would be the time to prep the drill for capture. Size the screen (whether you're recording the perspective window or the design area) as big or little as you wish.

Press the **Record** button once you are ready to start recording. Screencast-O-Matic will provide a brief countdown before recording actually occurs so you may press **Play** to start the animation in 3D.



Be sure to keep your mouse out of the recording frame while recording. The screen recording application will capture ANY movement inside the recording frame, including your mouse.

When the animation is complete, press **Done** in the screen recording application. You will then be able to preview your recording, as well as save it out in various formats, through the screen recording application.

Recording Audio with the Video

Click through to the appropriate sub-topic for your machine for discussion on recording audio playback with the video animation.

[Recording Audio on Macintosh](#)

[Recording Audio on Windows](#)

Enabling Java Applets to Run on Macintosh

To enable Java applets (this is required to run the screen recorder application), do the following:

Go to Mac HD/Applications/Utilities and open **Java Preferences**.



On the Security tab, check the **Enable Java content in the browser** option.



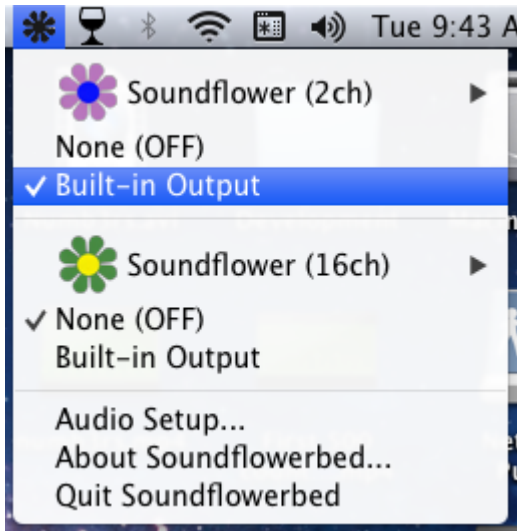
In Safari, click on the **inactive plug-in** link (on the screen recording application's page) and enable the plug-in. A restart of Safari is required.

Recording Audio on Macintosh

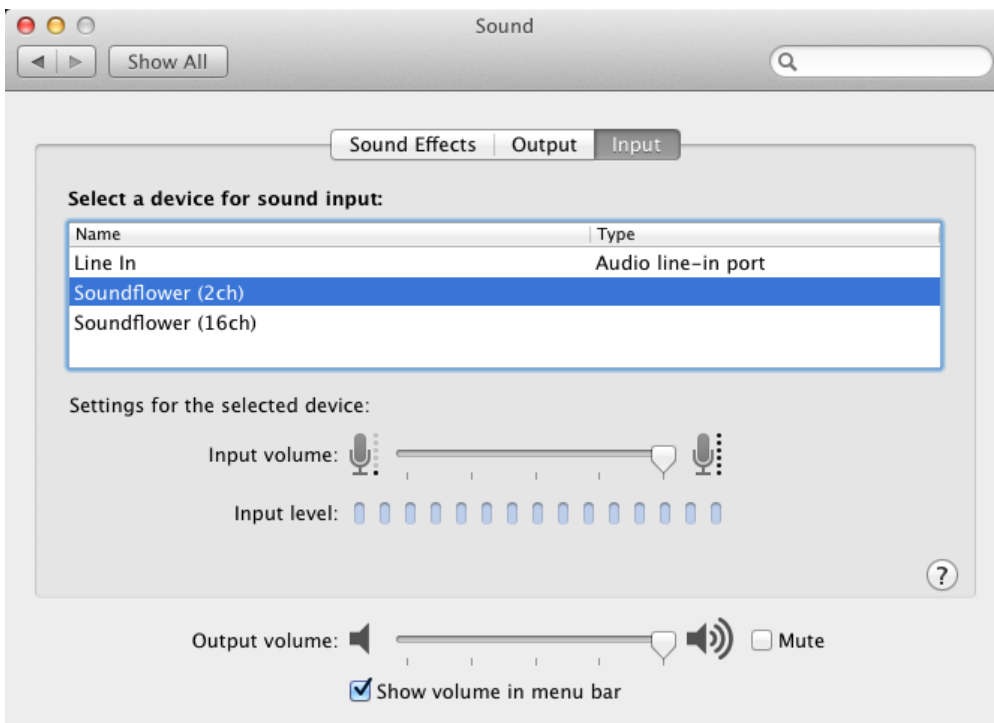
If you are creating a movie on a Macintosh with Screencast-O-Matic, you'll need to install a Utility Application called SoundFlowerbed to capture audio with the video.

Download SoundFlowerbed from <https://github.com/crmne/Soundflower/releases> and install the application.

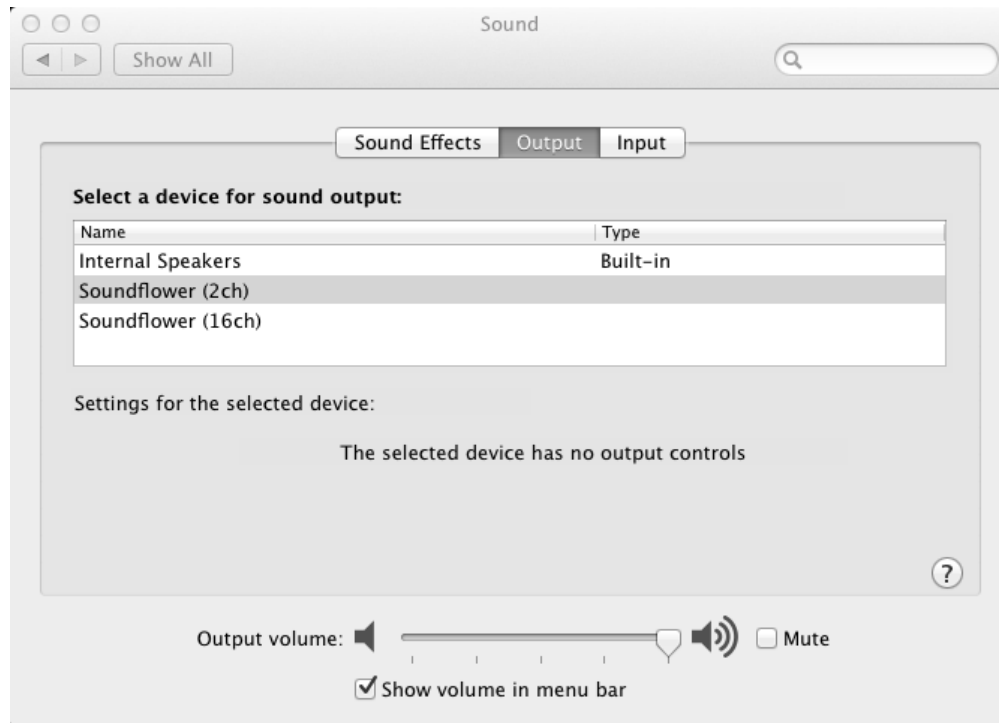
Once installed, run SoundFlowerbed from Applications. You will not see a user interface when you open the application. Locate the Flower in the menu bar and **change the setting for input for 2 channel**.



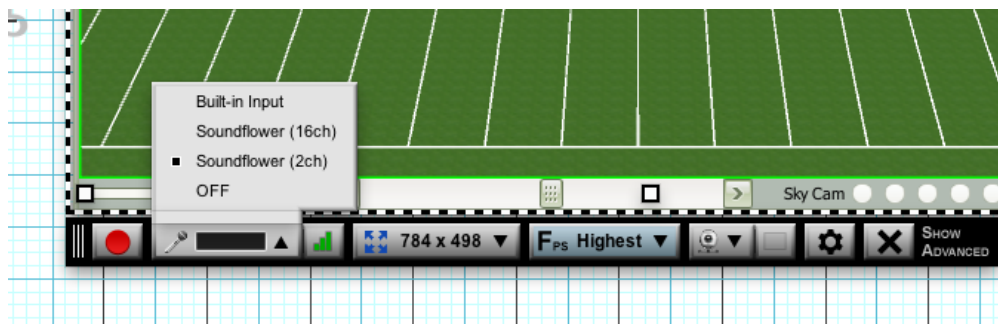
Open **System Preferences** and go to **Sound**, click on the **Input** tab and select **Sound Flower 2 Channel**.



Click on the **Output** tab and select **Sound Flower 2 Channel**.



Run Screencast-O-Matic, and set the microphone to be **Sound Flower 2 Channel**.



Once this has been set up, you'll be able to record both audio and video at once.

Recording Audio on Windows

The free version of Screencast-O-Matic (which is what is launched by default when following [these](#) instructions) records audio from your microphone. If you have a standard auxiliary cable, you could plug the cable into both the headset (speaker) and microphone jacks on your computer. This will loop the audio through your computer, allowing you to record both audio and video at once.

If you do not have an auxiliary cable that you can plug into your machine, you could purchase the Pro version of Screencast-O-Matic. We actually recommend this route for capturing audio with video on

Windows machines as the audio is captured from your computer's sound card, giving you the highest quality recording.

Create a New Drill

By default, a new drill is created when you open 3D. This is a blank drill file with 300 counts and default field layout settings.

Counts can be added or subtracted to a drill file with the [Count Editor](#), found in the [Utilities](#) menu.

Field layout settings, such as grid size, shape, division lines, and markers can be edited with the [Grid Designer](#) in the Utilities menu.

Continuing a Drill from a Previous File

Once you have completed a drill file (movement) of your show, you can quickly transfer the picture of the last page (set) along with performer label, symbol, uniform and equipment information, to a new drill file. To continue drill from one file to another:

- Open the drill you wish to transfer continue FROM
- Go to the File menu, choose [New Drill](#)
- Enter the new file name you are continuing TO in the Drill Title field
- Choose the "...continuation of the drill from the selected file..." button, and select the drill you have open. In this example, we're continuing from Movement 1.3dj
- Choose whether you wish to continue from the last count of the selected file, or from count X, where X is the count you specify
- Press Okay

Create Page Tabs

Page tabs, or what you might know as sets, pictures, etc., are markers on the [Count Track](#) to indicate where in time the ensemble “hits” a set. We recommend using page tabs to indicate where each set is throughout your show, including the opening picture on count zero. This is because you can more accurately draw transitions in the correct amount of counts by clicking on a page tab (which in turns spreads your anchors from the page tab you clicked on to the previous page tab).

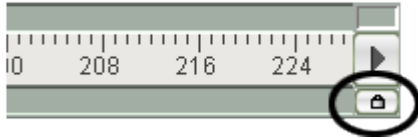
Page tabs are required for any printing in 3D. Without page tabs in a drill, the program would not know what you would like to print.

Creating a page tab is extremely simple, and can be done multiple ways.

Adding pages via the Count Track

On all editions of 3D, you can add page tabs by clicking directly on the [Count Track](#). You would first need to unlock the Count Track so it may be edited.

Click on the padlock at the bottom right of the Count Track.



The color of the Count Track will change. This indicates the Count Track is unlocked and page tabs can be added. Click anywhere in the yellow space below the count track to add a page tab.

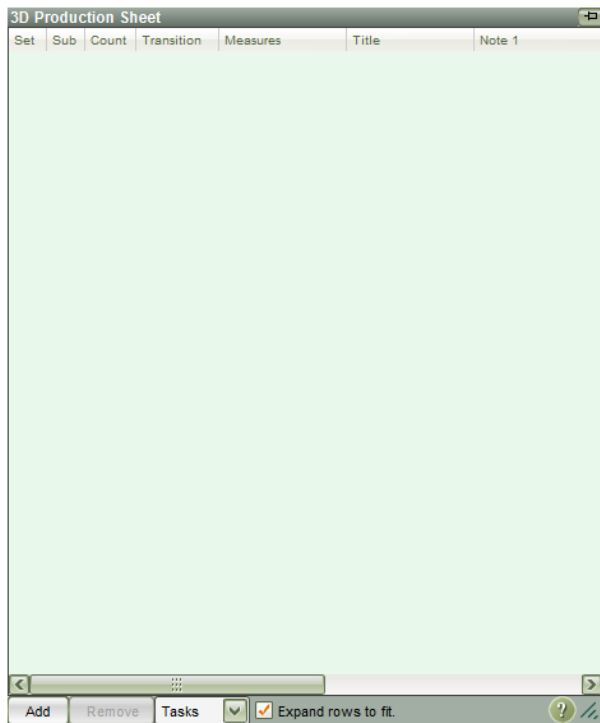


You can click and drag a page tab to any count on the Count Track while the count track is unlocked (editable).

Once you are done adding page tabs, lock the Count Track by clicking on the padlock once more to lock the Count Track from editing.

Adding pages via the Production Sheet

On Interactive and Professional editions of 3D, page tabs can be quickly added in the [Production Sheet](#). Pages that are added in the Production Sheet are applied automatically to the Count Track, and pages added to the Count Track will show up in the Production Sheet. Both the Production Sheet and Count Track update each other.



To add pages to the Production Sheet, simply click the “Add” button. A new window will appear, prompting to enter the count at which you wish to add a page tab.

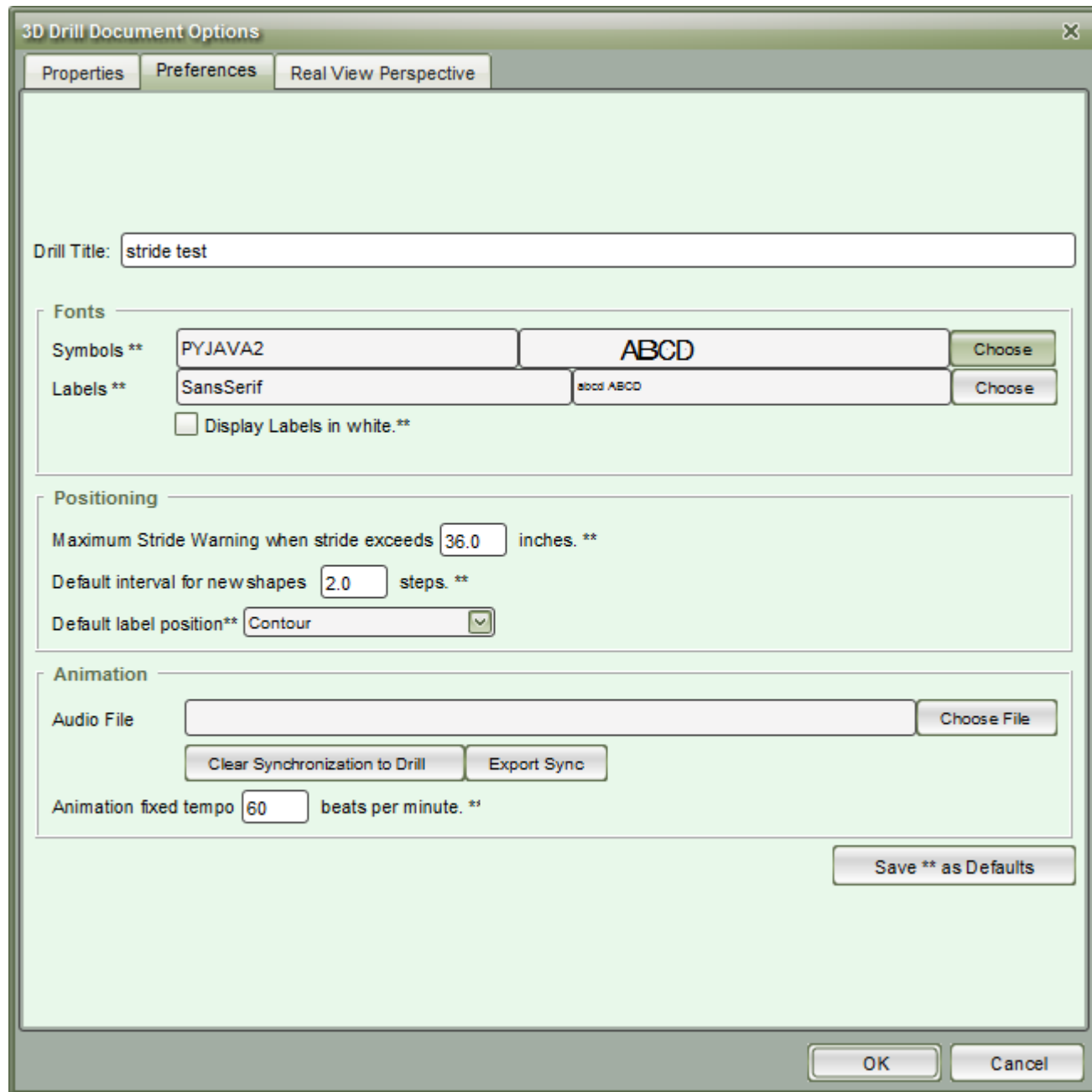
Dot Font

Dots for symbols are a great way to create beautiful, yet accurate drill charts. Since dots are symmetrical, many designers prefer to use a dot as a performer symbol as opposed to a standard letter based system.

In order to use dots as the performer’s symbols, you’ll need to load the Dot Font into your drill file.

Load the Dot Font

To begin, go to the [File menu](#) and select [Document Options](#). In Document Options, click on the **Preferences** tab. Select **Choose** for the Symbol Font.



The image shows a dialog box titled "3D Drill Document Options" with three tabs: "Properties", "Preferences", and "Real View Perspective". The "Preferences" tab is selected. Inside the dialog, there is a "Drill Title" field containing "stride test". Below this is a "Fonts" section with two rows: "Symbols **" and "Labels **". The "Symbols **" row has a text field containing "PYJAVA2", a preview box showing "ABCD", and a "Choose" button. The "Labels **" row has a text field containing "SansSerif", a preview box showing "abcd ABCD", and a "Choose" button. There is a checkbox labeled "Display Labels in white. **" which is currently unchecked. Below the fonts section is a "Positioning" section with three fields: "Maximum Stride Warning when stride exceeds" with a value of "36.0" and unit "inches. **", "Default interval for new shapes" with a value of "2.0" and unit "steps. **", and "Default label position**" with a dropdown menu set to "Contour". Below the positioning section is an "Animation" section with an "Audio File" field and a "Choose File" button, a "Clear Synchronization to Drill" button, an "Export Sync" button, and an "Animation fixed tempo" field with a value of "60" and unit "beats per minute. **". At the bottom right of the dialog is a "Save ** as Defaults" button. At the very bottom of the dialog are "OK" and "Cancel" buttons.

Select PYJAVA2 from the list, then apply the change by pressing **OK** in both windows.



3D uses PYJAVA2 as the default font for performer symbols. If PYJAVA2 is already listed as the symbol font, skip to the next step.

Assign the Dot as Performer Symbols

Once the Dot Font (PYJAVA2) is set as the font for performer symbols, you'll need to apply the appropriate symbol to each performer for the dot to display.

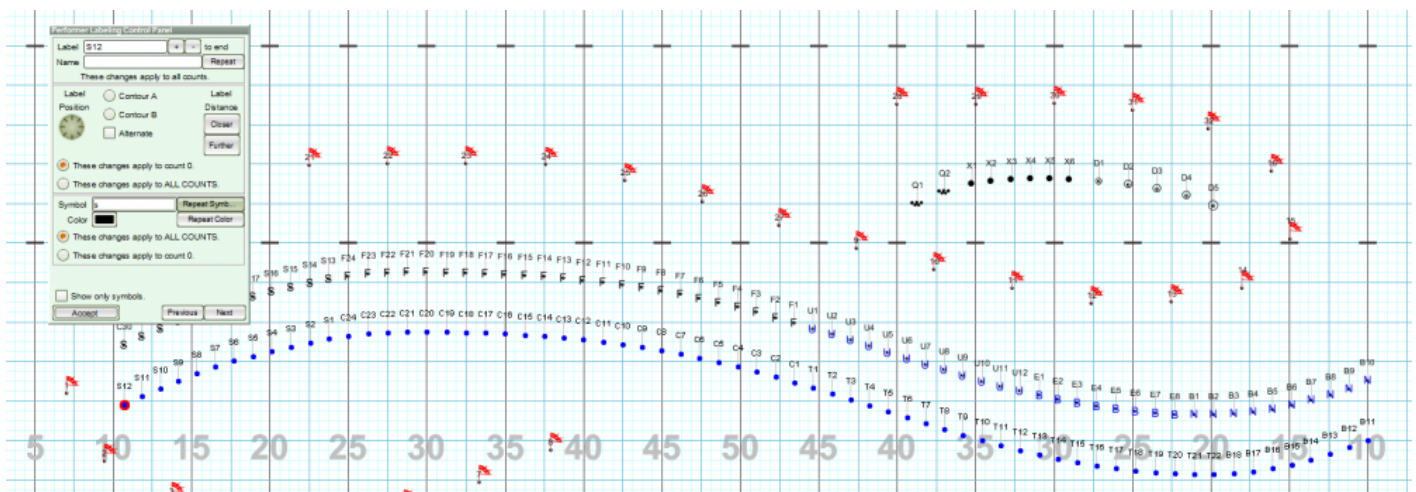
Many characters (the symbols and letters on your keyboard) are mapped to certain shapes and symbols in the Dot Font. For a reference guide, check out the [Dot Font Symbol Key](#).



The Dot Font Symbol Key is also found in the Reference menu inside 3D.

If we look at the Dot Font Symbol key, we'll notice that the dot symbol is assigned to the lowercase letter “s” (note: casing does matter!) key press. In the program, select the performers who's symbols you would like to change, then open the [Performer Labeling](#) tool.

In the Symbol text box, type a lowercase “s”. Be sure that the change is applying to ALL COUNTS in the drill. Press **Repeat Symbol** to apply the change to all selected performers, then **Accept** to commit the change.



Load a Custom Fabric File in 3D



We have many custom uniforms designed and available for FREE as a direct download from our site. Please visit www.pyware.com/fabricgallery/ to view the available uniforms.

To load a custom fabric file, such as a uniform, go the [File](#) menu and choose [Document Options](#). Click on the **Real View Perspective** tab.

3D Drill Document Options

Properties Preferences **Real View Perspective**

Performing Venue **

Venue: High School Stadium

Sky: Night

Ground: Choose

Surface: C:\Users\Mark\Documents\Pyware 3D\Surfaces\High School Football Surface.jpg Choose

A surface file replaces a field grid with an image of the performing area surface.

Selected Fabrics

☐ Let the end user use the Favorite Fabrics from their computer. Useful when writing for clients.

☒ Use fabrics from this table. *Fabric left blank will use the Favorites.* Favorites

Gear	Fabric			
Male Band Uniform 1		edit	delete	favorite
Male Band Uniform 2		edit	delete	favorite
Male Band Uniform 3		edit	delete	favorite
Male Guard Uniform 1		edit	delete	favorite
Male Guard Uniform 2		edit	delete	favorite
Male Guard Uniform 3		edit	delete	favorite
Female Band Uniform 1		edit	delete	favorite

Starting Visuals**

Uniform Style: Male Band Uniform 1

Hat Style: Shako No Plume 1

Equipment Group: None

Equipment Name:

March Style: Standard

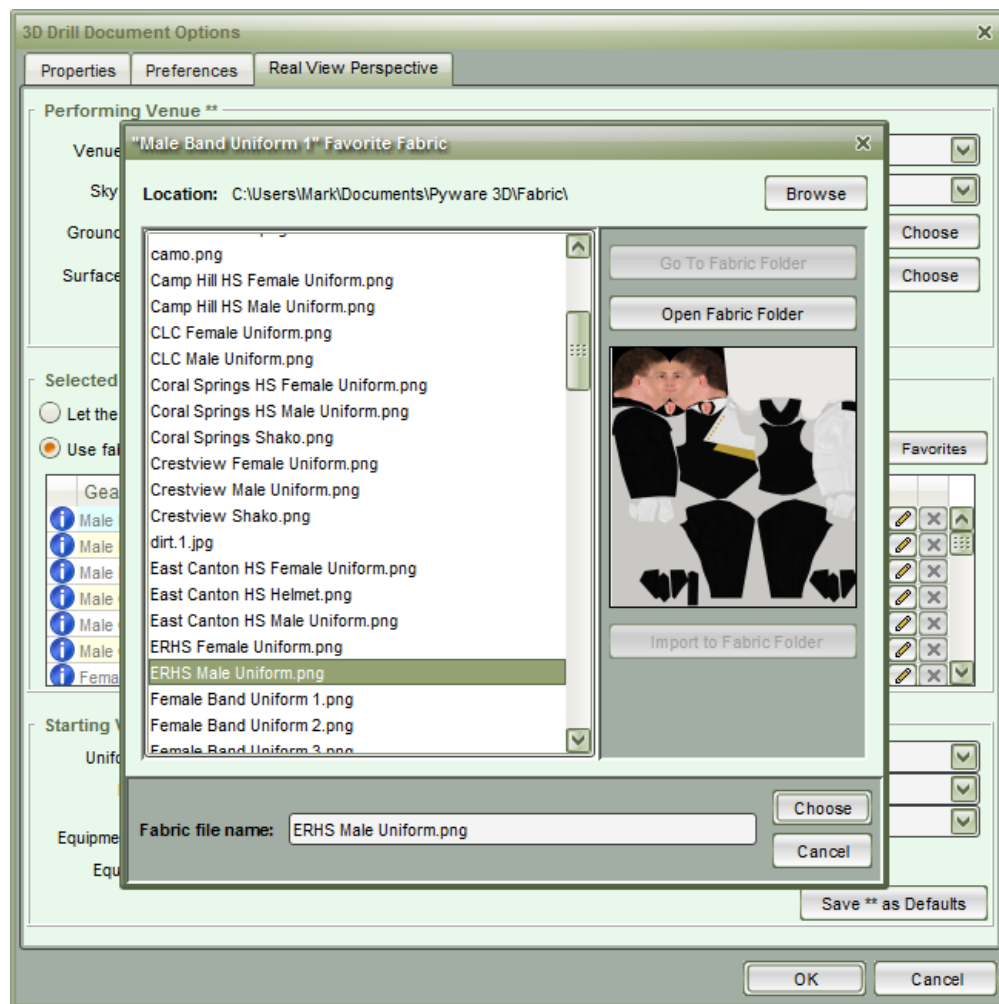
Hold Style: Hold

Facing: Fixed Angle

Save ** as Defaults

OK Cancel

Here you'll find a table with options for assigning any custom uniform or flag silks available. Click the **edit (pencil)** button for the uniform slot you would like to load the image into. Open the image (if necessary, click the **browse** button in the 3D window to locate the image file on your machine).



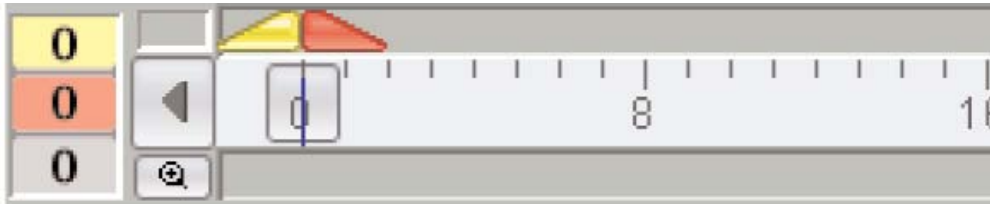
Repeat this step for the other gender uniform you saved, or any other fabrics you wish to load. Once all images are loaded, press **OK** in Document Options.

Once you have loaded the fabrics for use in 3D, be sure to assign the fabrics to the performers on the field.

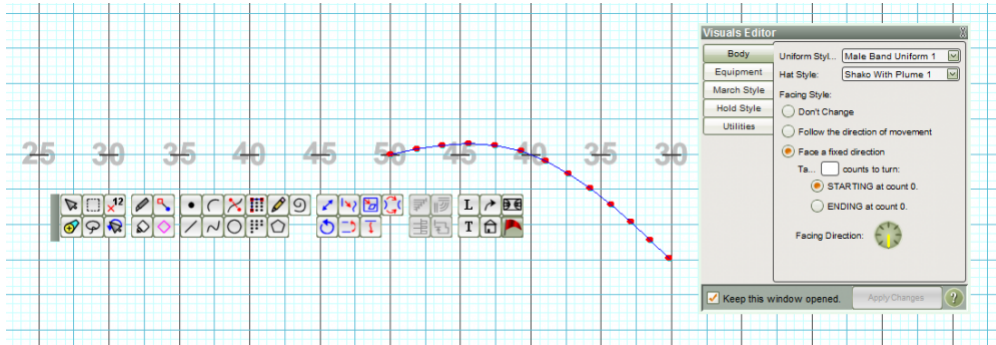
Assign Custom Fabrics to Performers on the Field

After any fabric has been loaded into the drill's [Document Options](#), you'll need to assign those uniforms to the performers in the drill.

To do so, put both your red and yellow anchors on the [Count Track](#) on count zero.



Select the individuals on the field that you wish to assign the uniform to. Open the [Visuals Editor](#) tool on your [Tool Palette](#).



On the Body tab, choose the uniform slot that you [loaded the custom uniform in to](#), then press **Apply**. You will then see the custom uniforms in the [Real View](#).

Modifiers and Specialty Keystroke List

Below is a list of special keystroke commands that are available in 3D.

Right Click Functionality

Default Tool – Right click on the design grid to select the Default tool. At the time of installation, the [Pointer Selection](#) tool is set as the Default tool.

Set Default Tool – Right click on a tool in the [Tool Palette](#) to set the Default tool. The Default tool is automatically selected once you accept any tool.

Double Click Functionality

Minimize/Restore Windows – Double clicking on the title bar of many windows, such as the [Perspective View](#), [Real View](#), [Production Sheet](#), and [Virtual Clinic](#), will minimize or restore the window.

Tool Palette Orientation – Double clicking on the gray bar to the left of the [Tool Palette](#) will switch the orientation of the Tool Palette from horizontal to vertical, or from vertical to horizontal.

Pointer Select Recent – Double clicking on the [Pointer Selection](#) tool will select the most recent selection.

Page Tab Options – Double clicking on a [page tab](#) will display the page tab options.

Modifier Key Combination Functionality

Selection Tools

Adding/Removing Performers in Selection – [SHIFT] + click or [SHIFT] + drag with any [Selection](#) tool will add or remove performers from the selection.

Drawing and Editing Tools

Move Relocation Handle – [SHIFT] + [ARROW KEY] while in a [Drawing](#) or [Editing](#) tool will move the relocation handle by one step in the direction of the arrow you pressed.

Rotate Relocation Handle – [CTRL] + [ARROW KEY] while in a [Drawing](#) or [Editing](#) tool will rotate the handle by 5 degrees in the direction of the arrow you pressed.

Tool Panel Relocation – [CTRL] + [ALT] + click with a tool panel open to move the tool panel to your mouse location.

Symbol Box – [ALT] + click in a symbol box of any [Drawing](#) or [Editing](#) tool will open a Symbol window. This window will show the actual symbols that will be displayed when using specialized 3D fonts.

Drawing Tool Interval Box – [ALT] + click in the Interval box of any [Drawing](#) tool will open the Mixed Interval window. This window allows the input of complex mixed intervals.

Performer Matching Selection – [ALT] + clicking on 2 performers that are stacked on top of each other will select the performer on the bottom.

Adding/Removing Editing Handles – [SHIFT] + click on an editing handle to remove it from the form. [SHIFT] + click on the form to add a handle to the form.

Count Track

Jump Anchors to Same Page Tab – [ALT] + click on a page tab to set both Red and Yellow Anchors on the same page tab.

Yellow Anchor to Previous Set – [CTRL] + click on a page tab will move the Yellow Anchor to the previous full page tab, skipping any sub sets.

Delete a Page Tab – [ALT] + click on a page tab when the [Count Track](#) is unlocked to delete the page tab.

Reset Count Track Zoom – [CTRL] + click on the [Count Track](#) Zoom button will reset the zoom of the Count Track to default.

Count Track Zoom – [SHIFT] + click on the [Count Track](#) Zoom button zooms the out from the Count Track.

Select a Range of Pages – [SHIFT] + click on page tabs, in the [Production Sheet](#), or in the [Virtual Clinic](#) windows will allow you to select a range of pages.

Animation Controls

Open Document Preferences – [ALT] + click on the Play button to open the Document Options' [Preferences](#) tab to assign a music file.

Clear Music Synchronization – [ALT] + click on the Speaker button in the [Animation Controls](#) to clear the music synchronization.

Field Display Window

Reset Zoom and/or Grid Shift – [ALT] + click on the Zoom or Grid Shift tool the settings for these tools will be reset to default.

Zoom Out From Grid – [CTRL] + click with the Zoom tool enabled will zoom out from the design area.

Classic Perspective View

Reset Perspective View Tools – [ALT] + clicking on the Tilt, Shift, or Zoom buttons will reset the perspective view to default.

Print Outside of Performance Area

If your show calls for performers to travel beyond the boundaries of the performance area (for example, outside of the sidelines, or into the endzone of a football field), you'll definitely want the ability to print drill charts that show the positions for those performers for your reference.

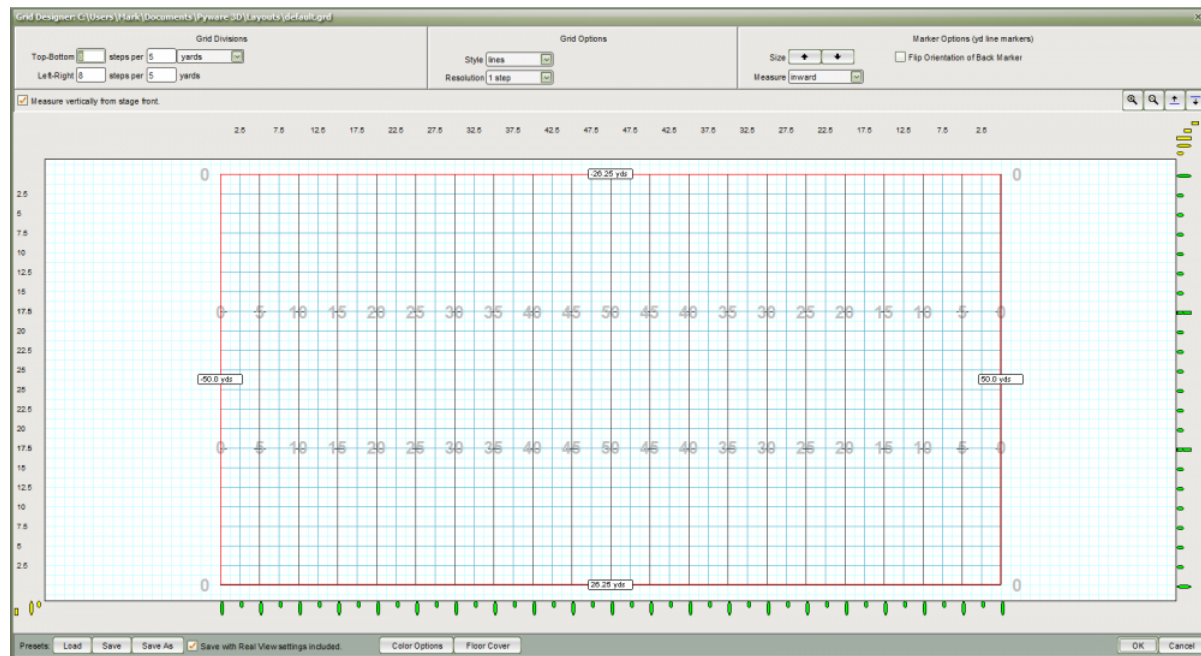
By default, 3D only prints inside the red bounding box for your drill's performance area that is specified in the [Grid Designer](#). You can print beyond the bounding box by doing either of the following:

Load a Preset Grid

3D comes packed with various grid templates for your disposal. In the [Grid Designer](#), click **Load** for the preset grids. This will open a file explorer, allowing you to select which grid template to load. There are templates with appropriate markings for each football field, all with extra room at the sides and ends of the field. Select the grid that would be appropriate for you, then press **OK** to commit the change in the Grid Designer.

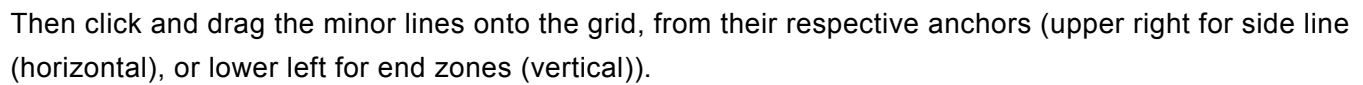
Add Minor Division Lines to the Grid

If you have customized the grid for you drill, the 1st option would probably not be in your best interest, as you would be loading a template and replacing any revisions you made to the grid. To keep your current grid style intact while still accommodating for printing beyond the boundaries of the performance area, we'll need to add a few minor (sub) division lines to the grid. To do so, open the [Grid Designer](#) from the [Utilities](#) menu.

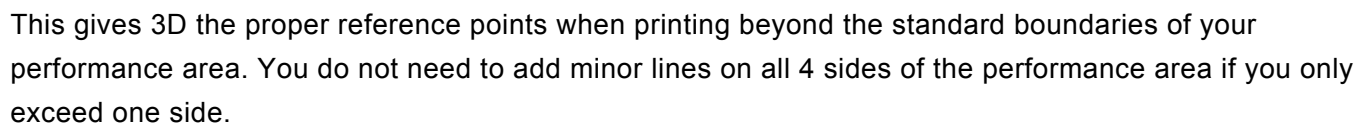


The grid designer is zoomed in to the performance area to make it as large as possible. Because of this, you'll most likely want to zoom out (away) from the performance area, so you can see precisely where on the grid you'll be adding additional lines.

To do so, click the zoom out button until you have adequate space to add your division lines.



For example, if you need to print 4 steps outside the front side line, you'll want to add minor lines 2.5yds outside of both side lines. See the picture below for reference.



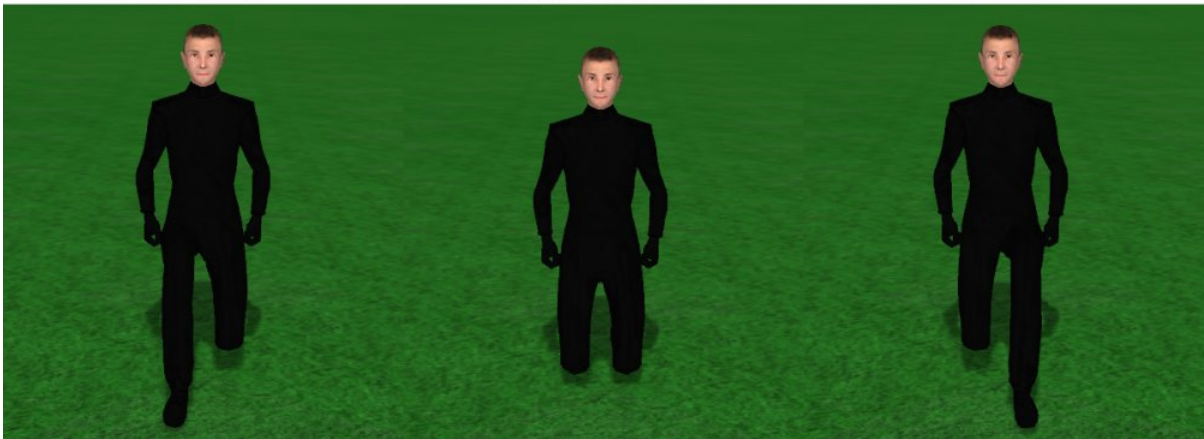
Below is a quick reference for both Upper and Lower Body poses that can be applied to performers when using the Real View. These poses are applied to performers with the [Visuals Editor](#) tool.

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Kneel Left

Kneel Both Knees

Kneel Right

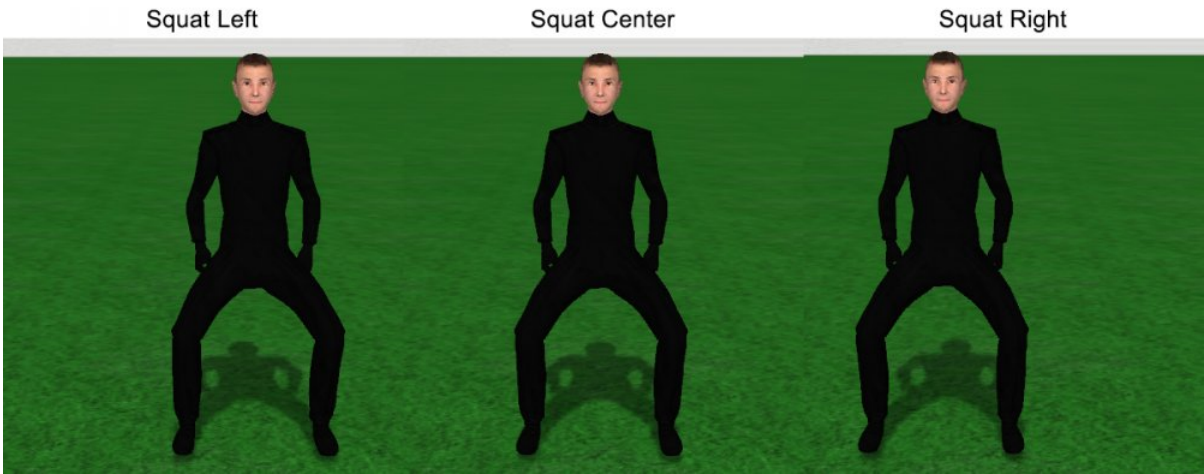


Open 2nd Right

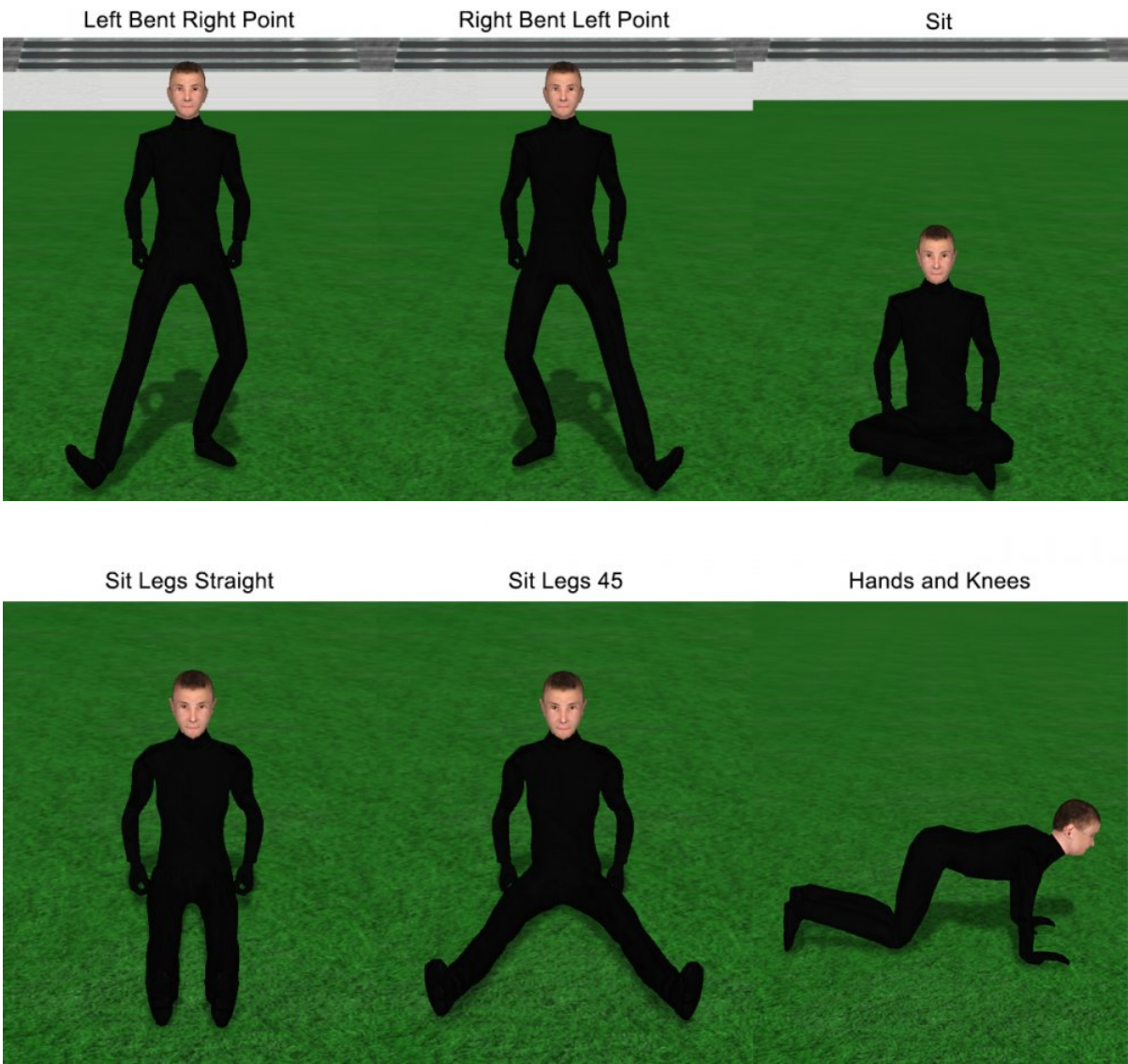
Open 2nd Center

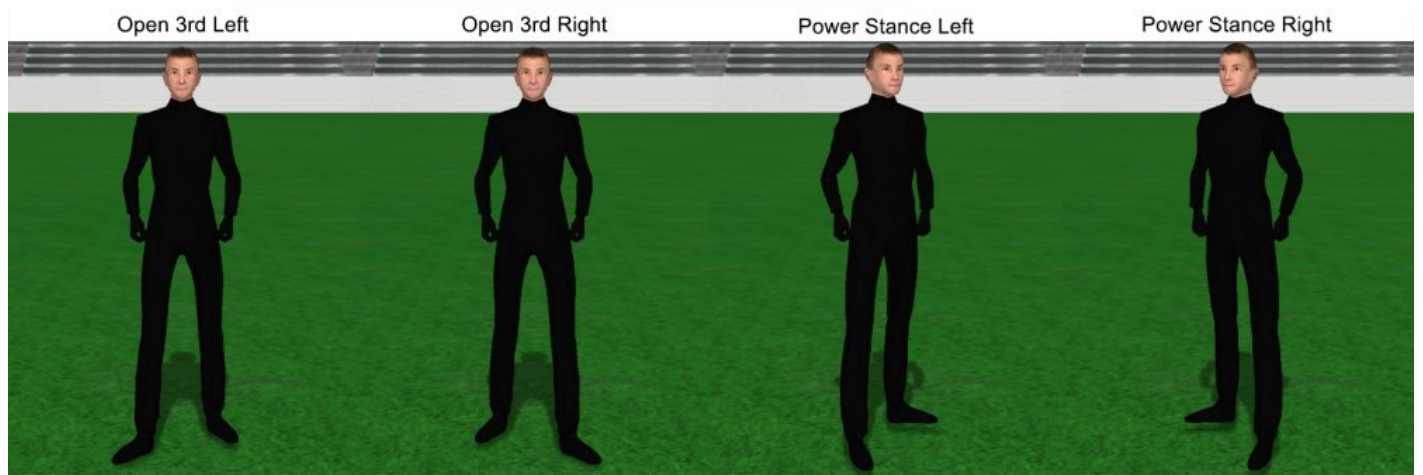
Open 2nd Left





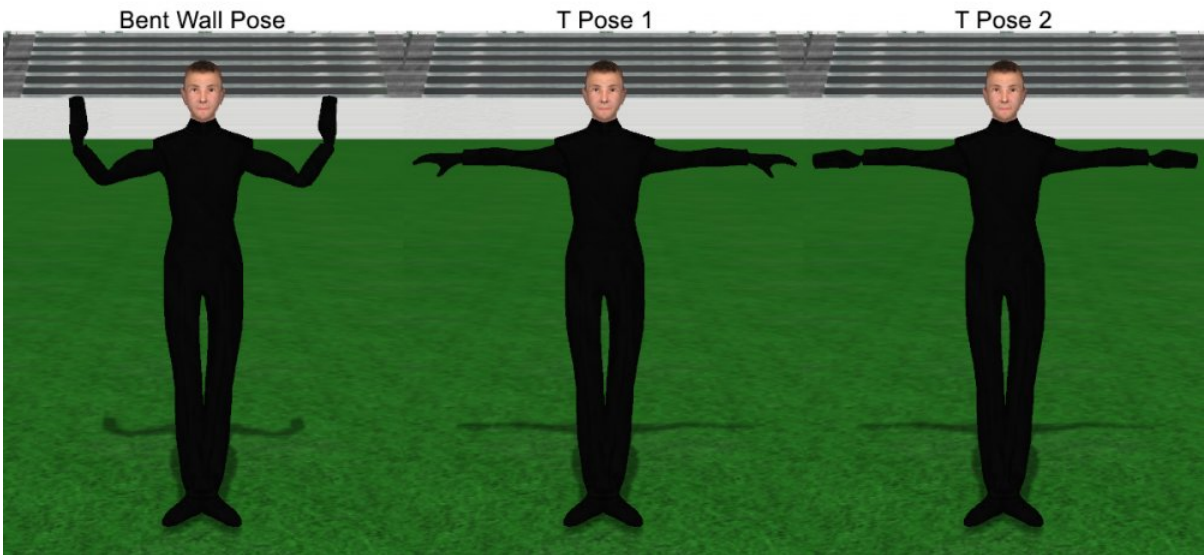






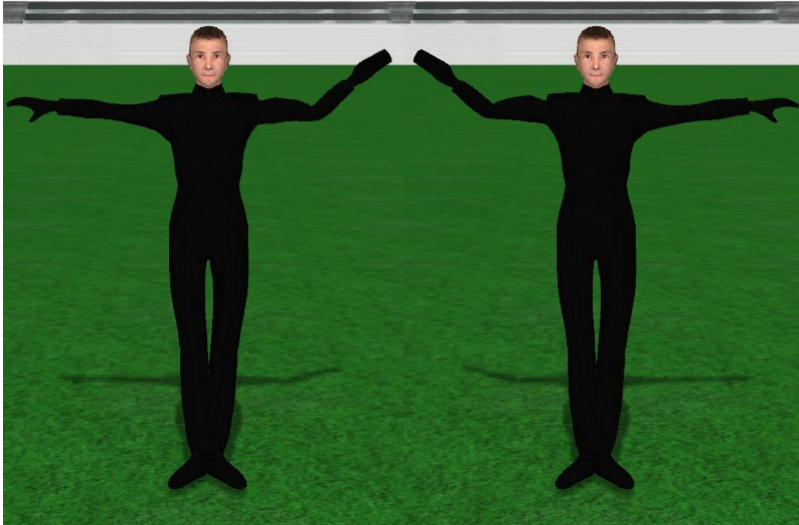
Upper Body





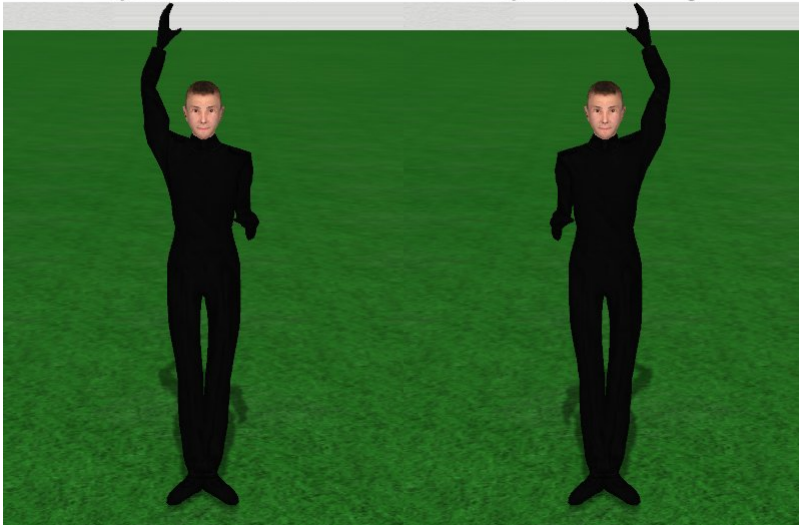
Layered Pose 1 Left

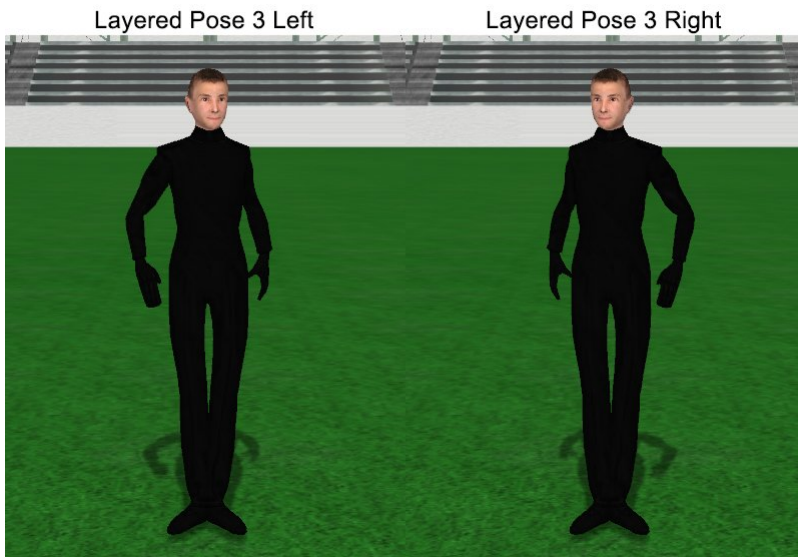
Layered Pose 1 Right



Layered Pose 2 Left

Layered Pose 2 Right

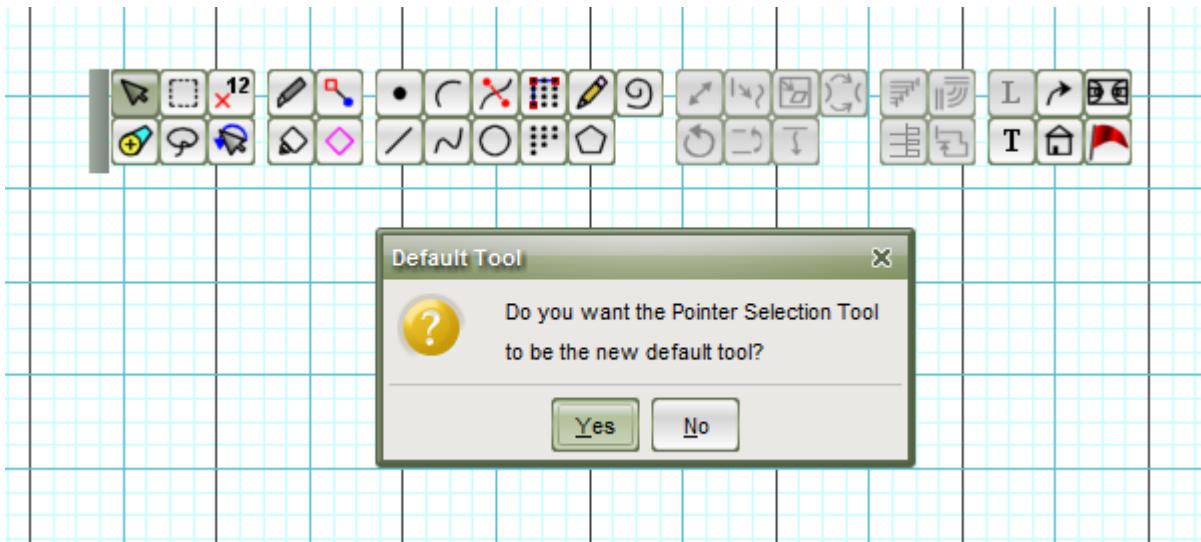




Reset Default Tool

Is a tool opening up every time you close out of a control panel? Here's an easy way to fix it.

On your [Tool Palette](#), right click on the [Pointer](#) selection tool. A new window will appear.



Selecting **Yes** in this window will reset the Default tool to the Pointer selection tool.

What's the Default Tool?

The Default tool is the tool that 3D always “defaults” to when you exit another tool. When you install 3D, the Default tool is set to the Pointer selection, as it is the most commonly used tool on the Tool Palette.

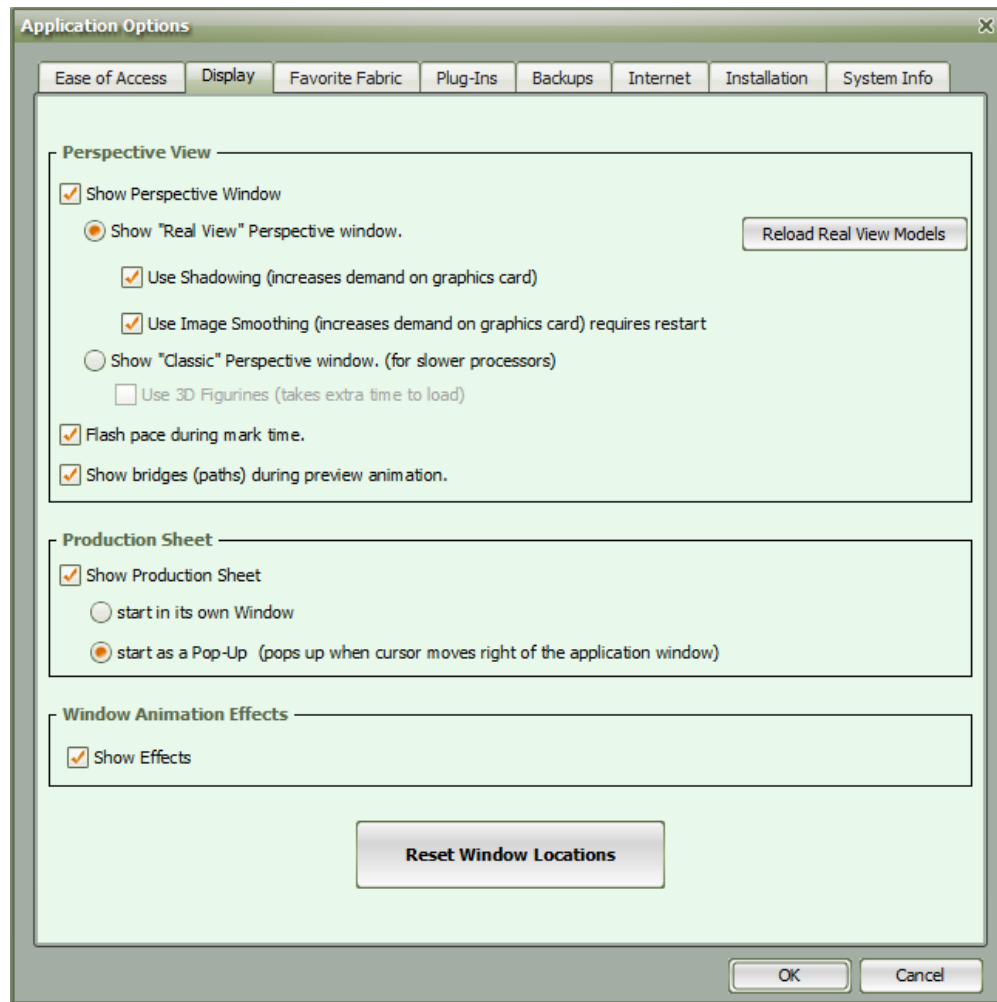
What Caused My Program to Do That?

We introduced the ability to bind a shortcut to a “right click” function back on version 6 of 3D. In the default set of shortcuts, a right click will open the default tool. If you accidentally right clicked on another tool on the Tool Palette, this would change the binding of the default tool to whichever tool you right clicked. This can happen accidentally, especially on laptops when you’re using a track pad as opposed to an external mouse as track pads can be quite sensitive to touch.

Reset Window Locations

If any window in the program appears off screen, you can easily reset the location of all windows in 3D to their default positions. To do so, follow the steps below:

- Go to the [File menu](#) and choose [Application Options](#)
- Click on the Display tab
- Select the big **Reset Window Locations** button at the bottom of the window
- Press **OK** to apply the change



Symbols Not Printing

Are your drill charts printing without symbols (meaning you see labels only, no performers)? The majority of the time this is caused by the symbol font not being properly installed on your computer. This can occur if the program was installed as a non-administrator on the computer. Fortunately, this can be corrected by simply installing the necessary fonts into your computer's Fonts folder.

Instructions for Windows

- Go to **Computer > C: > Program Files > Pyware 3D > lib > factory > forAppDataLib > fonts**
- Copy the "PYJAVA2.ttf" and "pyview.ttf" files onto your desktop
- Go to **Control Panel > Appearance and Personalization > Fonts**
- Move the copied fonts on your desktop into the Fonts folder
- Once both fonts are installed, restart your machine to complete the process

After you have restarted your computer, open 3D again and attempt to print your drill. You will now see both symbols and labels on the drill charts.



The Pyware 3D file might be in Program Files (x86), depending on if you are running the 32-bit or 64-bit version of Pyware.

Instructions for Macintosh

- Go to **Applications > Pyware 3D > lib > factory > forAppDataLib > fonts**
- Copy the “PYJAVA2.ttf” and “pyview.ttf” files onto your desktop
- Go to **Applications > Font Book**
- Move the copied fonts on your desktop into the Font Book
- Once both fonts are installed, restart your machine to complete the process

After you have restarted your computer, open 3D again and attempt to print your drill. You will now see both symbols and labels on the drill charts.

Upload a Drill to the Online File Manager

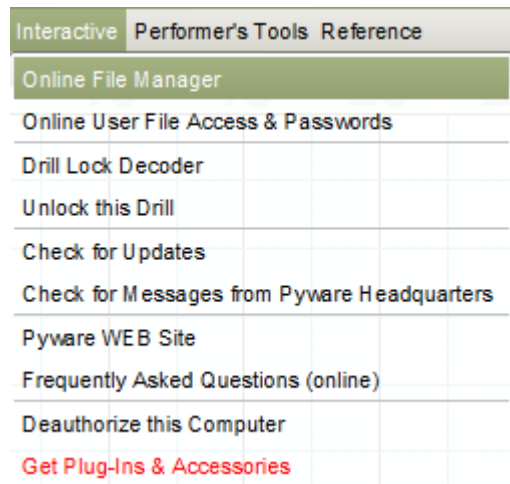
The Online File Manager is a fantastic way to easily share drill files with any associates, clients, or students you may need to see the drill. Think of it as cloud storage with the ability to easily share these files with anyone that has either a license of 3D, a Director's Viewer, or the Performer's Practice Tools (student viewer).



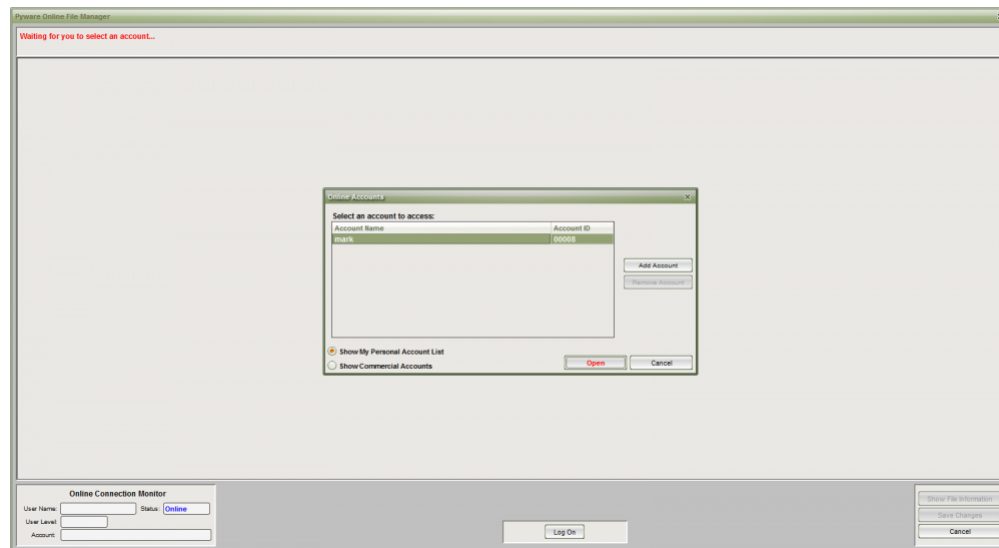
The Online File Manager is only available on the Interactive and Professional editions of 3D.

Uploading a File to the Online File Manager

In the Interactive menu, choose Online File Manager.



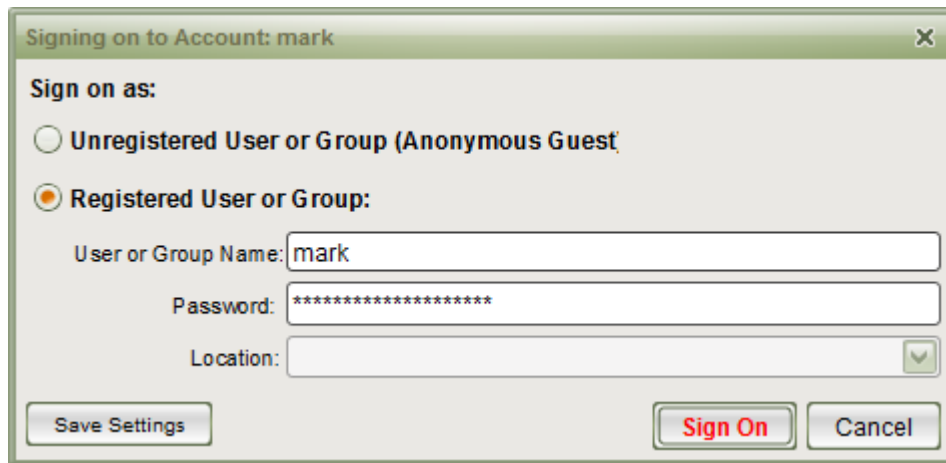
The Online File Manager will open.



You will see your account listed, as it's tied to your installation of 3D. Select your account in the list and choose **Open**.

You'll then be prompted to sign in to the account.

Only the administrator of the online account can upload drill files. The administrator name and password was included in your email at the time of purchase. Choose to sign in as a **Registered User or Group**, enter your administrator name and password, then choose **Sign On**.



Signing on to Account: mark


Sign on as:

☐ Unregistered User or Group (Anonymous Guest)

☒ Registered User or Group:

User or Group Name:

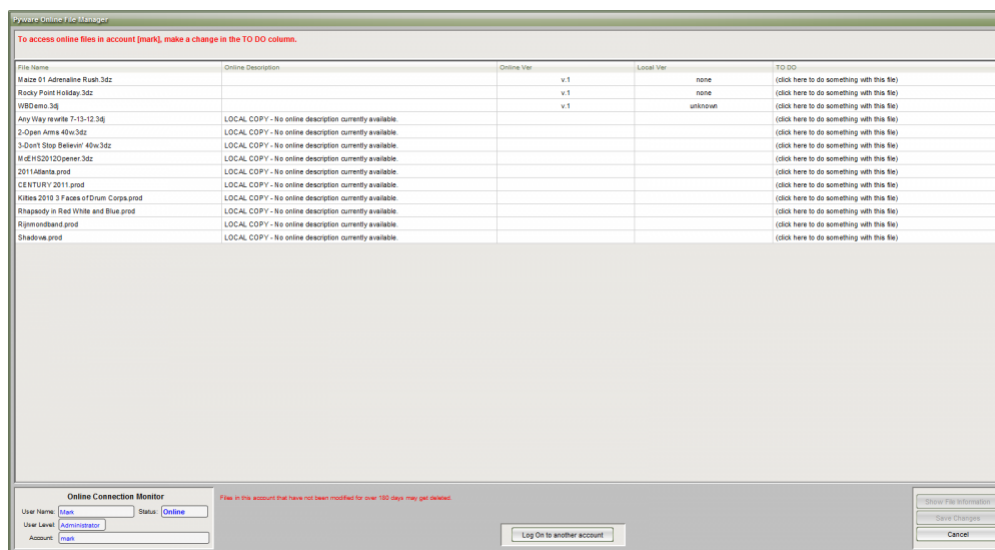
Password:

Location: 

Once you have signed on to the Online File Manager, the main work area will appear. You could potentially see multiple drills in this window, however they'll only be in 1 of 2 locations: either in your Documents\Pyware 3D\Drills folder, or uploaded in the online account.



The only location you can upload a drill from is your Documents\Pyware 3D\Drills folder. If you have the drill saved elsewhere on your machine, you would need to save the drill inside your Drills directory in order for the Online File Manager to “see” the drill to upload.



Pyware Online File Manager

To access online files in account [mark], make a change in the TO DO column.

File Name	Online Description	Online Ver	Local Ver	TO DO
Waze 51 Adrenaline Rush 3dz		v.1	none	(click here to do something with this file)
Rocky Point Holiday 3dz		v.1	none	(click here to do something with this file)
WBDemo 3dz		v.1	unknown	(click here to do something with this file)
Any Way rewrite 7-13-12 3dz	LOCAL COPY - No online description currently available.			(click here to do something with this file)
2-Open Arms 40w 3dz	LOCAL COPY - No online description currently available.			(click here to do something with this file)
3-Quint Stop Believer 40w 3dz	LOCAL COPY - No online description currently available.			(click here to do something with this file)
WdHSD120Pener 3dz	LOCAL COPY - No online description currently available.			(click here to do something with this file)
2011Atlanta.prod	LOCAL COPY - No online description currently available.			(click here to do something with this file)
CENTURY 2011.prod	LOCAL COPY - No online description currently available.			(click here to do something with this file)
Killer 2010 3 Faces of Drum Corps.prod	LOCAL COPY - No online description currently available.			(click here to do something with this file)
Whispery in Red Wine and Blue.prod	LOCAL COPY - No online description currently available.			(click here to do something with this file)
Ripensandland.prod	LOCAL COPY - No online description currently available.			(click here to do something with this file)
Shadowe.prod	LOCAL COPY - No online description currently available.			(click here to do something with this file)

Online Connection Monitor

User Name: Status:

User Level:

Account:

Please note: files in this account that have not been modified for over 180 days may get deleted.

The main layout looks very similar to a spreadsheet. On the far right side, you'll see a TO DO column. Click in the TO DO column for a drill you wish to upload and choose **send a file copy to the internet account**. A new window will appear, asking for a description of the file.

Send a file copy to the online account.

This is the first time the requested file will be uploaded. Enter a file description that will appear to users who may be downloading the file.

File Name:

Description:

☐ Keep Checked Out In order to edit a file it must be checked out. While the file is checked out, it cannot be checked out by anyone else.

The following Users (or Groups) are registered guests in this account. Select which guests you want to be able to see this file.

Visible	Registered User (or Group)	Details
<input type="checkbox"/>	Anonymous Guest	

The description is required so anyone accessing your Online File Manager will know what they are downloading and/or if the files have been revised recently. Once the description is input, press **Send to Online Account**. At this point, you can repeat the process for any other drills you would like to upload. When you're ready to send the drill(s) to the online account, press **Save Changes**. This will begin the upload process.

View Drills on iOS



[Download on the App Store](#)



[Get it on Google Play](#)

The following is a step by step guide on how to view a drill on your iOS device.

If you need to upload a drill to share, start with step 1. If you were provided a QR Code for a drill, skip to step 6.

1. Save As Mobile App File

To view any drill file on iOS, you'll need a mobile compatible drill file. These drill files have a ".3da" extension, so the file might look like *filename.3da*. If you don't have a .3da file type, be sure to read up on how to save a .3da on the [Save As App File](#) page.

Note: "Save As App File" was introduced on version 8. You'll need at least version 8 to save a drill in the app file format.

2. Upload the File to Cloud Storage

Once you have a .3da file, you'll then need to upload the file to a cloud storage service. Any service that provides a **download** link for your files will work. We recommend using Dropbox due to its popularity and simplicity.

3. Copy the Mobile App File URL

After you have uploaded the file to your cloud storage service, copy the "sharing" link for the file.

4. Generate a QR Code

The easiest way to share drill files that are stored in the cloud are with 3D's [Print QR Code](#) feature. Within this feature, you can quickly generate a QR Code for any mobile app file, which can then be scanned by the Pyware 3D Viewer and imported into the app instantly.

To create a QR Code, open 3D and go to [File](#), then [Print QR Code](#). In this new window, you'll want to enter a name for the QR Code in the Drill Title box, then paste the URL you copied earlier in the Drill URL box.

5. Change URL to a Download Link

We'll need to slightly alter the mobile file's "share" link so it will properly load into the app. Instead of using the file's "share" link, we'll need to change it to a "download" link.

Using our Dropbox example, you can easily change the **share** link to a **download** link. Let's say that when we click **Share** for our .3da file in dropbox, it provides us the following link:

<http://www.dropbox.com/s/qvoc234ha5k/sample.3da>

To change the **share** link to a **download** link, we need to switch the **www** to a **dl** in the URL. So the original share links reads:

<http://www.dropbox.com/s/qvoc234ha5k/sample.3da>

but after editing, will now look like:

<http://dl.dropbox.com/s/qvoc234ha5k/sample.3da>

Notice the only change was swapping **www** for **dl**. This changes the link to begin a download of the file when you go to that address, which is what our mobile app requires. Be sure to alter the link before creating the QR Code.

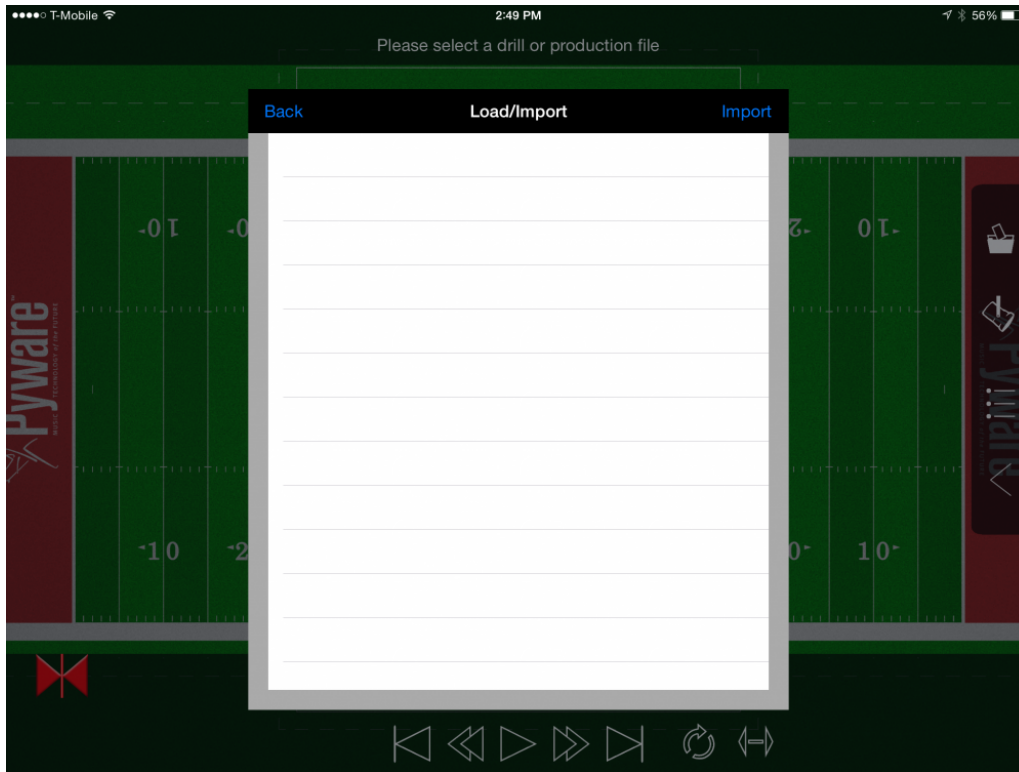
Once you have changed the Drill URL, press **Save as PDF** to create a PDF file of the QR Code, or **Print/Preview** to print a hard copy.



Once you have created a QR Code for the mobile app file, that link will never change. You can distribute the QR Code to performers, clients, or associates so they may download the app on to their own respective devices.

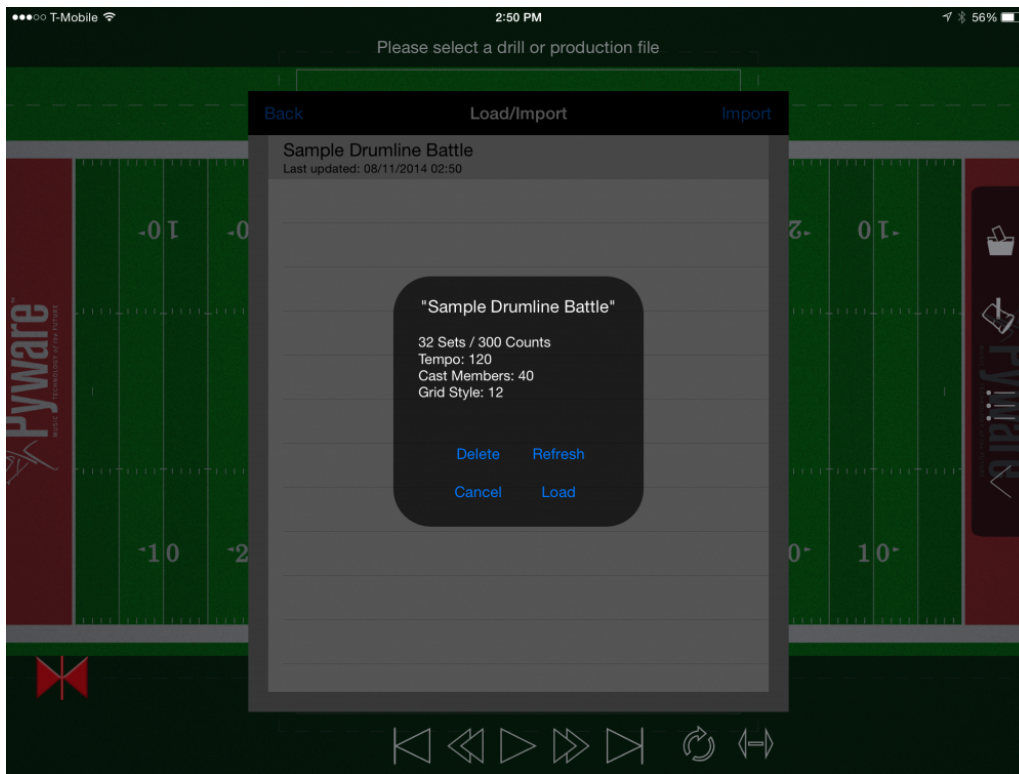
6. Opening the Drill in iOS

Tap the **Open** button in the app. The Load/Import window will appear.



Tap **Import** in the Load/Import window. Select **QR Code** to start your device's camera to scan in the QR Code. Point the device's camera at the drill's QR Code. The file will begin to download.

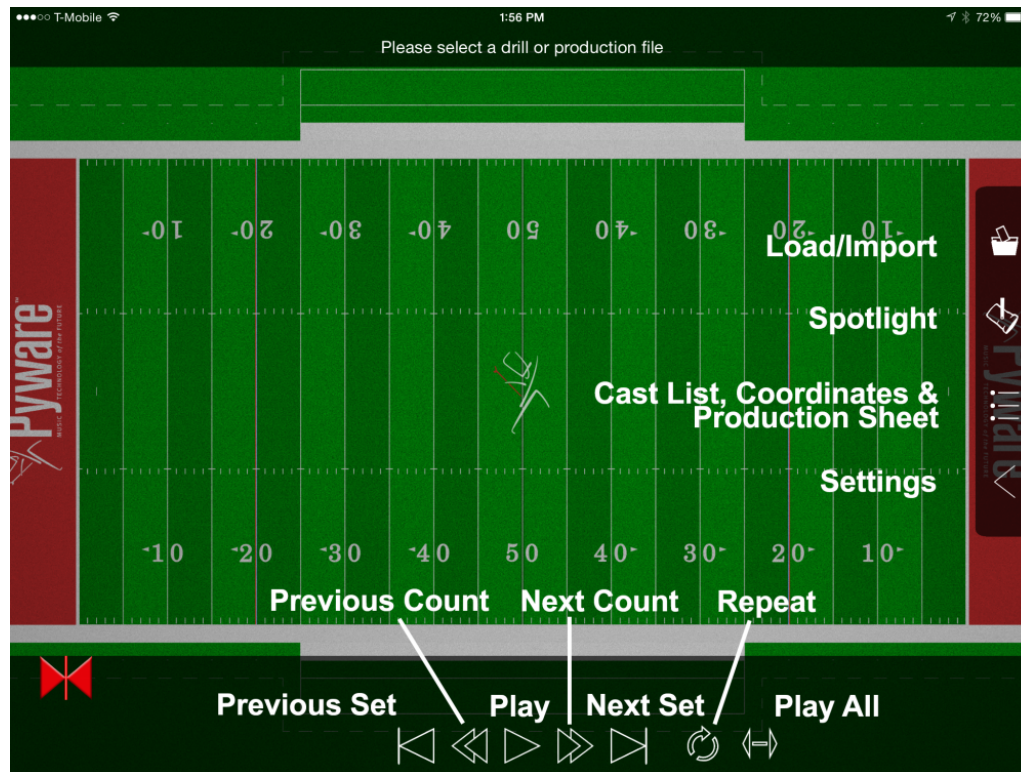
Once the download is complete, you'll then see the drill in the list of available files to open. Tap the file, then press **Load**.



Click [here](#) for an overview of the 3D Viewer app interface.

iOS App Overview

Below is an overview of the 3D Viewer app layout.



Load/Import

Load/Import opens the Load/Import window, where you can open drills, import them into the app (from an online storage service), or refresh a drill to retrieve the current copy from the online storage service. See [Viewing Drills on iOS](#) for instructions on how to open a mobile drill file.

Spotlight

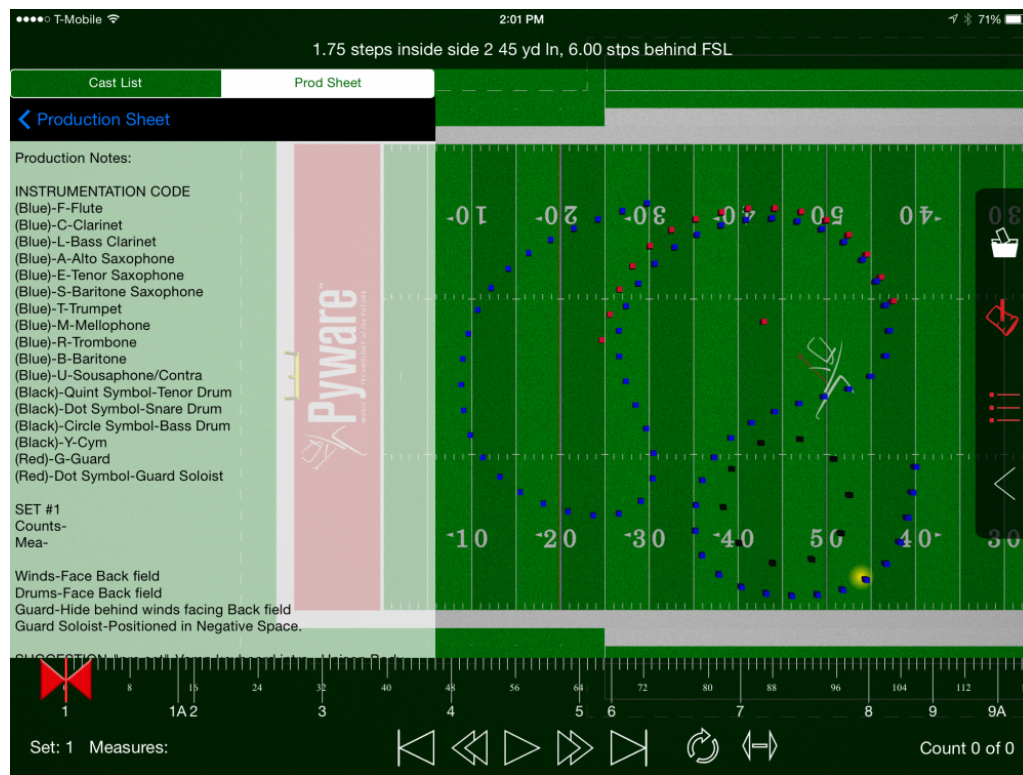
When tapped, **Spotlight** will spotlight a performer on the field. You can change the currently spotlighted performer by tapping on the performer you wish to spotlight. To stop spotlighting a performer, tap the Spotlight button again.



Spotlighting a performer will show the performer's detailed coordinate instructions at the top of the screen.

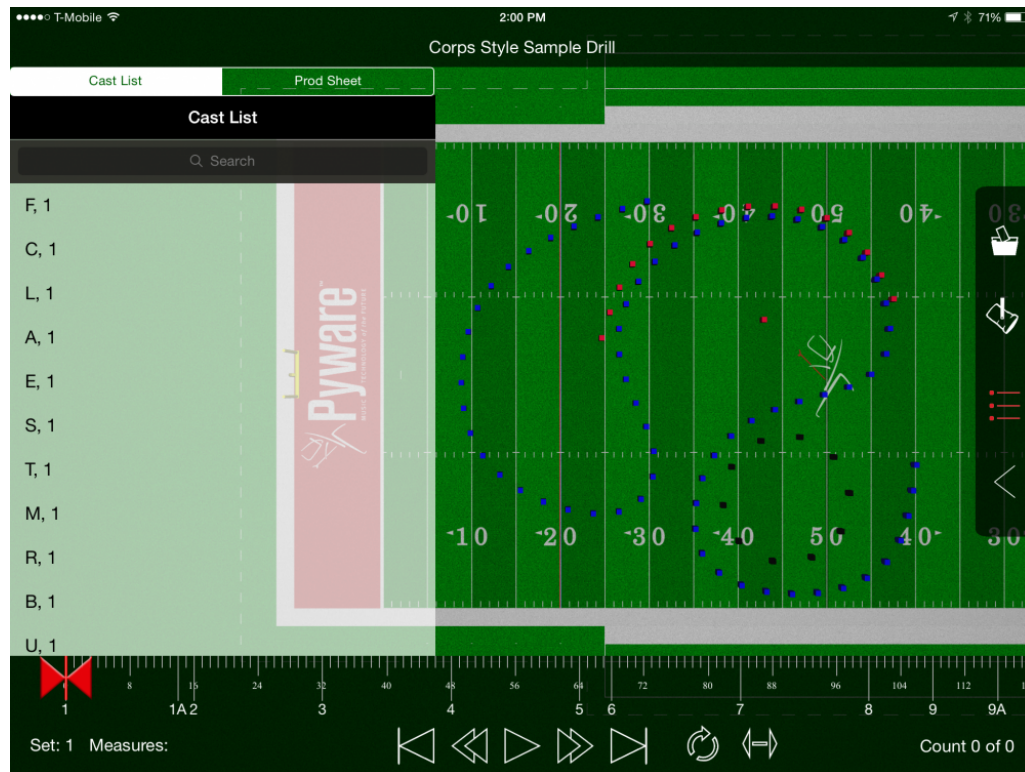
Cast List, Coordinates & Production Sheet

The **Cast List, Coordinates & Production Sheet** button will display the drill's [Production Sheet](#) when tapped.



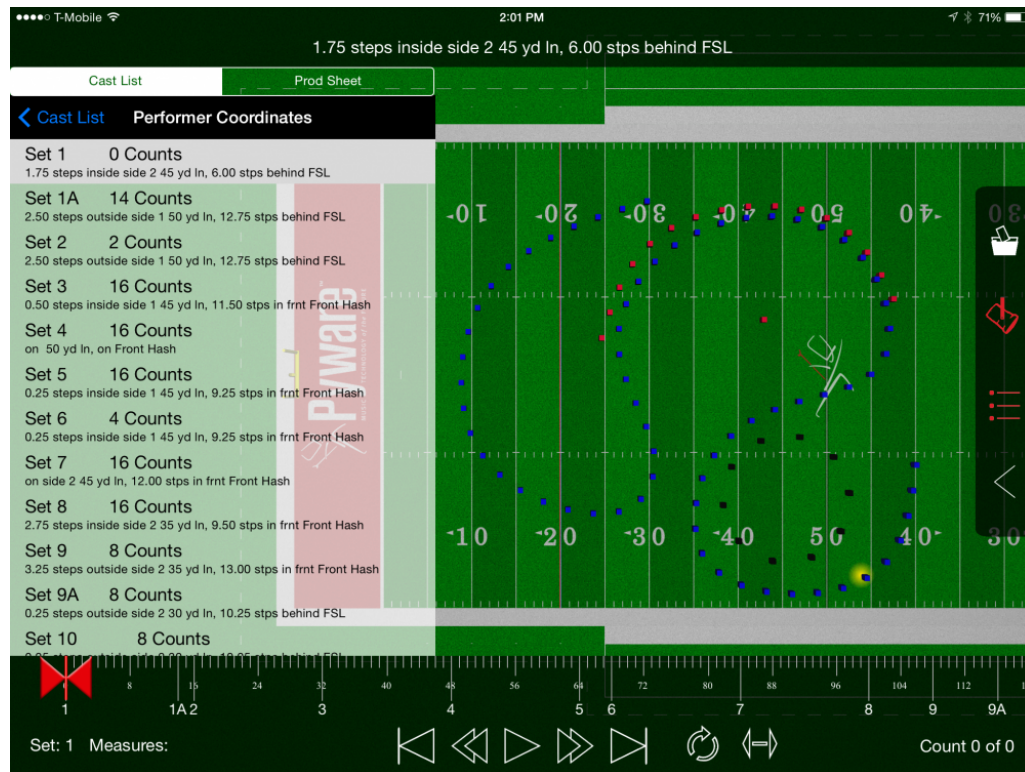
Tapping a set in the **Production Sheet** list will display that set's Production Sheet and Text Box notes (if applicable). The anchors on your Timeline will jump to the appropriate count range for the transition, and display the set you selected on the screen.

To access the **Cast List**, tap the Cast List tab in the Cast List/Production Sheet window. A list of every performer in the drill will display. Performers in the Cast List are sorted by Performer Label.



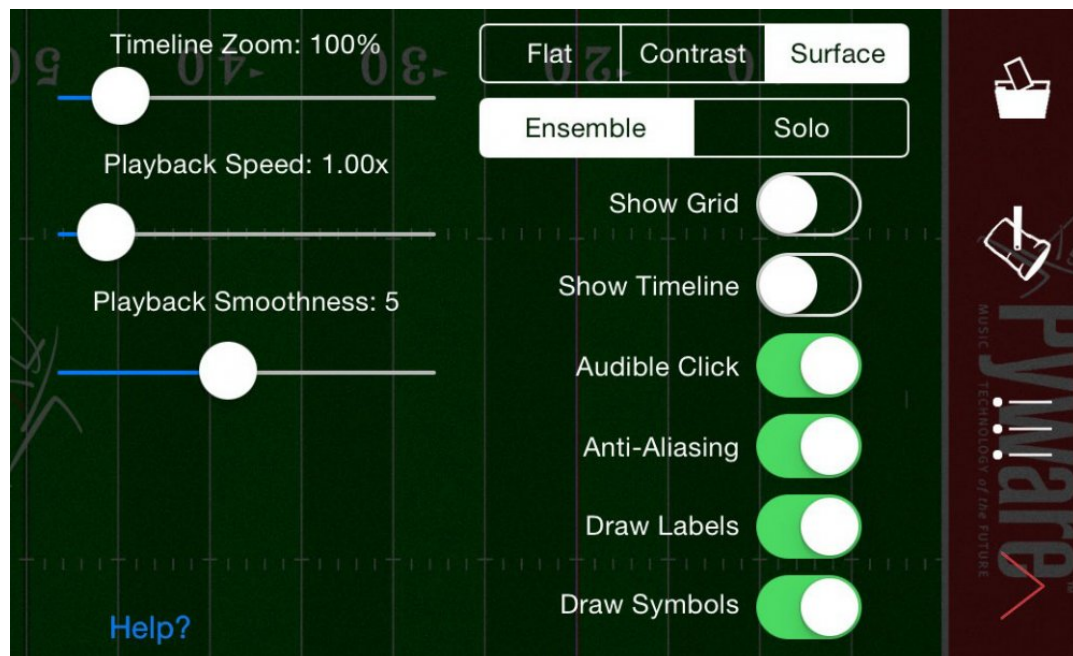
To search the Cast List for a certain performer, pull down the top of the Cast List. A search box will appear.

Tapping a performer in the Cast List will display that performer's coordinates for the drill. Tapping a set in the **Performer Coordinate** window will jump the anchors on your Timeline to the appropriate count range for the transition.



Settings

When tapped, the **Settings** panel will slide open. Here you'll find the following options:



Sliders

- Timeline Zoom increases or decreases the viewable range of counts on the timeline.
- Playback Speed increases or decreases the drill's playback animation speed when animating. The higher the number, the faster the drill will animate.
- Playback Smoothness changes the fluidity of the drill animation. Decreasing the Playback Smoothness will make the drill animate in a more step-time fashion, whereas increasing the Playback Smoothness will make the drill animate more fluidly.

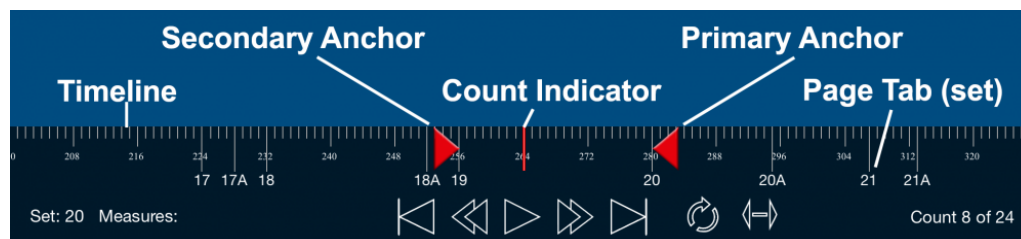
View Modes

- Flat will change the ground to a single, flat color.
- Contrast is a high contrast mode for viewing in poor light conditions. All performers, markers, division lines and step grid are black. The ground is white.
- Surface loads a realistic surface for the drill. For example, drills on a football field will show a football field with turf and appropriate markings, whereas indoor drills will show a hardwood gymnasium floor.
- Ensemble displays every performer in the drill.
- Solo displays the currently selected performer. You can select a different performer by tapping the performer in the **Cast List**.

Switches

- Show Grid displays a 1-step grid for the performance area.
- Show Timeline displays the Timeline.
- Audible Click plays a click for every count in the drill, much like a metronome.
- MSAA stands for Multi-Sampling / Anti-Aliasing. Turning on this option will make performer models and text have crisper, cleaner edges.
- Draw Labels will display the performer labels (when zoomed in enough to see them).
- Draw Symbols will display the performer symbols (when zoomed in enough to see them).

Timeline



The 3D Viewer Timeline acts very similar to Pyware 3D's [Count Track](#). The row of ticks at the top of Timeline is every count in the drill. These counts are subdivided every 8 counts for ease of use when navigating the Timeline.

Page Tabs are displayed as the longest ticks on the Timeline. The Page Tab (or set) number is read from the 3D drill file, so both sets and sub-sets will be accurately numbered. You can tap a Page Tab to jump your anchors on the Timeline to that transition.

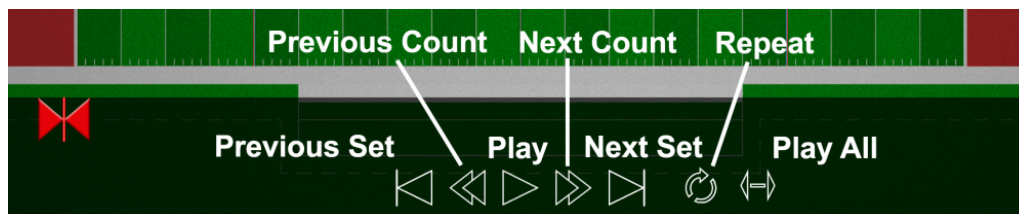
The **Secondary Anchor** is where animation will begin. When you select a set to play, the Secondary Anchor will typically start at the previous set. This anchor can be tapped and dragged to any count in the drill.

The **Count Indicator** indicates which count of the drill you see. The indicator can be tapped and dragged across the Timeline to preview any count of drill.

The **Primary Anchor** is where animation will end. When you select a set to play, the Primary Anchor will typically be the set you selected. This anchor can be tapped and dragged to any count in the drill.

Animation Controls

Our 3D Viewer app features many of the commonly used animation controls found in Pyware 3D. They are as follows:



- Previous Set will jump your Primary and Secondary anchors to the previous set's transition. The Count Indicator will jump to the set previous to the set it was currently on.
- Previous Count will move your Count Indicator back one count per tap on the button.
- Play will animate the drill from the Secondary Anchor's location to the Primary Anchor's location.
- Next Count will move your Count Indicator forward one count per tap on the button.
- Next Set will jump your Primary and Secondary anchors to the next set's transition. The Count Indicator will jump to the set after the set it was currently on.
- Repeat will repeat the played animation.
- Play All will disregard the Primary and Secondary anchor's location on the Timeline and play the drill animation from the first to last count of drill.

Gestures

Center View – Double tap anywhere on the screen to realign and center your field of view of the performance area.

Rotate View – Twist with two fingers to rotate the view.

Tilt View – Drag with two fingers up or down.

Zoom In/out – Pinch with two fingers to zoom in. Spread with two fingers to zoom out.

Move Performance Area – Drag with one finger in any direction.

Show/Hide Timeline – Triple tap to hide the Timeline. Triple tap again to show a hidden Timeline.