

It's Going to Be All Write

An AMVer's Guide to the Pen Tool

Although much misunderstood and maligned, the pen tool is really an AMV editor's best friend. Once its proper use and functions are learned, it should become the method of choice for making selections, tracing objects and creating masks or graphic elements.

Some familiarity with graphics programs is assumed for this guide, but even beginners should find the instructions easy to follow. Please note that the tutorial is based on Adobe Photoshop CS2. While the pen tool is consistently used for the same purpose across many other applications, its controls do differ, even amongst other Adobe programs such as Illustrator and After Effects. Once you understand how the pen tool works, though, accommodating any differences in execution should be fairly simple. The guide also will focus on the most straightforward methods for achieving the results you want; Photoshop usually offers many ways to accomplish the same task, but most are a matter of preference for the individual user.

How To Use This Guide

Because the pen tool has a significant hands-on learning curve, this guide will be most useful when followed as a tutorial. If you intend simply to read through the guide or use it as a reference, keep in mind that the pen tool really does take practice and it's highly recommended that time be set aside to do so. If you do plan to get hands-on with the guide, you will find along the way images to copy and work on in Photoshop. To obtain an image, copy it to the clipboard and then, in Photoshop, select "New file" and hit Enter/Return, then paste.

This guide also includes a number of videos which require Adobe Reader 6 or higher to play; the program is available for free [here](#). To play a video, simply click on the nearby button and a new window will open; ***please be sure to click off the page before clicking a button, otherwise the wrong video may play.*** If your computer has difficulty playing Flash files, be sure to download the latest updates from Macromedia [here](#). If you still encounter problems, it's probably nothing I can help with, but I will suggest reopening videos that do not run smoothly because the second time through, playback usually improves.

For the curious, all videos were screen captured with various freely-available programs, run through the AMVer's friend [VirtualDubMod](#) and then tinkered with in Adobe ImageReady before being exported as Flash files. For the even more curious-bordering-on-intrusive types, I eventually intend to learn how to do Flash right, but for this tutorial I had to work with the tools and knowledge at hand.

For Mac users, I provide the following conversions:

Alt = Option

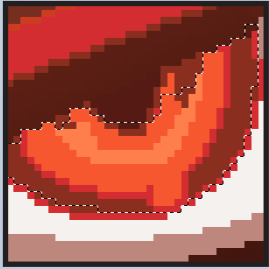
Ctrl = Command

Right click = Command click

Part I - World of Workpaths

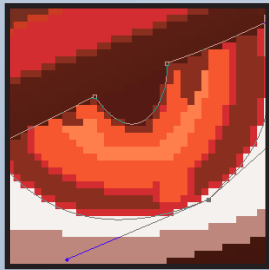
The Pen Tool vs. Marching Ants

First, let's get one thing straight: the pen tool does not create selections. Oh, you will eventually wind up with selections, but it's not like Photoshop's marquee tool, lasso or magic wand that create "marching ants" on your screen. Instead, the pen tool creates workpaths - essentially flexible, perfectly smooth guidelines that have no substance on their own, but can be used to mark where the edges of a shape or selection should be.



Pixel-clinging selection

A lot of people wonder why they should bother with the pen tool at all if going for one of the selection tools will get them marching ants right away. In some cases it does make more sense to skip the pen tool - say you want to quickly freehand a perfect circle or square - but complex images or those requiring very crisp, very accurate tracing are better served by workpaths. This is because the pen tool does not interact with an image's pixels - think of workpaths as existing on a blank plane above your page. Marching ants, on the other hand, cling to your image and place themselves according to the edges of each pixel they come in contact with.



Cling-free workpath

Using selection tools to define a particular area can turn into a big project if the marching ants are sticking to pixels you don't want. When workpaths are forced down onto your image by turning them into a selection, it's true the marching ants must wrap around the edges of pixels, but you're giving the program extremely precise directions as to where this occurs.

So what does all this mean when it comes to making AMVs? Speed and precision and the ability to adjust previous work without any headaches. The AMV process is long enough, don't drag it out with hours and hours of laborious work with selection tools, only to have someone comment, "Next time work on cleaning up your masks." Ouch. It's nearly impossible to do as good a job with marquee tools as with the pen tool, and - once you are comfortable with its use - the latter is a fast, safe way of blazing through AMV drudgery. This guide wouldn't exist if the pen tool had little to offer editors.

You know Gojyo is all about the hair...

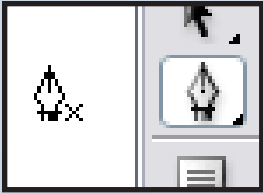
...or at least the fangirls are.

To demonstrate the advantages of workpaths over marching ants, I challenged myself to create the best mask I could in five minutes per frame - once with the pen tool and once with various selection tools. I used the same basic masking method available in the [forums](#). The video here contains three clips comprised of 14 frames each - one clip is just the original frames, one has pen tool masks applied and one has selection tool masks. The pen tool masks aren't perfect - five minutes is pushing it where these particular frames are concerned - but it's still fairly obvious which clip is more fit for public consumption.



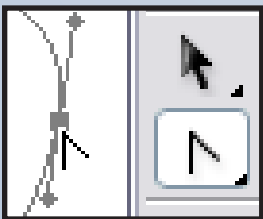
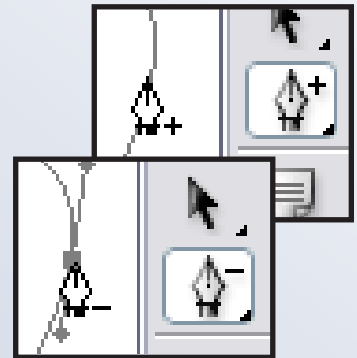
Tools of the Trade

The pen tool as found in Photoshop CS2 has five basic modes, four of which I'll explain now:



Default: the default mode appears like the tip of a calligraphy pen and is used to draw workpaths by setting anchorpoints, which are connectors that hold your paths together and define their curves.

Add/Delete: these two modes look the same as the default tool except for a plus or minus symbol beside the pen tip. They are used for adding and deleting anchorpoints on existing workpaths. Keyboard shortcuts useful for on-the-fly pen tool work are **Shift** to add or **Alt** to delete.



Convert: this mode doesn't look like a pen at all, but a two-sided triangle or arrow. The convert anchorpoint tool is used for switching existing anchorpoints between the default uncurved and curved modes. The keyboard shortcut is **Ctrl**.

Photoshop also includes a freeform pen tool, which lets you scrawl any kind of a line you want and then, when you release the mouse button, anchorpoints appear where necessary on the workpath. We will not be using this particular pen tool, however, since it's almost counterintuitive to what most AMVers are trying to accomplish.



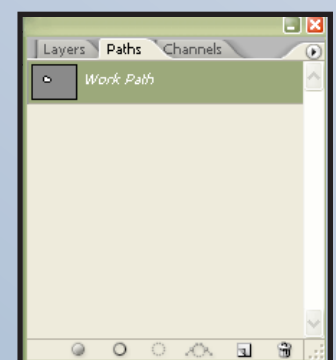
Finding the Direct Select Tool



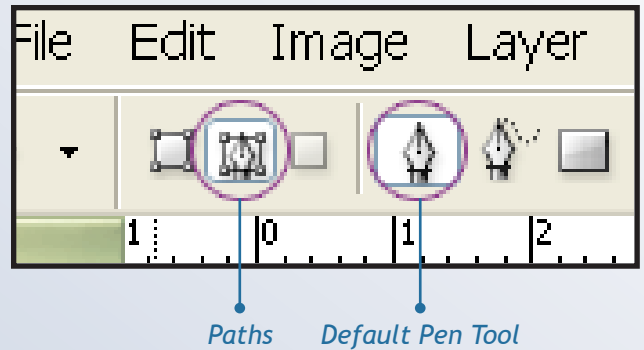
Workpath projects also require use of the direct select tool, a.k.a. that white arrow on your tool palette that seems to have no other uses - it's hidden under the black arrow. Because the pen tool is used primarily to draw shapes and lines, not change them afterwards, the direct select tool is usually how you grab and manipulate anchorpoints and workpaths.

The direct select tool keyboard shortcut is **Shift+A** (when the black arrow is visible on the tool palette) or **A** (when the white arrow is visible.) The latter can be brought up quickly and easily during a pen tool session by holding **Ctrl**.

Also worthy of note is the Paths palette, which can be accessed under the "Window" menu or on a tab in the Layers palette. Bringing the Paths palette forward offers additional methods for manipulating workpaths and also provides thumbnail views of the shapes you make. Being independent of pixels, workpaths themselves do not possess any transparency information and therefore do not occupy space in the Channels palette. More on the Paths palette will be covered later on.

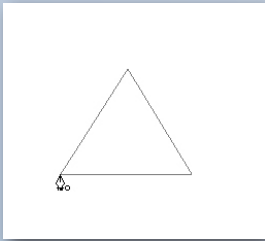


Are you rummaging around in your toolbox, wondering where to begin? We'll take it slow and simple for now. For those of you planning to use this guide hands-on, fire up Photoshop, open a new document and equip yourself with the pen tool (in default mode). Make sure, when the pen tool is selected, that its control menu is set to "Paths."



1. First, click once anywhere on the page to place an anchorpoint, then click again a short way to the right. There now are two anchorpoints before you with a straight line - your workpath - connecting them. The first anchorpoint is also called an endpoint because, as we'll see in a moment, it's the point which controls whether your workpath is open or closed and is the point at which we'll "end" our shape.

A noncurved workpath



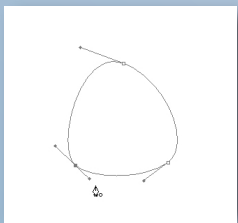
2. Click a third time a short distance above the workpath to place another anchorpoint, a second straight segment forms.

3. Hover the pen tool above the endpoint. A small circle will appear beside the tip, designating that if you click on that point, the workpath will close. Go ahead and click to complete the shape, which should resemble a triangle.

This is a noncurving workpath, because clearly, each workpath segment is a straight line. Creating a curving workpath with the pen tool is just a little more work. Get rid of the shape you've just made by hitting **Delete**.

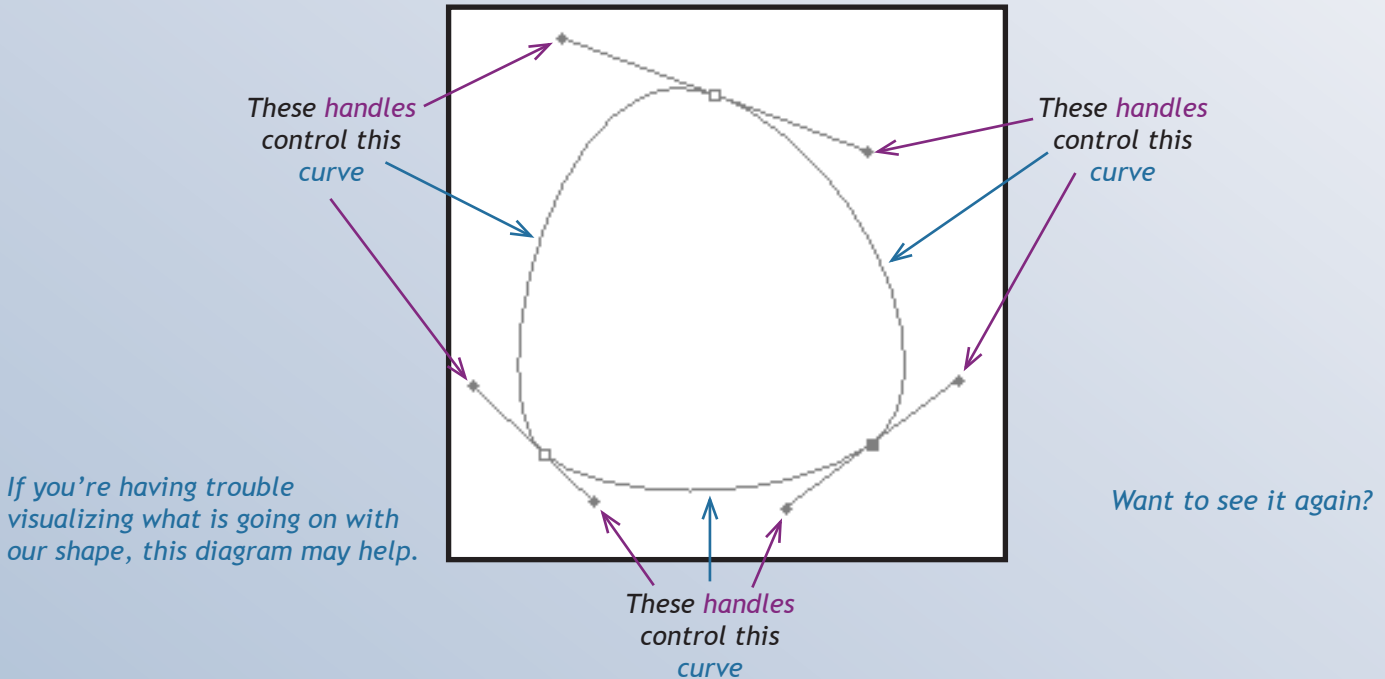
1. Once again, place an endpoint on the page, then click elsewhere, but this time, do not release the mouse button after the second anchorpoint appears. Instead, drag out slowly in any direction - you should see two little handles sprout from the anchorpoint, one of which you have hold of. Twitch the handle up a little and you should see the workpath segment break from its straight form into a nice curve. Release the mouse button.

A curved workpath



Anchorpoint handles are the source of bezier curves: one handle defines the curve angle of the workpath segment going into an anchorpoint, the other the segment going out. The workpath creation process is a three-step one, basically: you set an anchorpoint, then it's left (incoming) curve and then it's right (outgoing) curve. Some pen tool novices find it frustrating to keep track of this, but with practice it will be something you hardly have to think about. If nothing else, the pen tool is immensely logical.

2. Place another anchorpoint above the workpath segment, just as you did before, hold down the mouse button and drag out a handle. Instead of twitching the handle, this time jerk it around to see just how flexible that workpath segment is. Don't be afraid of it - one of the wonderful things about the pen tool is that nothing's permanent. Workpaths are very easy to edit once you know how to use the pen tool; you're never locked into having to get something perfect the first time around and, in most cases, it's very simple to improve upon and achieve exactly what you want.



So what are we looking at, exactly, while you drag around that anchorpoint controller? Handle pairs are, by default, locked into 180° positions relative to one another (a see-saw is a good analogy). Note that when you drag the outgoing handle up, the ingoing handle goes down in exactly the opposite direction. The further away from the anchorpoint you pull your handle, the further away its partner moves. Right now, because of this 180° lock, you are able to control the bezier curve of two workpath segments at once, if in a very limited manner. Don't start worrying about the next workpath segment just yet, though, that's not what you're holding onto that handle for. What always matters first is the workpath segment you've just drawn.

3. Move the handle you have hold of into such a position that there is a shallow curve between the two anchorpoints, then release the mouse button.

4. Close your workpath by clicking on the endpoint and drag a bit in any direction to obtain two handles. If you really were in love with the bezier curve between your endpoint and the first anchorpoint you placed, you're going to be saddened by how easy it now is to ruin it. Any way you pull that endpoint handle, the other handle in the pair also moves, affecting the bezier curve on the opposite side. Attempting to fix handle after handle and achieve exactly the curves you want at this stage would probably be frustrating and possibly even lead to severe pen tool hatred. Don't worry, though, it's going to be all right!

Get Real with Workpaths

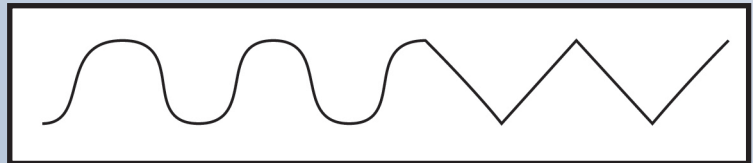
For those of you with a graphics program and pen tool, please follow along by downloading the images as you come across them and opening them up in your program of choice. Otherwise, sit back and watch the videos as you read through.

Always keep two goals in mind when drawing with the pen tool: first, the workpaths should be as smooth as possible and, second, as accurate as you can make them.

Smoothness is achieved by laying down as few anchorpoints as you can; the more anchorpoints you have, the more potential places for curves to change - however minutely - and create bumps along the workpath. Most people starting out use far too many because they aren't sure what, exactly, is going on and/or they don't know how to fix a mistake.

As for the second goal, accuracy, this is a matter of practice and commitment to careful, precise work. The pen tool requires a very delicate touch. I cannot emphasize this enough! It's far too easy for workpaths to go out of control with heavy-handed, hurried mouse movements. Paying attention to what you're doing, and more importantly WHY you're doing it, will take you faster down the road of pen tool mastery than rushing through your work only to find yourself staring at the ugly results, wondering how long it's going to take to fix. Drawing with the pen tool will probably be a slow and tedious process until you become more practiced, so be patient and trust that - just like video editing - the more you do it, the better you'll get. Your skill with the pen tool is wholly responsible for the quality of the end product.

Hover the Adobe Reader select tool over the picture, click and then copy it to the clipboard. In Photoshop, select "New file" and hit Enter, then paste. Zoom in to get a good view of what you're doing.



Let's get started! With the default pen tool in hand, click once at the leftmost tip of the waveform and pull a handle straight out to the right, releasing the mouse button when the curve of the workpath best traces the curve on the image. Now, click on the top of that first wave and once again pull a handle straight out to the right, releasing the mouse button when the workpath looks to be the best it can be at the moment.

Now, click on the bottom of the first wave, as close to parallel with your first anchorpoint as possible, and pull out another pair of handles so that the workpath you've just made approximately traces the crest of the wave. You probably won't make it perfect right out of the gate, but that's OK because we'll shortly be going back to fix everything up. Repeat this process for the next one and a half waves, then stop and don't click anywhere else.

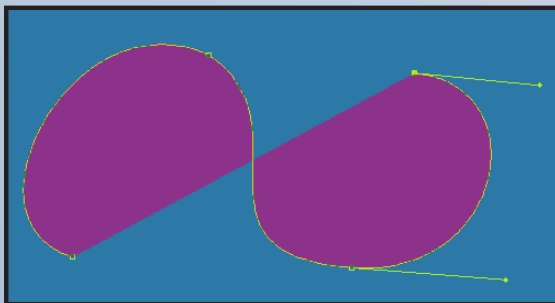
I HATE THE PEN TOOL!!

The video shows what happens if you attempt to set another anchorpoint now, mimicking the same procedure you performed in step two: the workpath bulges outwards, following the trajectory of the left-hand anchorpoint handle. It's completely out of alignment with the straight angle of the waveform. Adding another anchorpoint at the bottom doesn't help, and in fact makes things worse. It's impossible to get one curve even somewhat right without ruining another.

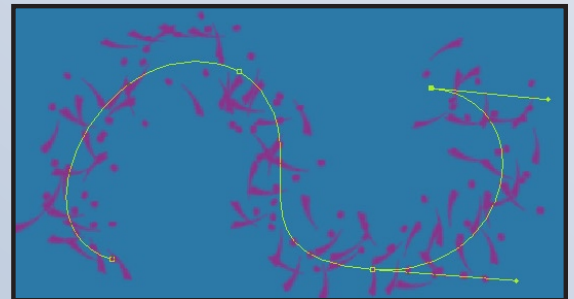
The task at hand is very simple. Hold down **Alt** and hover the pen tool - which now is in convert mode - over the right-hand handle of the last anchorpoint you created. Click on the end of the handle and swing it downwards so it aligns perfectly with the straight angle. Release **Alt** - the pen tool will revert to default mode - and click at the bottom of the "V," not releasing the mouse button. Hold down **Alt** and pull out a new handle, swinging it upwards so that it aligns with the next ascending angle.

Alt breaks the seesaw action of anchorpoint handle. If you were to release **Alt** while pulling out a handle, the curve on the opposite side would bulge outwards.

Repeat step three on the top of the next "V" wave and proceed from there until the entire waveform has been traced. Because accuracy is so important when using the pen tool for selections, you should be trying to make the workpath stay within the confines of the wave lines.



Fill that workpath!



Stroke that workpath!

p.s. This looks nice with feathers.

What you've just created is an open workpath; it's just a line, not a shape. Most people would not want to use this as a selection because it's not defining a precise, contained area. What's it good for, then? Unclosed workpaths can be useful if you're after unique shapes and squiggles. Just like with closed paths, you can fill or stroke them with color for various effects, the choices really depend on how well you know Photoshop and what you're trying to accomplish with your AMV.

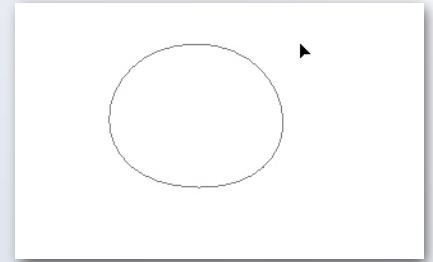
Multiple unclosed workpaths can be connected as long as they are all on the same layer. To resume drawing a workpath, hover the default pen tool above an anchorpoint until you get a bracket symbol beside the tip and then click to reactivate that path. Move to another workpath and click once on an endpoint to activate THAT path. A line will form between the two.



A Closed Workpath

A tough shape to draw is the circle, unless you know a few techniques. Most importantly, circles can (and should!) be drawn with only two anchorpoints.

Create a circular shape freehand with two anchorpoints, making sure to pull out the handles on each in preparation for defining two sets of curving workpath segments. Don't worry too much about making them perfect at this stage.



After you've drawn the second anchorpoint, hover the pen tool above the endpoint - you'll see that same small circle from Exercise 1 appear beside the pen tip when you're in position, signaling that a closed workpath will be created when you click there. Click on the endpoint to close the workpath, dragging out a handle as necessary to complete the circle, and keep this shape handy for the next few sections.

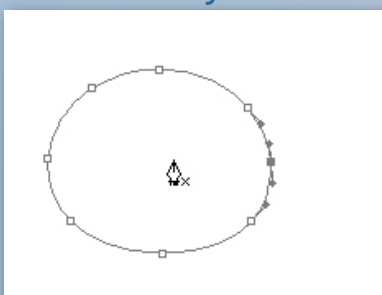
Direct Selecting

Your circle is probably kind of lopsided. If you tried to fix it with the pen tool, things would quickly fall apart. Points would be added and deleted everywhere and you couldn't grab onto anything. What gives? It's time for the direct select tool (the white arrow)...but first you need to know what to use it on.

Many people starting out with the pen tool have difficulty simply moving workpaths, primarily because they are clicking on the wrong things. Sometimes you will want to move the entire workpath, sometimes one segment of a workpath, sometimes one anchorpoint or several, and all of these methods require different selection choices. (Note that, in addition to manually using the mouse to pull items around, you can use the arrow keys to shift anchorpoints incrementally in various directions.)

Use the circular workpath you just created to experiment with the direct select tool's uses below. Before you begin, however, toss in a few more anchorpoints by hovering the pen tool over the workpath line, then clicking when the pen shifts into add mode. You can add as many anchorpoints as you want to the workpath without damaging the shape as long as you don't move them, because each is simply defining a smaller portion of the existing line. The delete anchorpoint tool works similarly, but with different results. Click on an existing point with the pen tool to remove, but note the workpath is slightly affected. This is because you

*Anchorpoints
Everywhere*



took away the information it needed to create that specific curve and it's going to rearrange itself according to the data stored in the immediate neighboring anchorpoints.

Start with the direct select tool by deselecting the shape. This is done by clicking anywhere on the page except your workpath.

Move the entire workpath by holding down **Ctrl** and clicking directly on a line. The direct select tool changes to the path selection tool and all of the anchorpoints become activated, signified by their black color. You can now move the entire shape around the screen as long as you click and hold on an anchorpoint or the workpath. Regain the direct select tool by hitting **Shift+A**.

Move a segment of the workpath by directly clicking on the workpath line and dragging.

Move an anchorpoint by clicking directly on one - it will change from a white dot to a black dot. If your workpath is not selected and you cannot see the points, this may involve some guesswork. Some graphics programs let you know when you're hovering above an anchorpoint and some don't - Photoshop is the latter.

Move multiple anchorpoints by clicking them directly, holding down **Shift** for each subsequent point you select, then dragging.

The direct select tool can remove anchorpoints, but unlike the pen tool, it will always delete a workpath segment at the same time. To remove, activate one or more anchorpoints with the direct select tool and then hit **Delete**. Now hit undo (**Ctrl+Z** the first time, **Ctrl+Alt+Z** subsequent times) until you're back to your closed workpath.

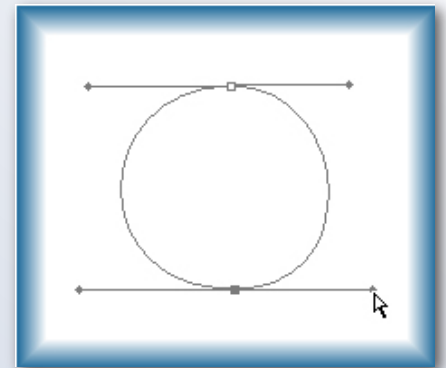
A different, and often faster, method of grabbing workpaths and anchorpoints entails indirectly selecting them. Hold down the mouse button and drag around the anchorpoints or workpaths you wish to move - a faux marquee will appear. When you're satisfied with what you've got, release the mouse button and you'll see the anchorpoints within the marquee turn black, ready to be moved about.

Circles in High Gear

Using various direct select techniques, it's time to tweak the circle into better shape. First, go in and remove all but two anchorpoints. Then, with the direct select tool, twitch the various handles around to achieve a perfect circle (but don't spend too much time trying). Frustrated? You should be. When you're faced

with a workpath with a very even curve - circle or not - that must come in from one side and exit the other at exactly the same angle, you need the **Shift** key.

Choose an anchorpoint and grab hold of one of its handles with the direct select tool. Then, hold down **Shift** and pull the handle out a bit - you'll see its movement is now constrained to a perfect 90-degree angle. Do the same to one handle of the other anchorpoint.



Use the direct select tool to move the anchorpoints into position as necessary to create a nice circle.

Create a few more circles of various sizes with the pen tool, applying **Shift** when you begin to pull a handle out and releasing the key only after you release the mouse button.

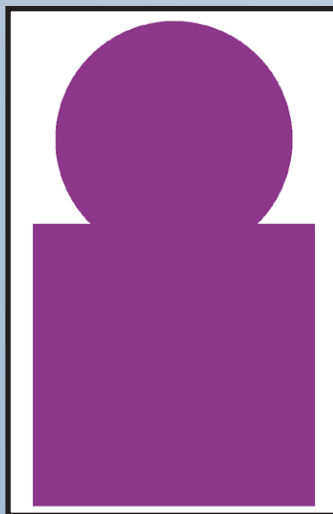
*For the next section, keep in mind that the **Alt** and **Shift** keys act independently of one another - they do not combine to produce a third function - so if you want to use them on an anchorpoint or anchorpoint handle, make sure you apply them at the right time.*

Irregular Shapes and the Fifth Pen Tool Mode

As you can see by now, **Shift** and **Alt** are very important for creating accurate workpaths. There are even more ways to make use of them, however, because not all workpaths involve nice, gentle curves. What if you're trying to make a selection around a sharp corner? Create a square? Very simple!

Download this shape and open it up in Photoshop for the next section.

First, click on the top of the shape to create an endpoint and drag out a handle.



Place a second anchorpoint at the bottom of the curve, where the circle touches the square, making the workpath curve accordingly. Hold down **Alt** and drag out the right-hand anchorpoint handle so it points slightly to the right, then hold down **Shift** as well to snap the handle to a 90-degree position. Don't pull the handle out too far, you don't want it to overlay your next anchorpoint. The length of a noncurving anchorpoint handle has no effect on its workpath, so you should generally make these only long enough to comfortably maneuver. Release the mouse button, then release **Alt** and **Shift**.

Place a third anchorpoint at the top right corner of the square, but do not drag out a handle until you hold down **Alt**. Now, drag downwards slightly, then hold down **Shift** as well. The handle will once again snap to a 90-degree position. Again, make sure to release the mouse button before you release the keys.

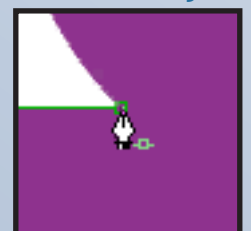
Your fourth anchorpoint must be perfectly even with your third to achieve a straight line. Hold down **Shift** and click on the lower right corner of the square - you don't need to make it exact because the handle you just set is going to force the next anchorpoint into very specific place, vertically at least. You do not *need* to pull out any handles because there are no curves planned right now, but it's usually better to have handles ready in case you change your mind down the road, so keep holding down **Shift** and drag a ways towards the next anchorpoint position. Repeat this process on the lower left corner of the square and then at the top left corner of the square.

Add a seventh anchorpoint where the circle touches the corner of the square by holding **Shift** - do not release the mouse button, though. Instead, not moving a fraction of an inch anywhere, release **Shift**, then hit **Alt** and drag out a handle in a Northwesterly direction in preparation for the curve ahead.

Now is a good time to discuss that fifth pen tool mode I skipped over. If you're still holding down the mouse button, let it go. Briefly select some other tool in your palette (the direct select tool was my choice) and fiddle a bit, but nothing too drastic. Ok, now go back to the pen tool (the keyboard shortcut is **P**). There's now a small X beside the pen tip. Click somewhere on the page to set another anchorpoint, but note your old workpath is not connected to it; there's just an endpoint floating in space. Well, that's because your first workpath became deactivated when you went off and fiddled with something else. The pen tool was trying to let you know this by displaying the X, signifying a workpath was activated on screen, but that it wasn't sure if it should continue drawing that one or start a new shape.

Get rid of the random anchorpoint you just set by hitting **Delete**. Now, hover the pen tool above the last anchorpoint you made. When you're in position, you'll see that bracket-like symbol appear beside it instead of the X, indicating the tool is ready and willing to reactivate the workpath, and click once. The pen tool will switch to yet another mode, this time with a small forward slash beside the tip. This signifies that your next anchorpoint will be a continuation of the existing, unclosed workpath.

There's the bracket-like symbol



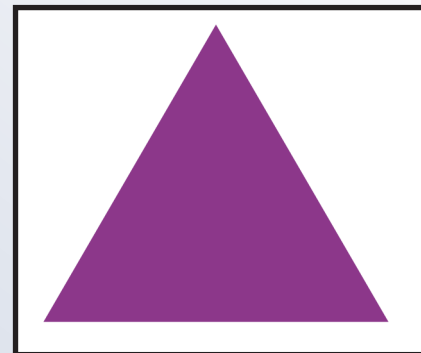
Finish the rest of the shape and close the workpath, then use the direct select tool to make any final adjustments.

Watch the whole process again here if you want to see it without any interruptions!

The Convert Anchorpoint Tool

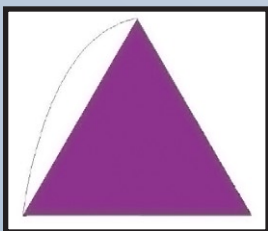
Download this shape and open it up in Photoshop.

Now for the fourth mode of the pen tool - convert anchorpoint. Recall that this mode switches anchorpoints from their default, noncurved state to curved. Since you've seen how sharp corners can be created with **Alt** and **Shift**, the convert anchorpoint tool is a third option that comes in handy when you're dealing with shapes that do not have curves. Begin to create the triangle below as follows:



Click once on the top corner of the triangle - do not drag out a handle. Click again on the second and third corners without dragging out handles. Click a final time on the endpoint to close the workpath, but this time hold down **Alt** and do drag out a handle - one that points too far to the left so that it creates a gentle curve instead of a straight line.

This workpath is a little off for triangle-making



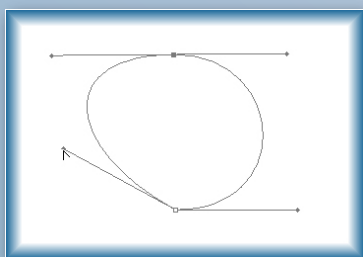
There should be a lopsided triangle thing defined by a workpath now, but what we really wanted was a triangle. Rather than redrawing the workpath or applying the direct select tool, it's best to simply change that bad anchorpoint's state, meaning strip off the handles that are creating the curve by turning it into a default anchorpoint.

To do this, select the convert anchorpoint tool and hover over the third anchorpoint, then click on it. The handles will disappear and the workpath will snap into a perfectly straight position. Pretty painless, right? Right!

One question that always crops up with novice pen toolers after they've drawn a shape is "How do you make only one handle move, not both?" Another question is, "Why can't I get this curve smooth?" The usual answer to both problems is that the shape needs attention from the convert anchorpoint tool. If you've got a pen tool handy, draw the two shapes described below before applying the convert anchorpoint tool.

Scenario 1: "How do I make only one handle move, not both?"

*S.O.S.
(Save Our Shape)*



A circle has been drawn with the **Shift** function of the pen tool, constraining all the curves to 90°, but maybe you decide it should be narrower and angled on one end with two bulges at the top of the other end (a.k.a. not a circle). You can't use the default pen tool and the direct select tool only see-saws the handles, causing the curves to bulge in wrong directions. What to do?

If you are following along in Photoshop, draw the shapes specified carefully to make sure the solutions provided apply.

With the convert anchorpoint tool, click on the tip of one of the anchorpoint's handles, dragging it in the direction you wish the curve to go. You'll notice the other handle is not affected now, no matter what you do. Thanks to the convert anchorpoint tool, you've made the two handles independent of one another, the complete reverse of what occurred when the circle was originally formed and you used **Shift** to keep them at 180° to one another. Because you've broken their alignment, both handles in the pair can now be freely moved around either with the convert anchorpoint tool or the direct select tool.

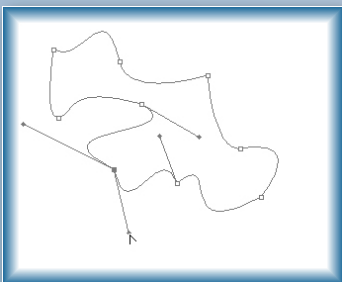
Unaligning two handles on a closed workpath can also be accomplished via the direct select tool with some extra preparation. A word of warning: it only works on aligned handles or on handles whose anchorpoint is not selected. In my opinion, this method is a lot of extra work and potentially problematic down the road, but it's really a matter of personal preference which tool *you* choose.

For this we'll need a shape with three or more anchorpoints, at least one of which has aligned handles. On your workpath, select an anchorpoint next to the aligned one - the left neighbor if you're going to go after the left-hand workpath segment or the right for the right-hand segment. Two handles will sprout from this selected anchorpoint, as well as one handle on each of the anchorpoint's neighbors. Now, go to the anchorpoint with the aligned handles - although you can't see them both right now - hold down **Alt** so that a small plus sign appears beside the arrow (which will turn black if you're not directly over the workpath) then click on the handle tip to swing it about freely; no more 180° alignment.

Scenario 2: "Why can't I get this curve smooth?"

You've made an interesting shape, employed the **Alt** key to make curves that double back on themselves, and now realize that a certain area just doesn't look right. Maybe it's got a bump near an anchorpoint, maybe the curve isn't nice and easy compared to its neighbors, maybe you need to change the shape completely. Pulling the handles with the direct select tool isn't helping to smooth it out because the handles are working independently of one another, but you're afraid to touch the **Shift** key because you don't want a perfectly-aligned curve. Help!

*S.O.S.A.
(Save Our Shape Again)*



The simplest solution, and one you should try before wasting any time at all with the direct select tool, is to use the convert anchorpoint tool. It's much better to fix a bad curve by resetting an anchorpoint than become frustrated fighting with two handles that have been hopelessly pulled out of position. As an added bonus, the convert anchorpoint tool can wipe out all the fiddling that's created the bad curve and define a new curve in one smooth step - no **Alt** or direct select tool required.

So, take the convert anchorpoint pen tool and click on the offending

anchorpoint to switch it into default mode. Still holding down the mouse button, immediately drag out new handles - handles that are perfectly aligned. Release the mouse button briefly, then click again on the top of one handle and swing it one way or another to break the alignment and change the curve.

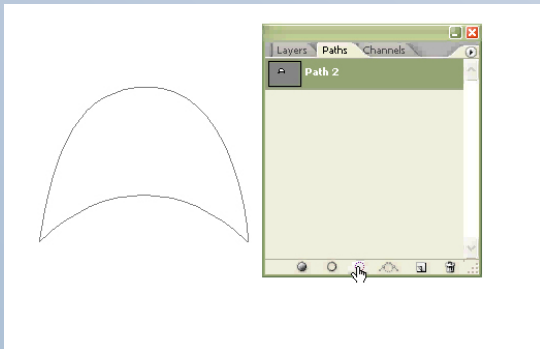
There's another way to alter the anchorpoint balancing act after the fact, again utilizing the direct select tool, but I only include it here so that, if it happens by accident, you know what's going on. This strange method begins by selecting an anchorpoint, then holding down **Alt** when you grab one of its handles - it doesn't matter which you choose, because if you swing the handle, its little friend on the other side of the anchorpoint will swing as well.

Part III - Workpaths, Meet Selections

Now that you've learned how to draw a closed workpath, it's time to put one to good use by making it into a selection.

Creating a Selection

Hello, Marching Ants



Click on image for before & after views.

Draw a closed workpath, then look at the Paths palette window. At the bottom are a number of symbols, one of which is a circle made up of small dots signifying a selected workpath(s) will be converted to marching ants when the symbol is clicked. Go ahead and click and then, to accept the selection, hit **Enter**. Note the workpath is dismissed now that it has served its purpose.

Recall how smooth that workpath was? Zoom in tightly on the edge of the selection. You'll immediately see that, whereas your workpath ignored the pixels beneath it, the marching ants are conforming to the edge of each pixel, creating a ragged, if accurate, line.

Without going too in depth, there is no way to change the fact that all Photoshop images and selections will, at some level, be pixelated and uneven because it is a raster-based program, meaning it uses individual pixels to define color and transparency. Depending on the resolution and size of your image, raggedness will be noticeable to a greater or lesser degree, but there is not a lot of flexibility here if you're going to be putting the file into a video editing program - certain resolutions and sizes must be maintained.

Marching Ants into Workpaths

It's a fact that, if the shape you're trying to achieve can be instantly created by a selection tool, that is what you should do - as long as you're not going to turn it into a workpath. But if the shape is even marginally beyond a click- and drag-once project, the pen tool should be your first choice. Once you learn how to use the pen tool, however, coupling its abilities with the various selection tools can be very tempting. One idea most novices latch onto almost immediately is using a selection tool, particularly the magic wand, to quickly define an area without any brainwork on their part, then turn it into a workpath so - in theory - all they have to make are minor adjustments where the marching ants failed to get exactly the right shape, then turn the workpath back into a selection. There is a good reason that this isn't the best course of action, though.

Using the magic wand tool (32 Tolerance, Anti Alias, Contiguous), select only the background (white) portions of the picture here, remembering to select the area inside the tambourine. Pretend you're going to be making a mask out of it, so you want Sumomo to be as crisp and perfect as possible to avoid irritating your AMV audience. If you tried to use this selection as a mask right now, it would turn out looking like this.

Turn the marching ants into a workpath by clicking on the handled, circular icon on the bottom of the Paths palette. The result should be a mess, anchorpoints all over the place and a less-than-smooth edge - definitely not what we wanted. This is hardcore evidence of how sloppy the selection tools are thanks to their pixel-clinging nature. Fixing the shape up would be a painstaking process involving adding, deleting, converting and moving things like crazy.

The marching ants-to-workpaths-to-marching-ants method of creating selections is almost always two to three times as much work as just drawing the workpaths by hand. There might be occasions when this route is an acceptable alternative, but it will never be better than just going for the pen tool and workpaths right from the start. Even selections created from a simple workpath will, when turned back into a workpath, become very ugly.

Download Sumomo and open the file in Photoshop. Make sure the Background layer is unlocked.



Hideous, hideous mask.



Hideous, hideous workpaths.

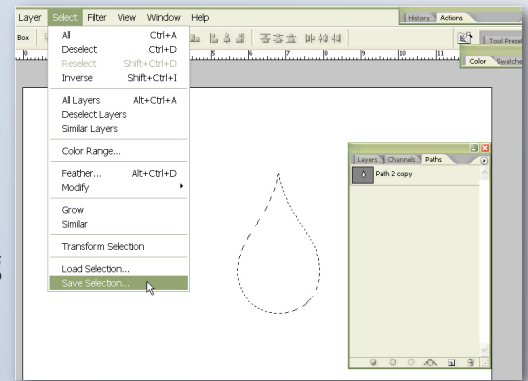


It's difficult, if not impossible, to create a perfect circle with the marquee tool and then turn it into a workpath that sports the proper number of anchorpoints (two). Squares and rectangles do work well, though.

If you're going to be using multiple workpaths within the same file, it's often wise to save them on individual layers that can be labeled for easy identification. This is done by hitting the new layer icon on the Paths palette before you start drawing a new workpath. Each individual workpath can then be accessed at any time by clicking on its associated layer, provided you never delete them (the layer OR the workpath).

One thing AMV editors should consider when dabbling in Photoshop is the size of their resulting files. To get the most out of the pen tool, you need to save the files in which you've created paths as Photoshop documents (PSD). JPEGs cannot be saved with workpath information. Bringing PSD files into your AMV might not be the best choice, though, because they'll be quite large compared to a JPEG. So, if you want all the benefits of the pen tool (which includes keeping your paths around for future editing) be sure to save the file you've done your pen tool work in as a Photoshop document (PSD) and as a JPEG.

Another tip: if you're saving these PSD files so as not to lose your workpaths, it's generally a good idea to also save your selections once you get them just the way you want them; it's one less step to deal with down the road. AMV editors with lots of masks to create can really take advantage of this option (saving their final selections) by creating selection-based action scripts in Photoshop which can automate the majority of the mask-making process.



Saving a Selection

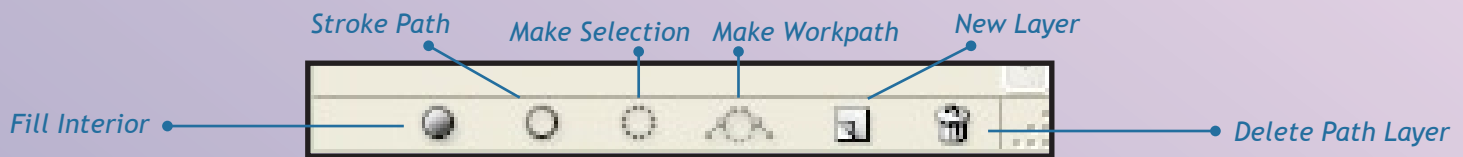
In Non-Living Color

I said I would not dive too deeply into making masks and whatnot, but part of learning the pen tool requires understanding how paths can be manipulated to create “real” images. Let's start with the Paths palette.

First, create a closed workpath with the pen tool - any size or shape is fine. Turn the workpath into a selection. The marching ants are happily moving around your shape, but the workpath is still there, if you want to use it.

If you don't like the shape (pretend you don't, for just a minute), select the path layer again, then take up the pen tool or the direct select tool and change around the workpath a bit. You'll see that the marching ants remain in place; the selection exists independently of the workpath and is not affected by any changes to it. If you want to make the new shape into a selection, hit that create selection icon again to redefine the marching ants. Nice, huh? Now for some color.

Hit undo until you're back to just a workpath.

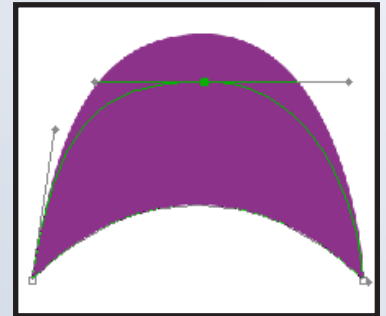


Take a look at the bottom of the Paths palette. The dark circle will fill the interior of the workpath with the foreground color and the white circle will stroke a workpath with the foreground color and the paintbrush. You must have a layer on your Layers palette selected to apply color to a workpath, otherwise Photoshop has no direction as to where the color will be applied.

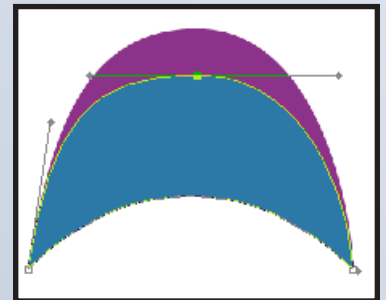
Try filling the interior of your workpath and note, again, if you go in and move the workpath around after the color is applied, the shape underneath - this time made up of colored pixels - is not affected. If you hit that fill interior icon again, color would be reapplied, but only within the workpath.

Now, select a different foreground color and hit the stroke workpath icon. To one extent or another, a rough line of color will appear. Depending on the brush you choose (and its settings), you will get different results. This function is a little more dramatic if, with the Path layer selected, you switch to the Brush tool before hitting the stroke workpath icon. Again, your brush settings will affect the results, but now you can at least see the brush shape and perhaps do something fun with it.

The workpath doesn't care about your pixels...



...until you apply more color.



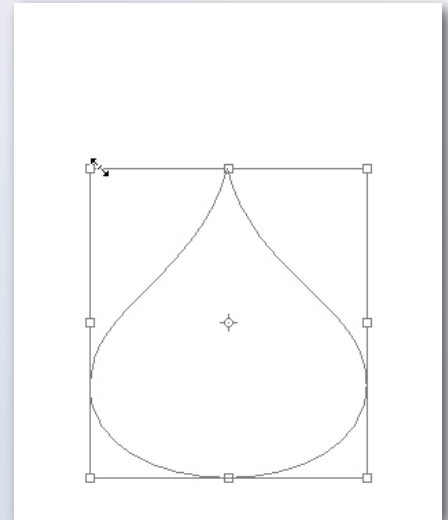
Part IV - Odds & Ends

Like **Shift**, another control useful across the board in Photoshop is **Alt** when you want to duplicate an image, selection or workpath.

To copy a shape on the same Paths palette layer, simply activate the entire workpath and click on it with the direct select tool. Hold down **Alt** so a plus sign appears beside the arrow and then, still holding down the mouse button, drag in any direction a tiny bit before releasing **Alt**. Even if you can't see it very well, a second shape that exactly duplicates the first is now active and can be pulled around freely as long as you still have the entire shape selected.

To put this new shape on its own layer in the Paths palette, drag the existing Path layer onto the new layer icon and delete the unwanted shape (if necessary).

Above and beyond basics of workpaths covered in this tutorial are functions found in the Photoshop CS2 workpath menus, which can be accessed by right clicking when using either the direct select or pen tool or right clicking on a layer or icon in the Paths palette. Some functions are fairly obvious, but others are worth experimenting with if you've got time on your hands or want to fine tune the behavior of workpaths. One I do suggest trying is Free Transform. Selecting this function will allow access to yet another menu, which can be brought up by right clicking once again. A full range of transform options will become available.



Describing all the things the pen tool can do would push the limits of this guide, which is intended only to provide a good foundation for the tool's mechanics. I will point out, however, that when the pen tool is selected you will see the following menu appear on the Photoshop title bar.



Some of it we've seen before - there's the default pen tool and the freeform pen tool - the rest of it actually more closely resembles the Shape tool menu or the Marquee menu; unsurprisingly, these various functions work pretty much the same way on the pen tool. Again, it's worth experimenting a little just to know what options are out there, but don't get overwhelmed by them all. As I said at the very beginning of this guide, Photoshop offers many ways of accomplishing the same task and none is necessarily better than any other.

Part V - The End

"It's Going to Be All Write: An AMVer's Guide to the Pen Tool" is now finished, kaput, concluded, all wrapped up. Hopefully, you can now whip out workpaths with confidence and enjoy the benefits of creating masks without worrying about pixels getting in the way. I learned a thing or two myself in writing this guide, which is 100% original - except, of course, for the various images contained within that are copyright of their respective owners. (Didn't want to forget to put that in!) Questions or comments to do with this guide are welcome and may be sent to driftroot@animemusicvideos.org. Good luck with all your AMV endeavors!

DriftRoot