SMASHING MAGAZINE

Mastering Photoshop

for Web Design

Volume 3

P3

Imprint

Copyright 2012 Smashing Media GmbH, Freiburg, Germany

Version 1: October 2012

ISBN: 978-3-943075-47-2

Cover Design: Ricardo Gimenes

PR & Press: Stephan Poppe

eBook Strategy: Andrew Rogerson & Talita Telma Stöckle

Technical Editing: Andrew Rogerson

Idea & Concept: Smashing Media GmbH

ABOUT SMASHING MAGAZINE

Smashing Magazine is an online magazine dedicated to Web designers and developers worldwide. Its rigorous quality control and thorough editorial work has gathered a devoted community exceeding half a million subscribers, followers and fans. Each and every published article is carefully prepared, edited, reviewed and curated according to the high quality standards set in Smashing Magazine's own publishing policy. Smashing Magazine publishes articles on a daily basis with topics ranging from business, visual design, typography, front-end as well as back-end development, all the way to usability and user experience design. The magazine is — and always has been — a professional and independent online publication neither controlled nor influenced by any third parties, delivering content in the best interest of its readers. These guidelines are continually revised and updated to assure that the quality of the published content is never compromised.

ABOUT SMASHING MEDIA GMBH

Smashing Media GmbH is one of the world's leading online publishing companies in the field of Web design. Founded in 2009 by Sven Lennartz and Vitaly Friedman, the company's headquarters is situated in southern Germany, in the sunny city of Freiburg im Breisgau. Smashing Media's lead publication, Smashing Magazine, has gained worldwide attention since its emergence back in 2006, and is supported by the vast, global Smashing community and readership. Smashing Magazine had proven to be a trustworthy online source containing high quality articles on progressive design and coding techniques as well as recent developments in the Web design industry.

About this eBook

Like most elements (such as typography, color, layout and content), photography is a crucial component on interfaces and for websites. This is one of the reasons why new tools are created by heavy users of Photoshop. This eBook "Mastering Photoshop, Vol.3" offers hints for recent techniques, such as using brush tools, anti-aliasing typography, layer and grid settings, unveiling masks and perfecting pixels.

Table of Contents

Brushing Up On Photoshop's Brush Tool

Unveiling Photoshop Masks

Mastering Photoshop With Paths

The Ails Of Typographic Anti-Aliasing

Mastering Photoshop Techniques: Layer Styles

Establishing Your Grid In Photoshop

Pixel Perfection When Rotating, Pasting And Nudging In Photoshop

Top Non-Destructive Photoshop Techniques

Exporting From Photoshop

The Lost Art Of Design Etiquette

About The Authors

Brushing Up On Photoshop's Brush Tool

Tom Giannattasio

When laid by a learned hand, **brush** strokes can convey a sense of energy, tactility and humanness. These qualities speak to your audience's subconscious, whispering ideas that words alone can't convey. In the digital realm, a website with beautiful brushwork is a welcome break from the stark precision of most corporate websites.

Mastering the digital brush is by no means easy. It carries the same difficulties as the sable brush hidden at the bottom of your art bin. In fact, the difficulty is multiplied by the disconnect between the hand and monitor. Developing Photoshop brush skills takes time, but it is well worth the effort. **This article outlines the plethora of options that Photoshop affords**, so that you can efficiently create and use brushes like the Old Masters.

Basic Settings

Along the brush's options bar are some simple yet powerful settings that determine the strength and shape of your brush. These settings have a large impact on the how the brush applies paint, so they're definitely important to understand.

The brush's most essential settings are found in the options bar.

BRUSH

The brush menu, which is accessible by clicking the drop-down menu next to the brush preview or by right-clicking within the canvas, presents three options to control the shape of your brush: "Master Diameter," "Hardness" and "Brush Shape."

The Master Diameter setting sets the overall width and height of your brush in pixels. It's hard to notice on a standard round brush, but making a brush larger than its original size can cause it to become blurry. So, if you want to maintain clean edges, keep an eye on the brush's original diameter. This setting is easily controlled using a couple of shortcuts. You can use *[* and *]* to modify the diameter in increments of 10 pixels, or you can use the on-canvas drag method: with your mouse cursor inside the canvas, hold down *Option + Control + Shift* and drag the mouse left or right. The brush will change in size as you scrub back and forth. This is great for when you need a precise size on the fly.

The brush menu is easily accessible by right-clicking on the canvas.

The hardness setting is available only for Photoshop's round brushes. Setting the hardness as a percentage from 0 to 100 will feather the edges of the brush; 100% is a crisp edge, and 0% is a completely feathered edge from the center of the brush to the circumference. For broad alterations to this setting, use the keyboard shortcuts *Shift +]* and *Shift + [* to change the values in 25% increments, or you can hold *Command + Option + Control* and drag inside the canvas to change the values and see them take effect as you do it.

The on-canvas drag shortcuts make diameter and hardness adjustments simple and intuitive.

At the bottom of the panel is an assortment of brush presets, which gives you quick access to the brushes you use most. Some of the defaults are just simple shapes and textures, but others have been customized with advanced settings in the Brushes palette (F5). Photoshop has a number of brush libraries that can be added to the list using the panel's fly-out menu, but you can also load and create custom brushes (see "Managing Presets" below).

Photoshop provides a dozen additional brush libraries, which can be found in the brush menu's fly-out.

MODE

The brush's mode sets how painted pixels affect those already on the current layer. These modes work in the same way that Blend Modes work on the layer's palette, except that they're converted to absolute values when the stroke is finished. This is an important distinction to make: once you've painted using a blending mode, that mode cannot be altered after the fact as you would using blending modes on the layer's palette.

Setting the mode changes how the paint affects the layer's current pixels.

The brush tool also introduces two blending modes not found in the layer's palette: "Behind" and "Clear." The Behind setting allows you to paint only in the areas of the layer that are transparent; this can be helpful if you need to paint behind a subject and leave filled pixels intact. The Clear setting essentially turns the brush into an eraser; instead of adding paint to the layer, it removes it.

The Behind mode allows you to paint strictly in transparent areas. Clear mode essentially turns your brush into an eraser.

OPACITY, FLOW AND AIRBRUSH

These three settings work in unison to determine the amount of paint laid on the canvas. The opacity setting is the master control; it sets the maximum amount that can be painted with each stroke, mouse down to mouse up, regardless of any other setting.

Flow, on the other hand, sets the amount of paint applied to an area every time the brush moves. So, if your Flow setting is set to 20%, and you click one area of the layer, only 20% will be painted. However, if you move the mouse back and forth over an area with the same setting, the paint will build up incrementally by 20%.

Finally, the Airbrush setting allows you to build up paint based on time instead of movement; by simply holding the mouse down in one area, you can multiply the brush's effect. You can quickly set the Opacity of a brush using the number keys (5 is 50%, 65 is 65%). By holding *Shift* while inputing the numbers, you can control the brush's Fill setting. Note: if the Airbrush setting is on, these two shortcuts are reversed.

Opacity and Flow both control the brush's transparency but are very different.

Advanced Settings

Within the Brushes palette (F5) are dozens of settings that control the way the brush paints, from shape and size to flow and scatter. Understanding how to use these options is the key to creating wonderful brushes.

BRUSH PRESETS

The Brush Presets menu lists all of the currently available brushes. While some of the presets simply change the shape of the brush, others have advanced settings.

The brushes in the Brush Presets list are not just brush shapes; some also have advanced settings.

Photoshop contains a number of brush libraries in addition to the defaults, which can be easily appended to the current list of presets. These presets are accessible in the fly-out menus located in the Brushes Palette and in the Brush drop-down menu in the toolbar. Photoshop provides a dozen or so libraries, including Calligraphic, Dry Media, Wet Media and Natural, but you can also load a custom library by choosing "Load Brushes..."

If you've created a brush that you would like to save as your own custom preset, you can do so by clicking the *Create New Brush* button at the bottom of the palette. This will add the brush to your preset menu; however, if the menu is reset, the brush will be lost. Luckily, Photoshop allows you to export a custom library so that you never lose your favorite brushes. Simply choose, "Save Brushes..." from the fly-out menu and you can export an .ABR file containing all of the brushes currently in the Brush Presets menu.

You can customize even further by creating your own custom brush shape. To do so, start by creating a selection of the area you'd like to create the brush sample from (or select the layer you'd like to use). Then, select *Edit → Create Brush Preset...* Name it and click "Okay." A new brush preset will be added to the menu.

Creating a custom brush shape is the first step in creating a completely unique brush.

BRUSH TIP SHAPE

This group allows you to control the primary shape of the brush. Many of these settings, which are outlined above, are also found in the Brushes toolbar, but here we also have options for flipping, rotation, roundness and spacing. "Rotation," "Flip X" and "Flip Y" modify how the brush is oriented. Setting Roundness to lower than 100% will squish the brush along its original x-axis; this can be used to easily create a calligraphic brush. Adobe realized that Roundness and Rotation may be hard to visualize and so has added a more intuitive way to work with these settings: simply drag the arrow and control points on the image to the right, and the values will be updated.

The Brush Tip Shape menu provides control of the primary shape of the brush.

Photoshop scales brushes by interpolating them up or down; no vector brushes are available. Therefore, some brushes may become gritty or pixelated if scaled too much. To quickly return a brush to its original size, click the *Use Sample Size* button.

Over-sizing a brush can cause unwanted pixellation. This can be remedied with the Use Sample Size *button.*

The final setting in this group is Spacing, which determines how often the brush is sampled onto the layer. Lower values place the samples close together, and higher values space them out. Spacing not only changes the stroke's appearance but can drastically affect Photoshop's performance. Setting it to 1% can produce smoother edges, but a large or complex brush can seriously bog Photoshop down. If performance is an issue, keep this setting as high as you possibly can. Spacing can also be turned off using the checkbox next to its name. This causes the brush to sample with inconsistent spacing, based on the speed of your movements.

Spacing has a large effect on the smoothness of your brush but can also impact rendering speed.

BRUSH CONTROL METHODS

A number of the settings in the Brushes palette allow you to set a method for controlling values. They include "Off," "Fade," "Pen Pressure," "Pen Tilt," "Stylus Wheel," "Rotation," "Initial Direction" and "Direction." Some of these settings require a tablet, such as a Wacom. If you don't have a tablet or if the method is not available with your particular stylus, Photoshop will display an error icon to notify you.

OFF

Control is completely negated with the Off setting, which means that values will remain consistent throughout the stroke of the brush.

Without a control set, each sample of the brush remains consistent.

FADE

Using the Fade control allows you to specify the number of steps over which the setting will incrementally decrease until it reaches its minimum. So, by default, setting the Size control to Fade with 10 steps will cause the brush to decrease its size by 10% each step until the brush reaches 0. This can be used with the Size setting to effectively create individual strands of hair. While many of the settings allow you to specify the fade's minimum percentage, others use a preset amount. For example, setting steps for the Angle Fade specifies how many steps will be used to rotate the brush 360°.

The Fade Control incrementally decreases values until the minimum is reached.

PEN PRESSURE

Pen Pressure is an extremely useful setting but requires a pressure-sensitive tablet device. It determines values based on how hard you press the pen to the pad. This makes for very intuitive painting especially when used on size and opacity settings.

Pen Pressure requires a tablet device and determines values based on how hard the stylus is pressed to the pad.

PEN TILT

The Pen Tilt setting changes values based on the angle of the pen to the tablet. When the pen is perfectly perpendicular to the tablet, the variance is set to 0%. As you tilt the pen, the values increase. This setting is especially helpful for controlling the angle of the brush, because it also takes into consideration the direction in which the pen is pointing on the tablet. So, holding the pen at an angle and pointing it to the left side of the tablet will point the brush to the left.

By setting the Angle Control to Pen Tilt, you can match the brush tip's rotation to your hand's rotation.

STYLUS WHEEL

If your stylus comes equipped with a Stylus Wheel, you can use it to control variance on the fly by rotating it. This may be helpful for quickly changing settings between strokes, but using to change values during a stroke is difficult.

If your pen has a stylus wheel, you can use it to control values.

ROTATION

This is another setting that requires a special type of stylus. If your stylus supports Rotation, you can simply rotate the stylus to control values. This is probably best used with the angle setting.

If your pen has a stylus wheel, you can use it to control values.

INITIAL DIRECTION

When using the Initial Direction setting, the brush will not immediately start applying paint. Photoshop waits to see in which direction you move the brush and then rotates the brush based on the angle.

The first movement you make using the brush determines the angle when using the Initial Direction control.

DIRECTION

The Direction setting can be particularly useful for painting something like grass along a contour, because it will rotate based on the direction that your brush has traveled since the last step.

The Direction control rotates your brush so that it naturally follows the curve of the stroke.

SHAPE DYNAMICS

Now that you have a basic shape and size set, you can add some variance using Shape Dynamics. Here you'll see three different types of jitters, which control the amount of variation allowed for size, angle and roundness. Setting any of these options to above 0% will cause the brush to sample at random values within the range set by the percentage (e.g. setting the Angle Jitter to 50% will limit the brush's rotation to 180°).

The Shape Dynamics' jitter controls can be used to add some variation to the brush shape.

SCATTERING

The Scattering menu allows you to vary where each sample of the brush is placed and how many samples are placed per step. Three sliders are here for you to control: "Scatter," "Count" and "Count Jitter." The Scatter setting sets a percentage for how far off the origin the sample is allowed to travel. By default, this will control the variance only along the y-axis, but by clicking the "Both Axes" checkbox, you can set the same value for the x-axis.

Scattering can add a lively randomness to a stroke.

Count and Count Jitter work together to determine how many samples are generated in every step. Count dictates the maximum number of samples allowed, while Count Jitter randomly chooses a number within that range to sample. If the Scatter setting is not set to above 0%, then the Count setting will place the brush on top of itself, which can create a "heavy" brush with jagged edges.

TEXTURE

Adding a texture to your brush can give a wonderful sense of depth. Photoshop allows you to apply any of your Texture presets to your brush. You can then modify the Scale or Invert it. The Mode drop-down menu provides a list of blending modes that determine how the texture mixes with the current values of the brush. Although most of these blending modes look familiar, they function a little differently here. For example, you would think that setting the Mode to Multiply on a brush that is completely black wouldn't have any effect. However, Photoshop compensates by reducing the original values of the brush so that the texture is visible.

At first, the Depth setting seems to work by setting the opacity of the texture. However, what it really does is ramp the values of the texture from their original grayscale values (at 100%) to completely white (0%). This allows for more dramatic results than simply reducing the texture's opacity.

This menu also has a feature, called "Texture Each Tip," that allows you to control the texture of every brush sample. Checking this option turns a couple of other sliders on, which set the Minimum Depth and Depth Jitter. Altering these values will cause each sample to have a random depth within the set range.

TEXTURE MODE: DARKEN

TEXTURE MODE: DARKEN, DEPTH: 50%

TEXTURE EACH TIP

TEXTURE EACH TIP, DEPTH JITTER: 100%

Using a texture adds tactility and depth to each stroke.

DUAL BRUSH

Combining two brushes using the Dual Brush option opens the door to some fantastic effects that you could never have created using a single brush. As the name implies, this setting uses two different brush shapes to create the final sample. The primary brush is basically used as the mask that the dual brush is contained within. The Dual Brush menu has a few settings for the second brush, which work in the same manner as they do for the primary brush. The differences you set in Shape, Spacing, Scattering, Count and Mode make for a more dynamic and naturally random brush stroke.

Combining brush shapes creates a unique effect that you couldn't have achieved otherwise.

COLOR DYNAMICS

The Color Dynamics menu helps you interject some color variation into your brush strokes. You can control the colors by using the Foreground/ Background Jitter, or you can allow Photoshop to randomly select values using the Hue, Saturation and Brightness Jitters.

The Foreground/Background Jitter controls how much of the background color is allowed to be sampled into the brush. Note that the background color is *added to*, not substituted for, the foreground color. This means that if your foreground color is red and your background color is blue, the intermediary samples will be a purple hue.

The Foreground/Background Jitter randomly blends two colors together.

The Hue, Saturation and Brightness Jitters determine the maximum amount of variance allowed based on the foreground color's values for each. So, if your foreground color has a saturation or brightness value of 0, then your brush strokes will be completely grayscale. At the other extreme, setting a foreground color with 100% brightness and saturation will make every possible color available to use.

Hue, Saturation and Brightness Jitters can be used to add variation to the foreground color's properties.

In addition to the Jitter settings is a Purity slider. This sets how pure the saturation is for each sample. If set to 0%, it does nothing; if moved to 100%, it limits the Saturation value for each sample to 100%. However, this should not be mistaken as an overriding setting for saturation; it sets only thresholds for it. So, setting it to -50% would ensure that saturation values never go above 50%, and a setting of -100% would completely remove all saturation.

The Purity slider sets a threshold for each brush sample's saturation level.

OTHER DYNAMICS

With the Other Dynamics menu, you can jitter and set controls for varying the brush's opacity and flow. Both of these jitters depend on the brush's current settings in the properties bar. They don't allow the brush to gain opacity; they only determine how much lower it can go. The pen pressure control is an intuitive match for either of these settings.

Opacity and Flow Jitters both change the transparency of each brush tip shape, but the Flow Jitter allows the samples to compound.

OTHER SETTINGS

Noise

Generates random noise within the gray values of your brush shape.

Wet Edges

Decreases the interior values of your brush, while leaving the edges at full opacity. Doing so, the brush creates an effect similar to watercolor with its "wet edges."

Airbrush
Allows paint to build up incrementally based on the Flow setting and limited by the Opacity setting (see Opacity, Flow and Airbrush above).

Smoothing
Smoothes the curves of the stroke to prevent polygonal curvatures. Turning this off may help if your brush is rendering slowly.

Protect Texture
Ensures that the same texture is used for every brush with a texture.

OTHER PALETTE OPTIONS

Lock Setting
Next to each menu name in the Brushes Palette is a padlock icon. These allow you to lock a setting so that when you switch to a different brush preset, the settings from that menu carry over to the new preset. This can be very helpful when you need a similar effect but don't want to have to rebuild it with a new brush shape.

Resetting
The Brushes Palette has two different ways to reset controls in its fly-out menu: "Clear Brush Controls" and "Reset All Locked Settings." Clear Brush Controls will turn off all controls except for Smoothing but keeps the locked settings locked. Reset All Locked Settings also turns off all controls but will also unlock everything.

Painting Quick Tips

Learning the technical aspects of the digital brush is only the first step in becoming a master brush artist. It also requires a bit of talent mixed in with never-ending practice. Here are some quick tips to help you along the way.

CHANGING THE CURSOR

If you find that the normal cursor doesn't suit your liking, you may want to change it. In Photoshop's Preferences menu (*Command + K*) is a section called Cursors (*Command + 5*). Here you have the option to change the "Painting Cursor" from Normal Brush Tip to Standard, Precise or Full-Size Brush Tip. You can also create a hybrid cursor by using the Normal or Full-Size Brush Tip in conjunction with the "Show Crosshair in Brush Tip" option. Below the Paint Cursors section is an option for the Brush Preview color. This is the color that is displayed when modifying the brush shape with the on-canvas drag shortcuts: *Control + Option + Drag* to change the diameter, and *Control + Option + Command + Drag* to change the hardness.

Changing the cursor may help you gain better control of the brush.

PAINTING STRAIGHT LINES

Painting a freehand straight line is nearly impossible. Luckily, Photoshop has some features to help with this. By holding the Shift key while painting, your stroke will be constrained to 45° angles. Painting straight lines that aren't locked to 45° angles is just as easy. Start by clicking once on the beginning point of the line. Move the cursor to the end point, hold Shift and then click. A perfectly straight line will have been drawn between the two points.

Clicking to start a line and then holding Shift and clicking at the end of a line will paint a perfectly straight line between the two points.

PAINTING PERFECT CURVES

Photoshop's Paths palette allows you to stroke a path using the current brush's settings. This can be extremely helpful if you have a tricky curve or complex shape to paint. First, set up your brush. Then, select the path you wish to stroke; and in the Paths palette, *Option + Click* the Stroke path with the brush button. This will present you with a dialog box that allows you to set the tool you want to stroke with. You can even use the Simulate Pressure button to activate any control methods you have set on your brush.

Stroking a path with your brush gives you perfect control over the stroke's curvatures.

OTHER "PAINTING" TOOLS

Remember that the Brush Tool is not the only tool that uses brush settings. By customizing these other tools, you can create some very impressive effects. The other "Painting" tools include: Pencil, Eraser, Background Eraser, Clone Stamp, Pattern Stamp, Healing Brush, History Brush, Art History Brush, Smudge, Blur, Sharpen, Dodge, Burn, Sponge, Color Replacement and Quick Selection.

Keyboard Shortcuts

TOOL SELECTION

- **B**: Brush tool
- **Shift** + **B**: Rotate through Brush tools (i.e. Brush, Pencil and Color Replacement tools)
- **F5**: Show or hide Brushes palette

BRUSH SETTINGS

- **[**: Decrease brush diameter
- **]**: Increase brush diameter
- **Shift** + **[**: Decrease brush hardness by 25%
- **Shift** + **]**: Increase brush hardness by 25%
- **Digit Combination (with airbrush off)**: Set the brush's opacity
- **Shift** + **Digit Combination (with airbrush off)**: Set the brush's fill
- **Digit Combination (with airbrush on)**: Set the brush's fill
- **Shift** + **Digit Combination (with airbrush on)**: Set the brush's opacity
- **Option** + **Shift** + **'+'**: Next blending mode
- **Option** + **Shift** + **'-'**: Previous blending mode
- **,**: Previous brush
- **.**: Next brush
- **Shift** + **,**: First brush

- **Shift + .**: Last brush
- **Caps Lock**: Toggles between Precise and Normal cursors
- **Control + Click (inside canvas)**: Bring up the quick brush menu
- **Control + Shift + Click (inside canvas)**: Brush blending mode menu
- **Control + Option + Drag (inside canvas)**: Change the brush's diameter
- **Control + Option + Command + Drag (inside canvas)**: Change the brush's hardness

PAINTING

- **Shift + Drag**: Constrain the brush to 45°
- **Click, move cursor, then Shift + Click**: Draw a straight line from the first click to the second click

HELPER TOOLS

- **Option (hold)**: Temporarily switch to Eyedropper tool
- **Shift + Option (hold)**: Temporarily switch to Color Sampler tool
- **Command (hold)**: Temporarily switch to Move tool
- **Command + Option (hold)**: Duplicate and Drag layer
- **Space (hold)**: Temporarily switch to Hand tool

Unveiling Photoshop Masks

Tom Giannattasio

Design is a fluid and shifting process in which layers are constantly modified and tweaked. As complexity builds, so does the need for preserving data in a flexible way. **Learning non-destructive editing techniques** helps you produce documents that bend along with your creativity. **Photoshop Masks are the cornerstone of this process.** Not only do they preserve important pixel data, but they allow for the creation of flexible interface elements as well. In this article, we'll explore the technical aspects and creative advantages of incorporating masks into your workflow.

Photoshop offers five methods of masking: Pixel Masks, Vector Masks, Quick Masks, Clipping Masks and Clipping Paths, all of which define pixel opacities without affecting the original data. Each of them has its own pros and cons, and knowing which method to use is extremely important for creating clean, flexible and properly masked layers.

Pixel Masks

Pixel masks determine opacity values based on **a raster image with grayscale values that correspond pixel for pixel to the original layer.** This makes them ideal for masking complex photographic imagery (e.g. the hair on a model or leaves on a tree). Pixel masks allow 100 shades of gray, which correspond directly to opacity percentages. The ability to vary opacities is unique to pixel masks, making them an invaluable tool.

Pixel Masks are ideal for extracting complex photographic imagery. (Image Source)

While pixel masks can be easily modified, they aren't ideal for every situation. Because of their raster format, scaling them can cause unwanted artifacts and interpolated blurriness. Smooth curves and perfect edges can also be tricky to create when painting a mask. Under such circumstances, vector masks would be preferable.

Pixel masks should not be used when you might have to rescale.

CREATION

Creating a pixel mask is as easy as selecting the layer or layer group and clicking the “Add Layer Mask” button at the bottom of the layer’s palette. A second thumbnail will be added to the layer, giving you a preview of the mask. By default, this will be entirely white. However, if you happen to have a selection active when creating the mask, the selection will be used to define the grayscale values of the mask.

Once a mask is created, it can be edited as if it were any other pixel data by clicking on the mask’s thumbnail. You can then paint in black to hide areas or white to show them. The mask can also be tweaked using adjustments and filters such as Curves, Threshold, Unsharp mask and Gaussian blur.

Painting the mask black is much like using the eraser tool. (Image Source)

VIEW MODES

While creating a mask, there are a number of ways to view the mask data. *Option + clicking* on the thumbnail will display only the mask on the canvas; this is great for fine-tuning areas but doesn't allow you to see the actual layer as you work. If you'd like to see both the mask and the layer at the same time, you can view the mask as a Ruby overlay. Simply press \ with the layer selected to toggle the overlay on and off. The color and opacity of the overlay can also be changed by double-clicking the mask's thumbnail. Additionally, if you'd like to temporarily remove the mask, you can toggle it on and off by *Shift + clicking* on the mask's thumbnail.

Turning the mask off and the overlay on can help with fine-tuning. (Image Source)

CHANNELS

Every time a layer with a mask is selected, the mask is shown as a **temporary alpha channel in the Channels palette.** From here, you can save the channel for later use by dragging the channel to the “Create new channel” button at the bottom of the palette or by selecting “New Channel” from the fly-out menu. You can also change the mask’s Ruby overlay settings by double-clicking the channel’s thumbnail. Because a temporary channel becomes available whenever a masked layer is selected, you can use some keyboard shortcuts to toggle between the actual layer and its mask. Pressing *Command + * will select the mask and *Command + 2* will bring you back to the layer data.

A temporary channel is available whenever a layer with a mask is selected.

VECTOR MASKS

Vector masks pick up where pixel masks fall short. By defining the mask's shape using paths, vector masks provide **a superior level of finesse and flexibility**. They're ideal for defining shapes with **clean, crisp lines, such as interface elements.**

Vector Masks are ideal for masking crisp-edged objects. (Image Source)

The disadvantage of vector masks is that they are unable to vary pixel opacities; they are basically either 0 or 100. For this reason, many masking jobs require a hybrid implementation. By using a vector mask to define the solid edges and a pixel mask for the more complex areas or for varying opacities, you can effectively extract objects while maximizing flexibility.

CREATION

To add a vector mask to an existing layer, simply *Command + Click* the "Add Layer Mask" button at the bottom of the layer's palette. If a path is currently active, the mask will be created using it. Otherwise, the mask will be empty. Paths can then be added, subtracted or modified by clicking the mask's thumbnail.

Being able to create flexible interface elements is one of the best advantages of vector masks. Using the Shape Tool (U) set to Shape Layers allows you to quickly create a fill layer with a Vector Mask. These layers are far more flexible than a raster level and are perfect for creating buttons, rules and other elements that can be resized without interpolating data.

The flexibility offered by Vector Masks make them perfect for interface elements such as buttons.

VIEW MODES

By clicking on the Vector Mask's thumbnail in the the Layer's palette, you can show or hide the paths saved in the mask. These paths can also be accessed from the Path's palette, but only if the layer itself is selected. Toggling the mask on and off can be done by *Shift + clicking* the thumbnail.

PATHS

Much like how layer masks appear in the Channels palette, **a temporary work path would be displayed in the Paths palette when a layer with a vector mask is selected.** You can then save the mask by dragging it to the "Create new path" button at the bottom of the palette or selecting "Save Path" from the fly-out menu. This temporary path can be accessed at any time by first selecting the Path Selection tool (*A*) and then pressing *Enter*; it can be dismissed by pressing *Enter* again. You can also quickly create a selection from an active path by pressing *Command + Enter*.

APPLYING

Before a vector mask can be applied to a layer it must first be rasterized by right-clicking the vector mask thumbnail and choosing Rasterize Vector Mask. If the layer already has a pixel mask, the two masks will be composited together to create a single pixel mask. It can then be applied like any other layer mask (right-clicking the thumbnail and choosing "Apply Layer Mask").

Quick M asks

The Quick Mask mode allows you to **create a selection using pixel editing tools as opposed to the primitive selection tools.** This is a more logical approach to creating a complex mask with variable opacity. You can access this mode by clicking on the “Quick Mask” button in the Tools bar or by pressing Q.

Once in Quick Mask mode, you’ll no longer be editing the current layer. Instead, you’ll be editing a Ruby overlay that can be edited as if it were regular pixel data. By default, entering this mode will cover the entire canvas with a semi-transparent red color. You can then paint white to remove the overlay and black to add it back. The Quick Mask is essentially a more visual representation of a selection. Therefore, every area that you remove from the overlay is added to the selection.

Quick Mask mode allows you to quickly paint a selection. (Image Source)

OPTIONS

You can **modify how the Quick Mask mode is displayed** by double-clicking the “Quick Mask” button in the Tools bar. Here you can change the color and opacity of the mask as well as whether the mask color indicates masked areas or selected areas. Personally, I find painting selected areas more intuitive than painting masked areas, which is the default.

The Quick Mask Options menu allows you to change the color, opacity and target of the overlay.

SAVING

After creating a quick mask, you can **immediately apply it to a layer by creating a layer mask or save it for later use.** By selecting *Selection → Save Selection*, you can save your selection as a new channel or apply it to an existing channel. This allows you to come back to the selection at any time by *Control + clicking* the channel in the Channel's palette or by selecting *Selection → Load Selection*

Saving a Quick Mask creates a new channel.

Clipping Masks

You'll often run into situations in which multiple layers require the same mask. You could group the layers and mask the layer group, but that is not always ideal. Clipping masks allows for a layer simply to **adopt the opacity of an underlying layer.** This is extremely helpful when using adjustment layers; by clipping them to a layer, you can apply adjustments to a single layer without affecting those below it.

The easiest way to create a clipping mask is to ***Option* + *click* between the two layers in the Layer's palette when the clipping mask cursor appears.** Alternatively, you could press *Command + Option + G* to clip a layer to the one below it. Any number of layers can be clipped to one master layer, but a clipped layer can't be used as a clipping mask itself.

Clipping Masks are great for constraining Adjustment Layers. (Image Source)

Clipping Paths

Clipping Paths are a lot like Vector Masks except that they **apply to an entire document rather than a layer or layer group.** They are primarily used by print designers to specify uniquely shaped objects that are imported into a page layout program. The path is imported along with the image to ensure a crisp clean edge.

To create a clipping path, first be sure that you have a path saved; having a temporary Work Path does not suffice. You must select “Save Path” from the fly-out menu in the Paths palette if your path is not saved. Then, from the fly-out menu, choose “Clipping Path.” Your document’s appearance will not change, but if you were to import the document into Illustrator using the Place command, it would be clipped to the path.

Masks Palette

The Masks palette, introduced in CS4, adds some useful features to help with **creating and refining both pixel and vector masks.** For the first time, you can feather a mask and change its density without losing the original mask.

The Masks palette was a great addition to Photoshop CS4.

CREATE/VIEW BUTTONS

At the top of the palette are two buttons that can be used to select the layer mask or vector mask or to create one if one doesn't exist.

DENSITY

The density slider basically controls how strong the mask is. At 100%, fully masked areas will be completely transparent. When density is set to 50%, those same areas would be only 50% transparent.

The Density slider controls the strength of the mask. (Image Source)

FEATHER

Feathering the edges of a mask used to require applying a Gaussian Blur, which would destroy the original mask shape. With the Masks palette you can now **change the amount of feathering at any time while maintaining the original mask data.**

With the Feather slider, you can now change the mask's softness on the fly. (Image Source)

MASK EDGE

The Mask Edge menu provides some long-desired features that aid in **refining a mask's perimeter**. They come in extremely handy when the extracted object is still picking up color from the masked background.

Radius

The Radius setting is similar to feathering, but it retains some of the edge's crispness. This can be helpful with reducing awkward or overly sharp edges on complex shapes.

Contrast

Contrast simply modifies the contrast of edge elements, which helps crispen any soft edges. Using this in conjunction with Radius can help remove unwanted artifacts in the mask.

Radius and Contrast can be used to remove unwanted artifacts. (Image Source)

Smooth

Smooth simplifies the complexity of the mask's edges. This can be useful if you've painted the mask by hand and need to quickly clean up some rough edges.

Feather

This feather command is nearly identical to the Mask palette's primary feather command, but it restricts the blur more to the edge of the mask. The difference is slight yet noticeable.

Contract/Expand

The Contract and Expand slider allows you to grow and shrink the edges of the mask. This is extremely useful for reducing unwanted color fringes.

Smooth and Contract helps tighten up masks to reduce color fringes. (Image Source)

Preview Mode

At the bottom of the palette are five different preview modes that allow you to view the mask as a (1) selection with marching ants, (2) quick mask ruby overlay, (3) black matte, (4) white matte or (5) grayscale mask.

Check the mask in different views to ensure its quality. (Image Source)

COLOR RANGE

The Color Range menu is one of the most powerful ways to extract an image from an evenly colored background. With only a few clicks and adjustments, even the most complex object can be cleanly masked. For further details, see the “Techniques” section just below.

Techniques

Each masking job is unique and requires a different method of creation and refinement. However, some common techniques can drastically improve the efficiency and maximize the flexibility of your masks.

COLOR RANGE

When your masking task requires an object to be extracted from an evenly colored background (much like the video editing process of Chroma keying), **the quickest means is often the Color Range command.** First, use the Eyedropper Tool to select the primary color of the background. Then, you can use the “Add to sample” and “Remove from sample” tools to refine the color selection. The fuzziness slider lets you broaden the range of colors selected. If the color data is there to support it, this process makes short work of an otherwise tedious task.

The Eyedropper tools allow you to easily select the sky in the photo.

Color Range can make quick work of complex masks. (Image Source)

CHANNELS

A mask is often hiding in one of the layer's channels, just waiting to be unlocked. Depending on the image you're using, you may be able to find a channel with strong contrast between the target object and its surroundings. You may even want to try temporarily changing the color mode to Lab or CMYK to provide alternative channel options. Once you find a channel with a strong enough contrast, *Command + click* it to create a selection. Then, apply the selection as a layer mask. You'll then be able to tweak it as you would any other mask.

As the image below demonstrates, simply selecting a channel is not always sufficient for a clean mask. You may need to do some mixing with other channels.

(Image Source)

1. The original image has strong vibrant colors, making it a great opportunity to create a mask using channels.
2. The red channel has the foreground-to-background contrast, so we'll start there. We've copied and pasted it onto a new layer and then inverted it.
3. The green cup is still very prominent, so we've converted the blue channel to a layer and will use it to negate the green and red cups.
4. By setting the Blending Mode on the blue channel's layer to Multiply, we can effectively erase any extraneous white areas.
5. The two layers are then flattened and applied as a layer mask to the original image. This leaves us with a cleanly masked blue mug.

PIXEL/VECTOR HYBRID

Objects will quite often have a combination of sharp edges and soft feathered edges. In instances like these, using both a pixel and a vector mask may be best. One common example of this is extracting a figure. You can use the pen tool to draw all of the smooth edges along the figure's body and then use a pixel mask to paint in the fine details such as hair.

MULTIPLE MASKS

There may be times when you want to apply more than one mask to a layer. You could choose to apply the mask by right-clicking the layer and selecting Apply Layer Mask, after which you could apply a new mask. This, however, is not ideal because the data behind the mask will be lost.

A far better method is to **create a Smart Object from the layer and mask the new layer.** This allows you to apply two masks to one layer without losing data. In fact, if needed, you could repeat this process over and over.

Converting a layer to a Smart Object allows you to add multiple masks without losing data.

LAYER STYLES

If you have ever added a mask to a layer with layer styles, things may have gotten messy, especially if the mask had soft edges or varying opacities. This is because, by default, Photoshop uses a composite of the layer's opacity along with any masks on it to define the area used by the layer styles. This is desirable but can also be a nuisance. To counter the default behavior, open the Blending Options menu for the layer, and apply either "Layer Mask Hides Effects" or "Vector Mask Hides Effects."

Messes can often be tidied by using the "Layer Mask Hides Effects" option.

BLEND CLIPPED LAYERS AS GROUP

By default, Photoshop assumes that all layers in a clipping stack should be blended with the base layer before the base layer is blended with the layers below it. This makes sense sometimes, but other times you may need the clipped layers to adopt the shape of the base layer but not the blend mode. To prevent this behavior, open the Blending Options menu for the base layer (right-click the layer and choose “Blending Options”), and uncheck the “Blend Clipped Layers as Group” option. Now, each of the clipped layers will blend with underlying layers as if they weren’t clipped.

The “Blend Clipped Layers as Group” causes all clipped layers to blend together first and then blend with underlying layers using the base layer’s Blend Mode.

TYPE MASKS

Grouped with the Type tool in the Tools bar is the deceptively named Type Mask tool. It allows you to create type just like the regular type tool; but once committed, the type is converted to a selection. This selection can be converted to a layer mask but will no longer be editable. This is not ideal. If editability is important, you may want to create a regular type layer and use it as the base of a clipping mask. This is the only way to mask objects to the shape of type without losing the ability to edit the text. Perhaps someday Photoshop will let us create an editable Type Mask for a layer.

REMOVING EDGE FRINGES

Even after using the “Refine Edge” command in the Masks palette, you may find **random color fringes left along the edge of your mask.** This is where some manual brushwork comes in handy. The Paintbrush tool can be used here, but I recommend the Healing Brush, Stamp Tool or Smudge Tool because they will blend better with the subject.

First, create a new layer and clip it to the masked layer. Then, set your tool of choice to sample all layers. You can now select your sample area and paint the fringes out; the original layer data will be preserved. Often, changing the brush’s Blend Mode will help preserve the detail of the layer.

Color Fringes can usually be smudged or painted away on a clipped layer. (Image Source)

Keyboard Shortcuts

- ****
  View Layer Mask as an overlay
- **Command + **
  Set layer focus to Layer Mask
- **Command + 2**
  Set layer focus to layer data
- **Command + Option + **
  Create selection from Layer Mask
- **Command + Option + G**
  Make/Release Clipping Mask
- **A, then Enter**
  Activate/Dismiss Vector Mask
- **Command + Enter**
  Create selection from active vector mask
- **Command + Click Mask Thumbnail**
  Create selection from mask
- **Command + Option + Click Mask Thumbnail**
  Subtract mask from selection
- **Command + Option + Shift + Click Mask Thumbnail**
  Intersect mask from selection
- **Q**
  Toggle Quick Mask mode

INSIDE THE COLOR RANGE MENU

- **Option**
  Toggle the Reset button and the “Subtract from Sample” tool
- **Command**
  Toggle between the Selection view and Image view
- **Shift**
  Toggle the “Add to Sample” tool

Mastering Photoshop With Paths

Tom Giannattasio

Anomalously residing within the pixel-gridded world of Photoshop are a series of tools waiting to break out of the canvas' inherent squareness. Mastering these tools opens the stage for a higher level of flexibility, full of clean lines and non-destructive editing. Presented here is a guide to help you build proficiency, increase productivity and demystify the elusive world of Paths.

Creation

PEN TOOL

The Pen tool (*P*) – simple to use but difficult to master. It provides a precise method for creating paths, but requires an experienced hand to plot naturally flown curves. The power unlocked by mastering this tool is well worth the time needed to do so. While no amount of instruction can make you a Bezier master, below are some tips to keep in mind as you practice.

- Always use as few points as possible.
- Place an anchor at every acute or abrupt angle.
- Mid-curve anchors should be placed to comfortably accommodate curve transitions.
- To help set anchor points, you can turn on the 'Rubber Band' option – located in the drop-down next to the Custom Shape Tool button in the Pen's property bar. This setting will allow you to see the curve connecting the last anchor point with the mouse's current position.

Pen Tool with the Rubber Band setting

SHAPE TOOL

The Shape Tool (*U*) gives you access to standard geometric shapes as well as more complex presets with the Custom Shape setting. To define your own custom shape, select the shape using the Path Selection Tool (*A*), right-click inside the canvas, select 'Define Custom Shape…', name it and click OK. When using the Shape tool, more advanced settings – involving size, proportion, origin and pixel-snapping – lie hidden inside the drop-down next to the custom shape button in the tool's property bar.

Advanced Shape Tool settings

FROM TYPE

Converting type to a shape layer allows you to work directly with the anchors and curves of each letter and might even help improve your typesetting. This technique is most useful when you know the text won't change as you'll have to sacrifice the ability to edit it. With the type layer selected, right-click the layer in the Layers palette and choose 'Convert Type to Shape'. You now have access to the actual paths used to create the type. Thinking of type in this manner – as shapes instead of letters – can dramatically change the way you work. Kerning is now more intuitive; select a letter and move it – no pesky integers to set!

Type to Path conversion

FROM SELECTIONS

The editing of paths is far superior to raster data, especially when it comes to matters of upscaling. If working with a simple enough raster shape, why not convert it to a path? Select your shape. From the flyout menu in the Paths palette, select ‘Make Work Path…’ or Option-click the ‘Make work path from selection’ button at the bottom of the palette. Set the tolerance based on the complexity of your shape – the simpler the shape, the higher the tolerance. Click OK. You’ll notice that pixel to path conversion is not an exact science, but with some manual clean-up you can effectively recreate the original shape.

Selection to Path conversion

Implementation

MODES

When creating paths via the Pen or Shape tool, three settings – found in the tool's property bar – are available to define how the path should be used: Shape Layer, Paths and Fill Pixels. The Shape Layer setting will automatically create a new fill layer using the color and layer style set to the right. Paths will create a temporary Work Path accessible in the Paths palette, which makes it available for many different implementations (see below). Fill Pixels will paint raster data on the current layer, leaving no paths behind.

Pen tool set to create a Shape Layer

SHAPE LAYER

A Shape Layer is essentially a Fill layer with a vector mask. They can be created as a solid color, gradient, or pattern, though only the foremost is explicitly available. The easiest way to create a Shape Layer is to use a path drawing tool set to Shape Layer. However, using the tool set to Paths, allows you to specify the type of fill used. First, draw your path. Then, click the 'Create new fill or adjustment layer' in the Layer's palette and choose from Solid..., Gradient..., or Pattern.... Note that you can also create an adjustment layer with a Vector Mask in the same manner.

Creating a Gradient Shape Layer

VECTOR MASK

Vector Masks are often more preferable than a Raster Mask as they can be easily tweaked or scaled and still produce a crisp edge. With CS4′s introduction of the Masks palette, Vector Masks are more powerful than ever. Now, you can also feather the edges and adjust the density of a Vector Mask. The quickest way to create a Vector Mask is to select the layer you wish to mask. Then, select the path using the Path Selection Tool (A) and Command-click the ‘Add Layer Mask’ button at the bottom of the Layer’s palette.

Command-clicking to quickly create a Vector Mask

TYPE PATHS: IN AND ON

There are two ways paths can be used with the type tool: by defining the baseline and by creating a custom text box shape. Select the Work Path you'd like to use and with the Type tool (*T*) mouse-over the path. The dotted square on the cursor will change from a square to a curved line. Click on the path and you'll see that the type flows right along the path. After committing the type (*Command + Enter*), you can use the Path Selection Tool (*A*) to move the beginning and end points – indicated with an 'x' and a black circle respectively – or to flip the type from the top of the line to the bottom. If using a closed path, you can click inside of it to create a custom-shaped text box.

Type on a path

Type in a path

FILL AND STROKE

The Paths palette provides an interesting array of options to fill and stroke a Work Path. These options are available only when the current layer is a raster layer; you can quickly create a new raster layer using *Command + Option + Shift + N*. Then, by *Option + clicking* on either the 'Fill path with foreground color' or 'Stroke path with brush' button, you can open the Fill or Stroke dialog boxes. From here you can set the fill type, blending modes, transparency, feathering or stroke tool, which will adopt that tool's current settings.

Fill Path dialog box

Stroke tools

Boolean Operators

USE

To allow for more complex shapes, multiple paths can be grouped together into a compound path, on which Boolean operations can be set. These are accessible in the properties bar of the Path Selection Tool (*A*) and include: Add (*+*), Subtract (-), Intersect and Exclude. Add specifies a fill area and Subtract defines an area that is not filled; if only one path exists, the entire canvas is considered the fill area from which the shape is subtracted. Intersect sets the fill to areas included in all paths, while Exclude fills all path areas except those that overlap; these modes work only in compound paths.

Boolean Modes

STACKING ORDER

When creating compound paths, it's important to take note of the paths' positions in the stacking order. A compound shape with an Add path on the bottom and a Subtract on top will be completely different with swapped depths. A path's Boolean operator takes effect on all of the paths below it. Unfortunately, there are no commands or palettes to simply swap depths in Photoshop; you'll need to use a series of Cut (*Command + X*) and Paste (*Command + V*) to rearrange them.

Path Stacking Order

COMBINING

Combining paths can help reduce complexity by creating a single path from the perimeter of a compound path's fill area. To do so, select the paths to combine using the Path Selection Tool(*A*) and click the Combine button in the Tool Properties bar.

Reducing complexity by combining Paths

Importing/Exporting

IMPORTING

Though Photoshop provides vector tools sufficient for many basic tasks, it in no way compares to the ease and power of Illustrator. Fortunately, Adobe products work in unison. You can create your paths in Illustrator and easily import them by Copying (*Command + C*) and Pasting (*Command + V*) in Photoshop. In the Paste dialog box, select either 'Path' to import a Work Path or 'Shape Layer' to create a fill layer with the foreground color.

Path Paste dialog box

EXPORTING

In the occasion that you might need to translate your paths in the opposite direction, copy and paste will work in the same fashion as above or you can use Export → 'Paths to Illustrator...' to create a new Illustrator document with the same dimensions and positions as the current Photoshop document.

Paths to Illustrator...

Pixel Precision

The positions of anchor points and the lines connecting them do not correspond to the pixel grid of the image. This can lead to undesirable anti-aliasing, most noticeable along horizontal and vertical edges. To avoid these unclean edges, you can zoom in (*Command + '+'*) and use the Direct Selection Tool (*A*) to select and move the anchor points so that they lie on exact pixel coordinates; Pixel Grid (Show → Pixel Grid) can be very handy when doing this.

On- and Off-Pixel edge comparison

Keyboard Shortcuts

PEN TOOL (P)

- **Shift + P** – toggle between Pen Tool and Freeform Pen Tool
- **Shift** – constrains to 45° angles
- **Option** – change to Convert to Point Tool, used to set directional handles
- **Command** – change to Direct Selection Tool, used to move anchor points or stretch line segments
- **Command + Shift** – select multiple anchor points and segments
- **Command + Option** – change to Group Selection Tool, used to select entire paths
- **Command + Option + Shift** – select multiple paths
- **+** – set Boolean mode to Add
- **-** – set Boolean mode to Subtract

SHAPE TOOL (U)

- **Shift + U** – rotate through Shape tools
- **Shift** – constrain proportions
- **Option (while dragging)** – draw from center of shape
- **Option (before clicking, if set to create Shape Layers)** – temporarily switch to Eyedropper tool

- **Option (before and while dragging, if set to create Paths)** – set Boolean mode to Subtract
- **Option + Shift (before and while dragging, if set to create Paths)** – set Boolean mode to Intersect
- **Command** – change to Path Selection Tool, used to select and move paths
- **Command + Shift** – select multiple paths
- **+** – set Boolean mode to Add
- **-** – set Boolean mode to Subtract
- **Spacebar (while dragging)** – move the shape's origin

PATH SELECTION TOOL (A)

- **Shift + A or Command-click inside document window** – toggle between Path Selection Tool and Direct Selection Tool
- **Shift + Click** – select multiple
- **Shift + Drag** – move and snap to 45° angles
- **Command + Option** – Convert to Shape Tool
- **Command + Option + Shift** – Convert to Shape Tool (constrained to 45° angles)
- **Option** – change to Group Selection Tool
- **Option-Click-Drag** – Duplicate selected path
- **Arrow key** – Nudge selected path or anchor point 1px
- **Shift + Arrow key** – Nudge selected path or anchor point 10px

- **Option + Arrow key** – Duplicate selected path or anchor point and move copy 1px
- **Option + Shift + Arrow key** – Duplicate selected path or anchor point and move copy 10px

TARGET PATH

- **Enter** – Dismiss Target Path
- **Command + Enter** – Selection from target path
- **Command + Option + Enter** – subtract path area from current selection
- **Command + Option + Shift + Enter** – intersect path area from current selection
- **Command + T** – Free Transform Path
- **Command + Shift + T** – Free Transform Path Again
- **Command + C** – Copy path or anchor point with neighboring points
- **Command + X** – Cut path or anchor point with

The Ails Of Typographic Anti-Aliasing

Tom Giannattasio

As printed typography enjoys the fruits of high-DPI glory, proudly displaying its beautiful curves and subtleties, its on-screen counterpart remains stifled by bulky pixels, living in a world of jagged edges, distorted letterforms and trimmed serifs. Until display manufacturers produce affordable 200 or 300 PPI monitors, we'll have to rely on software advances to fix these problems.

Enter **anti-aliasing**: the next best thing to a world of higher-resolution monitors. The concept of anti-aliasing is fairly simple: add semi-transparent pixels along the edges of letterforms to smooth the appearance of the "stair-step" effect.

However, many factors and technologies determine the actual effectiveness of the process: hinting, subpixel rendering, software capabilities and operating system specifications, to name a few. Here, we'll look at what you as a designer can do to improve the results of anti-aliasing with Photoshop, Flash and CSS. Plus, we'll explain the constraints of hardware, browsers and operating systems.

Technologies

ALIASED VS. ANTI-ALIASED

It takes only a quick glance to realize that anti-aliasing is extremely important to making text legible. With few exceptions, anti-aliased text can dramatically reduce eye strain, not to mention that it renders glyphs much closer to their intended design. Because of this, **designers must decide *how*, not *if*, anti-aliasing should be used**. This decision is based on a number of factors that one has to consider in the process from design to delivery.

42pt “Goudy Oldstyle Bold”: aliased and anti-aliased versions

FONT HINTING

Most text rendering engines rely heavily on hinting to determine exactly which areas of a glyph should be smoothed. **Font hinting, or instructing, uses tables of mathematical instructions to align letterforms to the pixel grid and to determine which pixels should be grayscaled**. Though most software provides auto-hinting using standardized algorithms, ideally the process would be done manually by the type designer and embedded in the file.

Put simply, these instructions work by modifying the position of structurally important points, such as those found along splines or at the base of stems, and aligning them at pixel boundaries. Intermediate points are then repositioned based on their relationship to the primary points. Using an open-source font editor, such as FontForge, allows you to view and edit a font's hinting information. See how much work goes into producing a clear glyph; your appreciation of type designers and font engineers will certainly increase.

Hinted and unhinted type both have their pros and cons, leaving the designer to choose between legibility and typeface integrity.

0	40	NPUSHB
1	42	66
2	00	0
3	73	115
4	6c	108
5	6b	107
6	04	4
7	6f	111
8	65	101
9	79	121
10	4f	79
11	51	81
12	4a	74
13	22	34
14	29	41
15	25	37
16	1b	27
17	42	66

Viewing the hints for Goudy Oldstyle's "H" using FontForge.

SUBPIXEL RENDERING

Every pixel on a standard monitor consists of three components: a red, a green and a blue. The brightness of each of these sub-pixels is controlled independently, and because of their small size, our eyes blend the three into one solid-colored pixel. Typical anti-aliasing sets even values for each of these subpixels, resulting in full grayscale pixels. **Subpixel rendering exploits the individuality of each single-colored component and uses it to increase the perceived resolution of the monitor**. This allows a pixel to take on visual weight from neighboring pixels, thereby allowing type to be smoothed in smaller increments. Rendering the type in this manner can produce subtle color shifts visible along the edges of glyphs.

Subpixel rendering relies on a perfectly aligned grid of pixels, which makes LCD flat panels the only type of monitor on which this technique works consistently. CRT monitors suffer from inaccuracies and oddly distributed pixels, making subpixel rendering extremely difficult to pull off. Even LCD monitors have variations in their subpixel arrangement that must be accounted for; some monitors are arranged in the order of RGB, while others are ordered BGR.

Subpixel rendering triples the perceived resolution by setting each color component separately.

Subpixel rendering produces more desireable results than standard rendering, but adopts color fringes.

Input

As designers and developers, we have limited control over how type is ultimately seen by the end user, but by using the proper delivery method, we can ensure an optimized presentation. That said, we'll look here at the three most common ways in which text is sent to the user: HTML, images and sIFR. Each of these methods has an ideal use that, when properly implemented, can dramatically increase legibility and thus the overall user experience.

HTML TEXT

HTML text undoubtedly accounts for the majority of text found on the Web. Until recently, designers had absolutely no control over anti-aliasing with client-side technologies. CSS 3 introduces two new ways to control how HTML text is delivered: font-smooth and @font-face.

font-smooth

Font-smooth allows you to control *when* smoothing is used but not *how* it's used; the anti-aliasing method is still controlled by the user's environment. This setting is not widely supported yet but may prove useful by allowing us to turn anti-aliasing off at small point sizes — where type often becomes blurry. It may become doubly useful when more complex and non-browser-safe fonts are embedded with the new @font-face rule.

@font-face

The @font-face rule is an exciting new feature of CSS 3 that designers have been waiting years for. Although we've been able to add obscure typefaces to font stacks for quite some time, a large majority of users don't have high-end fonts on their local machines and end up with a typical Web-safe font (e.g. Times New Roman substituted for Adobe Garamond Pro). By allowing the browser to import a font file from a URL, we can now serve the user any font we'd like without relying on their font library. This means that we can serve not only more unique fonts but also those that are better hinted and more legible.

Despite the promise this feature holds to create a more beautiful world of online typography, we may still see designers opt for fonts like Verdana, which have been designed and hinted specifically for on-screen viewing. Some of our favorite fonts from the print world *just look bad* when rendered on the screen, especially at smaller text sizes. Surely we'll see new industry segments arise as a result of the support of @font-face, including an influx of browser-hinted typefaces made available through services such as typekit.

Bickham Script Pro embedded using @font-face and rendered in Safari 4 and Firefox 3. Notice the OpenType swashes and ligatures supported in Firefox 3!

TEXT AS IMAGE

Serving text as an image may have limited uses, but it allows you to fine-tune every letter if necessary. Photoshop provides five pre-set anti-alias settings, which determine pixel values using different algorithms in conjunction with the document's pixel grid. Unfortunately, **none of these settings allow for subpixel rendering**, but by using the Free Transform option to nudge the layer's position, you can effectively **force the algorithms into rendering cleaner**. Each setting allows a different amount of origins, and some only produce variations when translated along the x-axis. Below is a table of available transformations.

	X-TRANSLATIONS	Y-TRANSLATIONS
NONE	1	1
SHARP	2	1
CRISP	4	1
STRONG	32	16
SMOOTH	4	4
SHAPE LAYER	32	32

None

Aliased text, created using the None setting, has a very limited use and typically looks best between point sizes of 9 and 18. Sizes lower than this range will result in unidentifiable characters, and larger sizes will lead to increased character weight and overly jagged edges. Depending on the font, **sometimes two different point sizes will render at the same height, causing a shift in letter spacing, width and x-height**. For example, 14pt Arial renders 10 pixels high with an x-height of 8 pixels. Arial at 13pts also sits 10 pixels high but has an x-height of only 7 pixels — a slight but very perceivable difference. When tightly tracked, this setting may also require manual kerning, because some letters will sit pixel to pixel against each other.

13pt and 14pt Arial render with the same cap height but different x-heights.

Sharp

ORIGINAL OUTLINES

Anti-Aliasing

PHOTOSHOP'S SHARP SETTING

Anti-Aliasing

The Sharp setting uses very tight grid-fitting and produces sharp, if not too sharp, type. The plotting of pixels with this setting is very similar to how the None setting plots them but allows for a certain degree of smoothing. In fact, if pixels are set atop one another, you can actually see that a majority of solid pixels carry over from None to Sharp. While the cap height and x-height typically remain the same, you might see an increase in character weight and width. **Sharp has a tendency to completely cut subtle shape variations from rendering and sometimes causes inconsistent letterforms**, so if typeface integrity is important to you, you may want to try a different setting.

Crisp

ORIGINAL OUTLINES

Anti-Aliasing

PHOTOSHOP'S CRISP SETTING

Anti-Aliasing

The Crisp setting maintains much of the font's original weight and curvature but cleans up some of the awkward pixels created by light serifs and thin strokes — which is especially useful for larger point sizes. With the Crisp setting, however, you sacrifice the ability to nudge the layer on the y-axis.

Strong

The Strong setting is notorious for adding unnecessary weight to a typeface, but it provides the most freedom with translating the origin, with 32 x-axis variations and 16 on the y-axis. The variety of origins with this setting can come in very handy when working with complex letterforms. Strong may also be useful when working with a typeface that has very thin strokes.

Subtle animation showing the 32 anti-aliasing origins at 36pt, 18pt and 12pt.

Smooth

The Smooth setting is the closest to unhinted anti-aliasing and therefore **remains truest to the original glyph shape**. This algorithm is best used on medium-sized to large type, because it tends to render very light and often blurry at smaller point sizes. If used with an appropriate typeface at a proper size and if the origin is properly adjusted, this setting can produce a beautiful balance between crispness and letterform fidelity.

Shape Layer

If Photoshop's hinted algorithms all produce undesirable results, you may want to attempt using unhinted anti-aliasing by way of converting the type to a shape layer. This allows you **access to the original outlines of the font**, which draw values based on the percentage of the pixel enclosed in the shape. What you sacrifice in editable type, you make up for in origin transformations: 32 on both the x- and y-axes. Though usually a last resort, don't rule out the possibility of using a Shape Layer; it can often produce much better results than Photoshop's algorithms.

Fractional Widths

Another, more veiled, setting that sometimes helps with anti-aliasing type at small point sizes is the Fractional Widths option located in the Character palette's fly-out menu. With this setting turned on, the character spacing is set to varying fractions of pixels. This is ideal for auto-kerned type at large sizes but tends to bump the type either too close together or too far apart at smaller sizes. Turning this option off will round all character spacing to whole pixel values, which may help better space the problematic type. This is a hit-or-miss option, so use it wisely.

Decimal Point Sizes

Typophiles might cringe at the idea of using a decimal point size, but when designing for digital media, standard point sizes don't always conform to the pixel grid. By using decimal point sizes and either the Smooth or Strong anti-alias setting, you can usually bring a blurry typeface back into focus. Please note that I am not condoning the use of vertical or horizontal scale!

Using decimal values can dramatically improve anti-aliasing results, as seen above. Top: 16pt Goudy Oldstyle with Strong Anti-Aliasing. Bottom: 16.5pt Goudy Oldstyle with Strong Anti-Aliasing.

SIFR TEXT

Using sIFR to replace headers with a block of Flash brings benefits beyond the obvious. Yes, it solves the problem of having to use CSS image replacement techniques to provide a wider array of fonts, but it also allows incredible control over how the type is anti-aliased. Particularly useful are the sharpness and thickness settings, which control the edges of glyphs. (If only Photoshop had these settings!) You can set and tweak a number of settings to fit your implementation; and they can be controlled by passing keyword arguments inside the *sifr-config.js* file. These settings include:

sharpness (number)

A value between -400 and 400, which determines how sharp (positive number) or soft (negative number) the edges of the glyphs will be.

thickness (number)

A value between -200 and 200, which sets the thickness of the glyph edges.

gridFitType (string)

Possible values are: “none,” “pixel” and “subpixel.” This specifies how prominently the horizontal and vertical lines are fit to the monitor’s pixel grid. “Pixel” and “subpixel” usually produce the best results.

antiAliasType (string)

This is set by default to “advanced,” which allows the anti-alias settings above to be applied. It can also be set to “normal,” but this option limits sIFR’s rendering capabilites to accommodate earlier versions of Flash Player and overrides any of the properties above.

sIFR: Default Anti-Aliasing

sIFR: Custom Anti-Aliasing

sIFR allows you to precisely customize your anti-alias settings. Notice that the custom setting is slightly thinner and crisper.

Output

DISPLAYS

Because very few people have monitors with resolutions higher than 100 pixels per inch (PPI), we have to rely on software to trick our eyes into thinking that the resolution is greater than it really is. Some advances are being made by display manufacturers, but they are still beyond the average Web surfer's budget.

A typical LCD monitor (which you're probably reading this on) has a dot pitch of around .20 or .30 millimeters. New technologies, such as the Ferro Liquid Crystal display are touted to reduce that number to .012 millimeters. Bringing this technology to the mainstream would bring tremendous advantages to the world of design and on-screen reading. However, until they become affordable for the average consumer, we'll be relying on software advances.

OPERATING SYSTEM

Microsoft and Apple have both delivered technological advances in the world of anti-aliasing, but they have somewhat different approaches. The current versions of both operating systems use anti-aliasing and subpixel rendering. Both vendors have dramatically increased legibility within their operating systems, but controversy has arisen over the aesthetics and legibilty of each. Microsoft's entry in the competition — which is characterized by tight grid-fitting — is aptly named ClearType. By forcing characters tightly into the pixel grid, ClearType increases contrast along the edges of glyphs and renders more crisply.

Distinctly different is Apple's Quartz 2D, which puts emphasis on maintaining the shape and integrity of the typeface. This certainly makes sense, given the high proportion of designers who work on Macs. But Quartz rendered type often appears blurry, which can cause eye strain with extended reading.

Windows Vista and Window XP both use Microsoft's ClearType rendered either by Windows Presentation Foundation or Graphics Device Interface; both handle text in a very similar fashion, though WPF doesn't snap horizontally to the pixel grid. Windows XP actually comes defaulted to monochromatic anti-aliasing.

But ClearType can be turned on by going to *Control Panel* → *Appearance and Themes* → *Display*, clicking on the "Appearance" tab, selecting "Effects…" and changing the drop-down from "Standard" to "ClearType." The operating system itself allows for very little customization of ClearType; you basically choose between on and off. Microsoft's ClearType Tuner PowerToy, though, allows some control over how it renders. Windows 7 brings a new rendering platform, named DirectWrite, that introduces subpixel positioning and y-direction anti-aliasing. As seen in this presentation, the advances made with DirectWrite are quite impressive and sure to be adopted by other vendors.

Apple's Quartz 2D now renders type using Core Text, which has recently replaced Apple Type Services. The Quartz 2D displays type much closer to the typeface's original design, which is similar to how you might expect to see it in print form. While this seems like a good idea from a design perspective, it doesn't hold up with legibility, at least not on common LCD screens. Quartz text could conceivably appear much better if we were using higher-resolution monitors. Because Apple has complete control over both the operating system and the hardware that it runs on, perhaps a 200 PPI iMac is just around the corner. We can hope!

BROWSERS

The most current browsers today all inherit the anti-alias settings of the operating system. But with one anomaly. Firefox 3 in Mac OS X seems to inherit the operating system's settings but also seems to apply more precise grid-fitting and kerning. Perhaps Mozilla is attempting to improve on Quartz's blurry rendering.

Unfortunately, we have no way to control or even tell how the user's browser will render text. What we can do is understand the nuances of each browser and make sure that we deliver a suitable presentation across all viewing platforms. Below is a list of browser capabilites and type samples to help you gain some insight into how they handle anti-aliasing.

Windows XP and Vista:

- **IE6, IE7 and IE8:**

  STANDARD
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

  CLEARTYPE
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

- **Firefox 2 and 3:**

  STANDARD
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

  CLEARTYPE
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

- **Safari 4:**

  STANDARD
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

  CLEARTYPE
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

- **Chrome**:

  STANDARD
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

  CLEARTYPE
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

Mac:

- **Firefox 2 in OS X:**

  STANDARD
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

  AUTOMATIC
  13px Verdana: How quickly daft jumping zebras vex.
  13px Georgia: How quickly daft jumping zebras vex.

- **Firefox 3 in OS X** (inherits from operating system but with slightly enhanced kerning — most noticeable in the word “Georgia”):

  STANDARD

  13px Verdana: How quickly daft jumping zebras vex.

  13px Georgia: How quickly daft jumping zebras vex.

  AUTOMATIC

  13px Verdana: How quickly daft jumping zebras vex.

  13px Georgia: How quickly daft jumping zebras vex.

- **Safari 4 in OS X:**

  STANDARD

  13px Verdana: How quickly daft jumping zebras vex.

  13px Georgia: How quickly daft jumping zebras vex.

  AUTOMATIC

  13px Verdana: How quickly daft jumping zebras vex.

  13px Georgia: How quickly daft jumping zebras vex.

- **Opera:**

  STANDARD

  13px Verdana: How quickly daft jumping zebras vex.

  13px Georgia: How quickly daft jumping zebras vex.

  AUTOMATIC

  13px Verdana: How quickly daft jumping zebras vex.

  13px Georgia: How quickly daft jumping zebras vex.

Conclusion

Though many advances have been made in rendering on-screen typography, most have been aimed at treating the symptoms and not the disease. Until everyone has a 200 PPI monitor sitting on their desk, it will be up to designers and developers to use the proper technologies to ensure legibility without degrading the design of the typeface.

Mastering Photoshop Techniques: Layer Styles

Tom Giannattasio

Layer Styles are nothing new. They've been used and abused again and again. Despite their ubiquity, or perhaps because of it, many designers do not yet realize the full potential of this handy menu. Its beauty lies in our ability to create an effect and then copy, modify, export, hide or trash it, without degrading the content of the layer.

Below we present, step by step, several practical techniques to help you refine your designs, increase productivity and reduce layer clutter.

Download the source files (.zip, 1.6 Mb).

fx

The Bump Map Effect

“Wait, what?” you exclaim, “There’s no bump map effect in the Layer Styles menu!” That’s true, but by combining Pattern Overlay and Bevel and Emboss, we can achieve a textured, bump-mapped surface with a controllable light source.

This technique requires two images: one for texture and color, and the other to serve as a depth map. The depth map needn’t have any hue because it determines depth based on a composite value, black being the lowest, white the highest. In some cases, you may be able to use the same image for both, but in our example we’ll use completely different ones.

STEP BY STEP

1. We’ll start by creating our bump map pattern. **Open the *diamond-plate.psd* file.**

2. Inside you’ll find a number of white shapes on a black background. **Create a pattern** from this document: Select All `(Cmd/Ctrl + A)`, then *“Edit”* → *“Define Pattern.”* Name it “diamond plate bump map” and click okay.

Creating the diamond plate pattern.

3. Now, **open the *start.psd* file**.

4. **Repeat step 2** to create a pattern from the “patchy gray” layer. This will be used later to add texture to our background.

Defining the texture pattern.

5. After creating the pattern, **delete the “patchy gray” layer**. It’s no longer needed.

6. Use the Rectangular Shape tool to create a shape layer about 20 pixels wider and 20 pixels higher than the canvas. Change the color of this layer to a dark, brownish, chromatic gray.

Creating the shape layer for our background.

7. Be sure that the shape layer doesn't have any Layer Styles already applied to it (Photoshop will often apply the most recent Layer Style automatically). Then, **begin the new Layer Style by adding a Pattern Overlay**.

Adding a Pattern Overlay effect.

8. **Choose the “patchy gray” pattern from the pattern picker, and change the Blend Mode to Soft Light.** This will add the texture to our background layer.

Adding a pattern overlay effect.

9. Next, **add a Bevel and Emboss, along with the Texture effect**. This time, change the Texture effect's Pattern to the "diamond plate bump map" pattern created in step 2. We now have a grungy diamond plate background.

Applying the Bevel and Emboss texture effect.

10. As with most Layer Style effects, the default values are rarely ideal. **By tweaking the Bevel Type and Size, Gloss Contour, Highlights, Shadows and Light settings** you can achieve some dramatic results.

Tweaking the Bevel and Emboss settings.

11. With a few extra effects, you can shape the background layer even more. The example has a **Gradient Overlay** to simulate reflected light by darkening certain regions of the image.

Using the Gradient Overlay to darken some regions.

12. You may notice that the highlights from the Bevel and Emboss filter all seem to have the same value. This is because the Bevel and Emboss effects are very high on the Layer Style's stacking order. To darken the highlights that lie outside our main light source, simply **paint a Layer Mask using the Brush tool**.

Painting a mask to increase the appearance of light in the background.

We now have a textured, bump-mapped background that is completely dynamic; everything about it can be modified easily from within the Layer Styles menu. Consolidating complex imagery into one dynamic layer like this can reduce layer clutter dramatically and allows you (and whoever else may be using the file) to easily find and modify things. Now, let's move on to creating our icon.

3-D Modeling

By combining some interior effects, we can use the Layer Styles menu to create simulated 3-D objects: great for icons, buttons and other interface objects. We'll now model the base of the round icon in the example image using a single layer.

STEP BY STEP

1. Begin by creating a circular shape layer with a rich red fill.

Creating the shape layer for the icon's base.

2. As is often the case when modeling a 3-D shape, **let's begin by adding a Gradient Overlay to our Layer Style**. A white-to-black Radial-styled gradient set to Linear Burn works best for our implementation. Be sure the white area of the gradient is at the origin.

Adding Gradient Overlay set to Linear Burn.

3. We now have a dramatically shaded sphere with a head-on light source. By **decreasing the opacity of the gradient**, we can flatten the shape to a more concave button.

Reducing the Opacity for a subtler effect.

4. Let's also move the direction of the light to the upper-left. While leaving the Layer Style menu open, move the mouse over the image itself (the Move Tool icon should appear). Simply click and drag the epicenter of the gradient to the upper-left of the shape layer.

Repositioning the gradient within the Layer Styles menu.

5. While Bevel and Emboss may seem like more logical tools, you can often get a cleaner, more customizable beveled look by using a combination of other effects. First, **add a black Inner Glow, set to Multiply**. Adjust the Choke, Size, Opacity and Contour until you have a softened edge inside the shape.

Adding a Glow to darken the edge of the base.

6. Like for any well-rendered spherical surface, we have to add some reflected light in our shadow region. This is easily achieved with the **Inner Shadow effect**. Change the color to white and the Blend Mode to Linear Dodge. Adjust the angle so that it appears in the lower-right of our shape. Tweak the Contour, Distance, Size and Opacity to create a subtler effect.

Adding subtle reflected light using Inner Shadow.

7. To enhance the feeling that the shape is part of the document's "environment," we can add some effects to interact with the background. **Drop Shadow** is usually the easiest tool to use for this. Massage the settings until everything feels right.

A simple Drop Shadow goes a long way.

8. Using the **Outer Glow** effect, we can simulate the reflected red light that our background image would absorb if this were an actual setting. Change the glow's color to a darker red, and change the Blend Mode to darken. Again, work with the Size and Opacity settings to create the desired effect. This is one of those effects that, when used correctly, no one should notice because it just looks natural.

A red Glow to add more "environment."

Please notice that Layer Style gradients can't be dithered, which can make them lower quality than their Gradient Layer and Gradient Tool counterparts (— *Marc Edwards*).

Diffuse vs. Specular Light

Now, our icon reflects a simulated **diffuse light**, which gives it the look of a matte-finished surface. If you prefer a glossier appearance, you can easily create a **specular highlight** using (what else?) Layer Styles.

STEP BY STEP

1. **Duplicate the current shape layer `(Cmd/Ctrl + J)`.**
2. **Clear the new layer's Layer Styles**: right-click the layer in the Layers palette and select "Clear Layer Style."

3. We also need to modify the shape of the layer to give the reflected light a sharper edge. Using the Direct Selection Tool (A), select the shape path in the layer's vector mask. Copy it `(Cmd/Ctrl + C)` and paste it `(Cmd/Ctrl + V)` above the current path. Change this path's mode to Subtract from shape area *(-)*. Then move the shape down and to the right to create a crescent shape. You may also want to make the negative shape larger to create a more natural inside curve: simply Free Transform `(Cmd/Ctrl + T)` and then scale the shape up.

Modifying the shape of the specular highlight.

4. Because we need this layer only for its Layer Styles, we can **set its Fill Opacity to 0%**.

Dropping the layer's fill to 0%.

5. We also want this layer to inherit the Layer Styles of the underlying layer, so **create a Clipping Mask on the new layer (`Cmd/Ctrl + Option + G`)**.

Creating a Clipping Mask to inherit effects.

6. Now, **begin the Layer Style with a Gradient Overlay**. Use the default black-to-white gradient, and set the Blend Mode to Screen. Knock the Opacity down to about 50%, and change the angle to about 115°. You may need to change the positioning of the gradient, which you can do by clicking and dragging inside the document window, just as you did in the 3-D modeling section.

Setting the Gradient Overlay to Screen.

7. This is a good start for the highlight, but it still looks somewhat unnatural. Using a transparent inside stroke, we can shrink the perimeter of the interior effects. **Add a Stroke effect to the layer and drop its opacity to 0%**. Change the position to Inside, and work with the size slider until the highlight begins about where the darker inner glow ends on the underlying layer (the example image uses 5 pixels).

Using a 0% Inside Stroke to shrink the perimeter of interior effects.

8. To add a more dynamic look to your highlight, you can **add a white Inner Shadow set to Screen** with a custom contour. Tweak the distance and size settings to finish off the effect.

The Inner Shadow creates a more dynamic specular reflection.

X-Ray Vision

STEP BY STEP

To create the die-cut type inside our icon, we could turn the text layer into a shape layer and use the paths to mask away areas from the base. However, this would result in degenerated content; we would no longer be able to modify the type. Instead, we'll simulate a mask using the **Knockout Blending Option**. This will also allow us to apply custom effects to the cut-out area.

1. **Create a new Type Layer with the text "fx"**, and position it within the circular base. The example uses 120 point Garamond Bold Italic.
2. Drop the Fill Opacity to 100%.

3. **Begin your Layer Style by adding an Inner Shadow**. Increase the size, and increase the opacity to about 90%. You may also want to modify the distance and contour to your liking.

The beginnings of the die-cut effect.

4. We now have the beginnings of a die-cut effect, except that the text still shows the base below it. To fix this, **go to the Blending Options section in the Layer Styles menu. Change the Knockout from None to Shallow** (this setting samples pixels from the layer directly beneath the current layer's group). Because our text layer doesn't belong to a layer group, it samples instead from the Background layer. (Using a Deep Knockout would always sample from the Background layer, regardless of the layer's group.)

Shallow Knockout samples pixels from the layer directly beneath the current layer's group.

5. To get the text layer to sample from our diamond plate layer, start by clicking “Okay” to close the Layer Style menu. Select the text layer and both of the buttons that make up the base, and group the layers `(Cmd/Ctrl + G)`. As you can see, the “fx” shapes are now drawing pixels from the textured layer directly below the new layer group.

Grouping the icon so that the Knockout samples from the diamond plate layer.

6. The knockout effect is very convincing, but the type still feels detached from the base. Let's add a beveled effect to simulate the surface quality of the base. **Start by adding an outside Stroke with a size of 2; then drop the opacity to 0%.** This doesn't achieve anything but is necessary for the next step.

7. **Now add a Bevel and Emboss effect. Change the Style to Stroke Emboss and Technique to Chisel Hard.** This will apply the bevel's lighting effects within the stroke area created in the step above. Modify the settings to achieve a subtle and smooth edge.

Adding a Stroke Emboss.

8. Let’s take the bevel one step further by adding a thin specular highlight to the bottom-right edges of the shape. We can use a white Drop Shadow effect, set to Screen, to add a bright highlight just at the edge of the bevel. You’ll want to modify the distance and size to give the highlight a sharp edge.

Adding a thin specular highlight using a Drop Shadow.

9. Finish off the Layer Style with more shading within the die-cut letters by **adding a simple black-to-white Gradient Overlay, set to Multiply**.

Finishing off the die-cut.

Quick Tips

Despite frequent misuse, the Layer Styles menu really is a powerful tool that every designer should learn to work with. Not only does it provide a level of speed and control not easily found through other means, but it provides invaluable flexibility. Our example shows how a multi-dimensional icon and a completely dynamic background can be consolidated within four simple Shape layers, allowing them to be easily modified, reused and repurposed throughout your designs. Below are a few extra tips to remember when working on your next project.

EFFECTS STACKING ORDER

You may have noticed sometimes that an effect isn't visible when another effect is being used. For example, a Color Overlay seems to override a Gradient Overlay. This is because of the Layer Styles Stacking Order. Just as with the Layer's Palette, one layer will cover another that is lower down in the stacking order. Unfortunately, the Layer Styles menu doesn't allow you to rearrange the order of effects. One way around this (even if you sacrifice the ability to edit) is to use Create Layers, which turns all of your Layer Style effects into actual layers that you can move.

Interior Effects Stacking Order:

- Stroke
- Bevel and Emboss
- Inner Shadow
- Innger Glow
- Satin
- Color Overlay

- Gradient Overlay
- Pattern Overlay

Exterior Effects Stacking Order:

- Stroke
- Outer Glow
- Drop Shadow

NON-COLOR-SPECIFIC STYLES

Though not always possible, you may want to use black, white and grays for your effects. Using monochromatic colors in conjunction with the proper Blend Mode allows you to create styles that are non-color-specific, meaning you can modify the color of the actual layer, and your Layer Style will update appropriately.

SCALING EFFECTS

There may be times when you've created a Layer Style that looks great at the original size, but when the shape is increased or decreased, your beautiful style is destroyed. Fortunately, Photoshop provides a method to adjust styles that are out of whack. Simply choose *Layer* → *Layer Style* → *Scale Effects*, and then input the percentage you need.

INCONSPICUOUS MENU OPTIONS

A number of hidden commands are available to you from within the Layer Styles menu. Depending on the effect, you will have access to either the Hand tool or the Move tool by simply mousing over the document window. The Hand tool allows you to move the document around just as you would outside the Layer Styles menu, and the Move tool repositions the current effect and updates the settings automatically. When using the Move tool, you can still access the Hand tool by holding the space bar. While using either of the tools, you can zoom in and out by holding `Space + Cmd` or `Space + Option` respectively. Don't forget, as with most other menus in Photoshop, holding "Option" will change the "Cancel" button to a "Reset" button, allowing you to undo any changes.

Establishing Your Grid In Photoshop

Steve Schoeffel

Creating a grid is typically one of the very first things you do when starting a design comp. After all, it provides the basic structure on which the rest of your design will lie. In this article, we'll provide two different methods for efficiently establishing a grid. These methods enable you to quickly and smartly form a grid so that you can spend more time designing.

Method 1

The first method uses GuideGuide by Cameron McEfee to set up vertical columns. This Photoshop plugin is said to be in beta, but from my experience with it everything works perfectly well, and there is even talk of the release of GuideGuide 2, which will include more features. Instructions on installing it can be found on the GuideGuide page. There is also a video tutorial on using it that was put together by Russell Brown at Adobe.

SET UP YOUR GRID IN 5 SECONDS

1. Determine the margins, number of columns and gutter widths. Then click “Create Guides.”

2. If the canvas for your design comp is wide, do the quick math so that the margin lengths allow for the grid to be constrained to your 960 pixels. For example, if the canvas is 1200 pixels wide, then the left and right margins would be 120 pixels each.

An example of 12 columns with 20-pixel gutters and margins set to 120 pixels.

You can also set a baseline grid this way, but you'd end up with a lot of guides. A better option might be the method featured on a Method & Craft video by Mike Precious...

METHOD & CRAFT'S EXTENSIBLE BASELINE GRID

Here is a brief summary of the steps for setting up an extensible baseline grid.

1. Establish the grid's baseline value, then create your pattern template. The baseline grid is determined by the leading (or line height) of the body text. For example, if the main body copy of your design is set in 13-point Helvetica, with the leading at 18 points, then you would set up an 18-pixel baseline grid.
2. Create a Photoshop file that is the height of your baseline grid, fill the bottom pixel, and leave the remaining pixels transparent. In this case, the dimensions of your canvas would be 1-pixel wide and 18-pixels tall.

3. “Select All,” and then save this as a new pattern. You can do this by going to Edit → Define Pattern...

4. Go to Adjustment Layer → Pattern, and select your newly created grid pattern.

5. Adjust the opacity as desired.

An example of method 1 with the columns and baseline grid together.

ADVANTAGES

- You get an optional baseline grid, which you can use independent of the vertical column grid. A baseline grid can create visual clutter when laid over top a design comp. With this method, it can just be toggled on when needed.
- If you prefer to use guides for your grid, this is the better solution.
- You can hide and show the grid through an easy shortcut.

DRAWBACKS

- Using vertical guides to mark other elements in the document can be difficult because you might confuse them with the grid.
- Compared to method 2, your options for the grid are not as specific or comprehensive (such as setting the height of the horizontal module).
- Grid lines are determined mathematically and won't necessarily align with the pixel grid. This means that your guides could in some cases fall unevenly and end up being positioned down the middle of the actual pixels.
- This method requires two separate processes to create a vertical and baseline grid, compared to just the one method coming up.

Method 2

Modular Grid Pattern is an all-in-one grid solution. The tool creates a vertical columnar grid and a baseline grid all as one pattern. There are two ways to go about using Modular Grid Pattern:

Application Panel

In addition to Photoshop, this also works with Fireworks, GIMP and Microsoft Expression Design. Please note that you must have the latest software (Adobe CS5 or the equivalent of one of the other applications) and an Internet connection for this panel to work. That being said, if you have already created a pattern and saved it in your library, then you would be able to access it without needing anything else.

Web app

This works in Chrome, Firefox, Safari and Opera. The Web app enables you to create a grid pattern and download it straight from the browser in all formats.

Whichever way you choose, just pick a module width, gutter width and baseline number, and Modular Grid Pattern does the rest. You can also specify a height for the horizontal module.

ADVANTAGES

- This is a fast way to get it all; an all-in-one layer.
- You have the option to download a Photoshop pattern file, PNG or transparency mask.
- You can label the patterns and put them in a folder so that you can come back to the grid with virtually no set-up required at all.

- Frees your guide to be used for other purposes.
- You can specify a height for the vertical module to establish an overall vertical rhythm.
- The grid can be overlaid with varying degrees of opacity, so you can make it less distracting as you are designing.
- Supports applications other than Photoshop.

DRAWBACKS

- If your canvas is wide, then making the grid a pattern will make it extend across the entire page, which could be annoying and make it harder to see the boundaries of the content. This can be fixed in a couple of ways:
    1. Apply a layer mask to constrain the grid to just the main content area.
    2. Draw a rectangle the size of the main content area (for example, 960 × 1200 pixels), and apply the grid as a layer style, with the fill set to 0% in this case.
- This method forces you to choose a baseline grid, preventing you from just creating vertical columnar modules.
- It requires you to manually hide and show the grid layer, without the benefit of a keyboard shortcut.

Concluding Thoughts

We hope these methods will increase your efficiency and precision in establishing a grid. In the end, the way you set up the grid will depend on your workflow. Evaluate your needs, then choose the method best suited to them. Either method requires minimal set-up but can save much time and frustration.

ADDITIONAL RESOURCES

If neither method interests you, quite a few templates out there would also do the job. I recommend checking out Mindy Wagner's layout template and Robbie Manson's 960-pixel grid templates. Also, The Grid System links to a number of quality resources and tools.

Pixel Perfection When Rotating, Pasting And Nudging In Photoshop

Marc Edwards

When creating Web and app interfaces, most designers slave over every single pixel, making sure it's got exactly the right color, texture and position. If you're not careful, though, some common functions like moving, rotating and pasting can undo your hard work, resulting in a blurry mess. But with some small changes to your workflow, you should be able to maintain the highest-quality artwork from the start to the end of the project.

Pixel-Perfect Rotation

If you're not careful, rotating layers in Photoshop can damage them in a very noticeable, pixel-mashing way.

When rotating layers with Free Transform (and some other tools) to exactly 90 or 270°, the quality of the outcome is determined by the layer's size. If the layer is of an even width and even height, then you'll be fine. If it's of an odd width and odd height, you'll also be okay. But if they're of an odd width by even height or even width by odd height, then you'll see something like the result below:

Original layer (vector or bitmap)
Bitmap
Vector
Using standard rotation
Using Bjango rotation action

In this case, the artwork is 20 × 9 pixels: even-by-odd dimensions. The results for bitmap layers and vector layers are different, but they both produce unusable results because the origin of rotation doesn't fall on an exact pixel boundary.

A FIX

Because even-by-odd or odd-by-even dimensions are the problem, we need a way to ensure that the contents of the layer are odd-by-odd or even-by-even. Probably any method you can think of will solve this problem, be it adding a square bitmap mask to a layer or adding more content to the layer that you're rotating. You could also draw a square on another layer and rotate both at once.

As long as the dimensions for the layer or layers are even-by-even or odd-by-odd, it'll be fine.

AN EASIER FIX

Changing the origin of rotation to the top left (or any other corner) will ensure it is on a pixel boundary, guaranteeing perfect results every time. To do this, click on a corner origin after selecting the Free Transform tool, but before rotating. This works brilliantly and is the simplest solution yet.

Bitmap and vector masks are affected by this issue as well, so please take care. But the issue affects only rotated layers, either via “Free Transform” or “Transform” under the *Edit* menu. Rotating the entire canvas via *Image* → *Image Rotation* has no problem.

To make things even easier, I’ve created some Photoshop Actions and Workflows that take care of everything for you.

Pixel-Perfect Vector Pasting

If you've drawn pixel-snapped artwork in Illustrator and pasted it into Photoshop as a shape layer, you may have noticed that the result is not quite what you expect (i.e. a perfectly sharp image), but rather a blurry mess. Here's how to fix that.

Below is some artwork as it appears in Illustrator: perfectly formed, snapped to the pixel grid, and at the size we intend to use it in Photoshop.

Below are the same paths pasted into Photoshop a few times. Notice how only the top-left version is sharp, while the others are half a pixel out on the x axis, y axis or both.

WHAT WENT WRONG?

Photoshop's pasting behavior works in one of two ways. If you've made a selection, then the clipboard's contents are pasted so that the center of the clipboard is aligned with the center of the selection. If a selection hasn't been made, then the contents are pasted so that the center of the clipboard aligns with the center of your current view. The level you're zoomed into and the portion of the document you're viewing determines the result.

A FIX

Our test artwork is 32 pixels wide by 12 pixels high. Drawing a 32 × 12 marquee selection in Photoshop forces the artwork to land exactly where we want it and to be pixel-aligned. This works every single time.

AN EASIER FIX

The marquee doesn't have to be the exact size of your artwork, though. In our case, a 2 × 2-pixel selection would work just as well, because the center of an even-width-and-height marquee selection and the center of even-width-and-height clipboard contents would fall exactly on a pixel boundary, which is what we want. If the artwork was an odd width and height, then a 1 × 1 selection would have been required.

If you couldn't be bothered noting your artwork's dimensions, then by drawing an appropriately sized marquee, you can draw a 2 × 2-pixel selection and paste. If the image is blurry on the x axis only, make the selection 1 × 2 and paste again. If the image is blurry on the y axis only, make the selection 2 × 1 and paste again. If the image is blurry on both axes, make the selection 1 × 1 and paste again.

It may sound complex, but in practice it's very quick; you'll only ever have to paste twice to get sharp vector paths from Illustrator.

SMART OBJECTS

Pasting elements as smart objects doesn't come with the same issue (at least not in Photoshop CS5 anyway). I like to use Shape layers, though: they allow more control and editability and have better anti-aliasing.

Pixel-Perfect Vector Nudging

When nudging vector points, Photoshop exhibits some strange behavior, related to how far you're zoomed in. At 100%, nudging with the arrow keys will move your vector point exactly 1 pixel. At 200%, nudging moves the point by half a pixel. At 300%, it moves by a third of a pixel.

The behavior seems intentional, but it's not usually what I'm after. Most of the time, I want to nudge in whole pixel increments. Here's how you can do that, without zooming out to 100%.

Open your document, and then create a second window by going to *Window* → *Arrange* → *New Window*. You can then resize the new window and place it out of the way.

Large view

Edit in the other window as normal, zooming in as far as you'd like. You'll now be able to press `Command + ` ` to switch back to the window that's zoomed to 100%, nudge using the arrow keys, and then press `Command + ` ` to switch back again. Because the other window is zoomed to 100%, nudging will move the selected vector points exactly 1 pixel.

Large view

Please note that holding `Shift` while using the arrow keys to nudge always moves by 10 pixels, no matter how far in you're zoomed. Also, dragging points with the mouse will snap to pixels in most situations — most, but not all.

While not perfect, this technique does remove some of the frustration with editing detailed vector paths in Photoshop. Or maybe it's just another reason why complex shapes should be drawn in Illustrator first, and then pasted as shape layers?

Take Charge Of Your Pixels

Using the correct techniques, it should be easy to place pixels exactly where you want. Remember, you're the one in charge. Demand that they fall in line. Accept nothing less than pixel perfection.

Would you like to know more about a particular technique or Photoshop feature? Please let us know in the comments.

Top Non-Destructive Photoshop Techniques

Adrian Taylor

The creative process is not a linear one. As artists and designers, we often set off in one direction only to decide that the proper solution lies somewhere else completely. Unfortunately, many of the creative software packages we use (Photoshop in particular) can be pretty unforgiving when in comes to making changes late in the game.

Sure, we've got "Undo" for a quick change of heart, but often we don't realize we need to make an adjustment until several steps (or days) later. Luckily, Photoshop has some great features built in that allow us to work in ways that protect our precious pixels—truly freeing us to do our best work.

In this video article, I'll show you some of my favorite techniques and tools for keeping your files flexible, including *Smart Objects*, *Smart Filters*, *Layer Styles*, *Adjustment Layers*, *Masks* and more. The approaches shown in this video should provide a solid starting point. But like anything in Photoshop, there is no "one right way" to approach it. The key is to find the method that best supports your workflow!

Click the link to see the video tutorial.

> *Designing or editing photos is a pretty organic process. Allowing yourself to make edits to your document that don't affect the original pixels provide you with a lot of flexibility when making decisions throughout your design process.*

Exporting From Photoshop

Marc Edwards

Congratulations. You've just completed a pixel-perfect mock-up of an app, and you've gotten the nod from everyone on the team. All that's left to do is save the tens, hundreds or maybe even thousands of production assets required to bring it to life.

It's probably the least interesting part of designing software, usually entailing hours of grinding. Saving images to multiple scales — as required by iOS and other platforms — adds complication to the process. But there are ways to streamline or automate the exporting process.

Copy Merged

Cutting up a design with the “Copy Merged” feature is fairly easy: ensure that the layers are shown or hidden as needed; draw a Marquee selection around the element; choose Edit ➔ Copy Merged, and then File ➔ New; hit Return; and then “Paste.” The result is a new document with your item isolated, trimmed to the absolute smallest size possible.
From here, all you need to do is save the image using “Save As” or “Save for Web & Devices.”

Rinse and repeat for every image needed for the app or website. The technique is simple and quick, but repetitive; and if you ever need to export the images again, you’ll have to start from scratch.

This seems to be the most common method and, for some designers, the only method, which is a shame, because better techniques exist.

You could create an action that triggers the “Copy Merged,” “New,” “Paste” process — a small time-saver, but ultimately not much of an improvement to the workflow.

Export Layers to Files

If you're lucky, and your goal is to export a lot of similar images (typically with identical dimensions), you might be able to use Photoshop's "Export Layers to Files" script.

By choosing File → Scripts → Export Layers to Files, each layer of the document will be saved as a separate file, with a file name that matches the layer's name. This means you'll probably have to prepare the document by flattening all of the elements that you'd like to export down to bitmap layers — a time-consuming process, but often quicker than using "Copy Merged." It could also trim the size of the resulting file, if you choose to remove completely transparent areas.

I can't say that I'm a fan of the script's Flash-based UI or of the way it works, but "Export Layers to Files" is handy if your desired result fits its limited range of use cases.

Slices

Photoshop's Slice tool lets you define rectangular areas to export as individual images, with some limitations: only one set of slices can exist per document, and slices cannot overlap (if they do, then smaller rectangle slices will be formed). During the '90s, the Slice tool was a good way to create table-based Web layouts, filled with images. These days, designers far more often need finer control over how images are sliced, especially when creating efficient, dynamic designs, typically with images that have transparency. But, with a twist on the original concept, the Slice tool can be put to great use.

SPRITE SHEETS WITH SLICES

Sprite sheets are commonly used in CSS and OpenGL games, where texture atlasing can have significant performance benefits. A similar method can be employed to build UI elements in Photoshop, even if the result is a set of images, rather than one large image.

By spreading out the elements that you need to export as a flat sprite sheet, you eliminate the need for slices to overlap. If there are too many elements to comfortably fit in one document, you can create multiple documents, eliminating the need for more than one set of slices per document.

The other benefit to working like this is that you'll no longer need to build your main design documents with the same level of precision. Occasionally using a bitmap or forgetting to name a layer is fine, because you'll have a chance to fix things when preparing the sprite sheet for exporting. But it does mean that the original mock-up document could get out of sync with the export documents if you make changes (for example, to adjust colors or layer effects).

Because we're interested only in user-created slices, it might also be a good idea to click "Hide Auto Slices" (in the options toolbar when the Slice Select tool is enabled) and to turn off "Show Slice Numbers," under "Guides, Grid & Slices" in Preferences. This way, you'll remove unnecessary clutter from Photoshop's slice UI.

After you've created a sprite sheet with the slices all set up correctly, you'll be able to export all of the images at once, using "Save for Web & Devices." Assuming you've done things correctly, you'll be able to scale up by 200%, save all of your Retina images, and then batch rename them (adding *@2x* to the file names) — or scale them down, if you built everything at Retina size to begin with.

LAYER-BASED SLICES

If your UI element is one layer and you'd like the exported image to be the smallest possible size, you might want to consider using a "Layer-Based Slice." To create one for the currently selected layer, choose "New Layer-Based Slice" from the Layers menu. A Layer-Based Slices moves, grows and shrinks with the layer it's associated with. It also takes into account layer effects: strokes and shadows increase the size of a Layer-Based Slice, so the effects are included. Less control, but more automated.

My Exporting Workflow

For years, I've used Copy Merged as my primary exporting method, and used Export Layers to Files when it made sense. That was a poor choice. Sprite sheets have so many advantages, especially in medium- to large-scale projects, that the set-up time is made up for very quickly. This is even truer when exporting Retina and non-Retina images: each set can be exported in a few clicks and is far less likely to have issues with file names or sizes due to its automated nature.

It also creates an environment in which modifying production assets is easy, allowing for faster iteration and more experimentation. It lowers the barrier to improving artwork during development and when revising the app or website.

And that's a very good thing.

The Lost Art Of Design Etiquette

Dan Rose

Endless layers in Photoshop. Overstuffed image folders. That jQuery plug-in that has 12 files associated with it. Hundreds or thousands of individual pieces go into making a website. No wonder we go off the deep end when we can't find a closing div—er, section tag. We work with a ridiculously large number of things, and how we organize them (or choose not to) is often left to personal preference. But our messy habits result in confusion for the designer or developer who inherits your work.

Does it really need to be this way?

Us Vs. Them?

The great divide between designers and developers is well documented. Designers complain when developers would rather backgrounds not have any images. Developers gripe when given a Photoshop document with missing fonts. If those were the only problems we face, we'd be thrilled.

Unfortunately, not every studio is a breeding ground for pixel-crafting harmony. Sometimes designers work on one floor, developers on another. If you asked a good number of them, they'd say they were content with that arrangement. No wonder communication breakdowns are so frequent. The only brains we have to pick are those of our fellow designers or fellow developers, with little crossover it seems. Proximity doesn't always improve proficiency, but don't tell that to bees.

The essence of teamwork. You've heard of designer bees and developer bees, right?

Web designers have the unique ability to communicate through layout, shape, typography and, ultimately, simplicity. That same discipline must be exercised internally when sharing their artwork with colleagues — using, coincidentally, those same tools. As challenging as it may be, we can bring sophistication to our interfaces in Photoshop, so that our artwork achieves clarity through order. Just as our client has a target audience, we should also be considerate of the internal audience that uses our work.

We're nibbling at the edges of websites that deliver a happy marriage between remarkable aesthetic and solid function. Seeing some websites already achieving that is exciting. But to fill the Web with more of it, **designers and developers will need to combine their skills in even more proficient and efficient ways**.

A CALL TO ARMS

Let's start a revolution that has less to do with being nice and more to do with holding one another to higher standards. Let's get caught up not in the sexy pixels of tomorrow, but rather in attention to detail in our workflow. What if we made it easier for others to actually use and edit our work? Yes, my friends: let's start an etiquette revolution.

Make better websites, not war. Fist bumps, man hugs and peace signs, people.

More Than Just Chivalry

Why etiquette? I agree: at first it does sound stuffy and time-consuming, especially if what we've done has always worked. The client won't see the etiquette, we'll still get paid, and all is well. But let's reason here: whether you're in a group or creating websites all by yourself, the level of detail in your craft reflects how much you value your profession and should be apparent in the finished product.

Even so, internally, inheriting messy artwork can be a point of contention for developers. A design could be the most beautiful and useful thing in the world, but if it's not practically built, it will waste precious time and money. All of the investigative work of the developer in posing questions to the designer about what's confusing in their PSD should not have been necessary; the work should have been clear from the beginning, and the designer as organized as ever.

Can both the individual *and* group benefit from some good ol' fashioned etiquette?

PERSONAL GAIN

Here's a plain illustration of my point. Think of the designer or developer whose work inspires you most. Imagine you had the opportunity to work with them on a project. They got the ball rolling with a PSD or a directory of coded files, and handed it off to you for editing. How surprised would you be if the layers were unnamed? Or the code wasn't indented, all smushed together? You likely wouldn't see that, right? Every layer, every line of code reflects on who they are.

Even if you're a one-person shop, holding yourself to high standard of organization has always been good practice. By doing so, you make less work for yourself when you need to go back to edit something. More importantly, if you were ever to pass off a PSD to a developer or client, you'd want it to speak to your attention to detail and professionalism.

(Aside to Fireworks users: I'm about to make a ton of references to PSDs, so feel free to substitute "Fireworks PNGs.")

COLLECTIVE GAIN

Have you ever inherited a PSD from a designer and, on seeing the missing fonts, unnamed layers and myriad of masks, knew you were in for about four hours of work just to get started? No? Must be just me, then.

Indulge me, then. Those hours, even if few, are time spent by someone less familiar with the file than the designer and, thus, unnecessary. Our job as Web designers is to run a tight PSD ship. In theory, I should be able to organize my PSD in a fraction of the time that someone else could, just because of my familiarity as the designer. The result? An easier process for the inheritor and less time billed for the company.

Equally important, how much less disgruntled would developers be if designers handed over their work without so many blunders? How many projects would come in under budget? How about world peace? Too far?

Let's apply the same clarity that we bring to the canvas to the "Layers" panel, too. Now we're on our way to higher standards.

Let's look at some recurring issues and see how to resolve them.

Common Mistakes

DIDN'T PUT THE FILE ON THE SERVER

Just your luck. A deadline is fast approaching, and you've set aside a good amount of your day to plough through editing a PSD that a fellow designer has just finished working on. Problem is, you can't get to it because it's sitting on their desktop instead of the server. How convenient. And doesn't this always happen when they're on vacation?

If you're like me, your short-term memory could use a reminder at 5:00 pm daily.

The remedy

Depending on the hardware, designers should work directly off a networked server, and use their computers only for local back-ups. Alternatively, you could set an alert (in iCal or your app of choice) at the end of each day to remind you to commit your files to a shared spot.

UNNAMED OR UNUSED LAYERS

The developer didn't expect to need a machete to use your file. Thicker than the Amazon rainforest, your PSD has layers-a-plenty, some even with such distinguished names as "Layer 0 copy."

The remedy

Name layers and make folders as you go in Photoshop. Yes, it takes discipline, but it's easier than having to go back to rename and delete after the fact. Use folders, too: they're there for a reason.

Distinguishing "Layer 0" from "Layer 1" is hard. Let's use our words.

UNPURCHASED STOCK PHOTOS

Hello there, Mr. iStockphoto watermark. Curious to see you in the final PSD. If we could have only mustered the $3 for credits, I could have gotten rid of you myself.

The remedy

For everything, proofread, proofread, proofread. Your text *and* your images.

Ouch! See what happens when we forget to buy the stock?

INACCURATE FILE NAMES

You look confused, developer. Clearly, you should be using *website_LATEST-v3_FINAL.psd* instead of *website_USE_THIS_ONE_ULTIMATE.psd*.

The remedy

One file, named accurately. Archive the rest if you think you might need to go back to the third of your nine iterations for some reason.

No amount of highlights and descriptions is as good as maintaining a single file and archiving the rest.

MISSING FONTS

Does this sound familiar?

The following fonts are missing for text layer "myFont, notYours":
`Guilty Culprit Extra Condensed`
Font substitution will occur. Continue?

Ain't that something? Confirming wouldn't be a good solution in this case, because then the developer would be doing some guesswork to match the font that the designer presumably has more knowledge of. This usually happens when a font needs to be used as image text, so a straight substitution might not be an option.

The remedy
Ideally, the designer would be considerate enough to include the (licensed) font somewhere within arm's reach of the PSD. Alternatively, the studio could install common fonts on all production computers. Apps like Fontcase, Suitcase Fusion and Linotype FontExplorer X will manage your fonts for you.

INCONSISTENT OR INACCURATE CONTENT

If I've learned anything from working with developers, it's that they don't like to do things twice. Rightfully so. Whether it's unpurchased stock photos, inconsistent type sizes or inconsistent colors, when they're not caught the first time around, images need to be reproduced and code needs to be altered. And sadness overcomes all those involved.

The remedy
Develop a brand guide if one doesn't exist, and have someone check your work before you hand it off. Think of it as quality control.

Tips And Tools

NAME FILES FOR FUNCTION

Be descriptive but practical when naming PSDs, JPEGs, etc. Something like *header_bg.jpg* is a little more indicative than *blue_box.jpg*, isn't it?

CONSERVE FILE SIZE

I may sound like an old curmudgeon, but file size is still pertinent today. When exporting images, remember that a background at 80 quality will still look close to one at 100 quality but will likely be at least 33% smaller in size. Everyone still likes pages that load quickly, even if our Internet connection speeds have increased over the years.

SNAP TO PIXELS

When I'm cutting up a PSD, one of the most common things I have to negotiate are those 1-pixel semi-transparent lines on the outer edges of shapes. The best way to remove them is pretty well cloaked in the vastness of Photoshop's settings. When choosing a shape to draw, such as a rectangle, look towards the top of the screen at a row of those same shapes, with an arrow at the end of the row. Click that arrow, and you'll see more options. Check the box "Snap to Pixels," and you'll see that the shape you draw will have much more precise edges.

USE VERSION CONTROL

A fantastic way to cut down on the chaos of sharing files is to use a version-control system such as Git or Subversion. You designers, don't feel that only developers can geek out about this. Using some type of revision control for our PSDs and other artwork files is equally important, because those files tend to get revised and transferred quite a bit. Version control is crucial when multiple people are working on front-end and back-end development, because overwriting someone's work when uploading your own is all too easy.

COMMUNICATE

The saying "Communication goes both ways" never meant so much as it does here. Designers should freely communicate their decisions to developers, who themselves should express their concerns about programming said decisions. Nothing new, but it just doesn't happen as openly as it should. If you consult with each other frequently, you're bound to have more etiquette.

BE TEACHABLE

Part of practicing good Web design manners is having the humility to know you're not the best at what you do (except for one of you out there, Mr. Best Web Designer). Be open to being educated by other designers, developers and fantastic websites such as Think Vitamin Membership and Method & Craft. You'll gain the respect of your co-workers for taking the initiative to improve your skill set.

Websites like Method & Craft are invaluable resources in your quest to become a Web design hero.

IMPLEMENT STANDARDS

The best way to force your Web team to adhere to standards is to come up with a list of best practices, on that holds each person accountable for their PSDs, HTML, CSS and beyond.

Isobar has done some of the work for you with its [Code Standards and Best Practices](#).

The Photoshop Etiquette Manifesto for Web designers was created to give both beginner and seasoned designers a crash course in keeping PSDs organized and understandable for others. With helpful visual comparisons of “Do this” and “Not this,” the website serves as both an educational resource and a checklist. With the crown of “Layer Mayor” at stake, why not take more pride as the resident PSD pro in your office?

Setting some guidelines in your workplace is key to accountability and consistency.

Moving Forward

Having said all this, it's encouraging to see more designers learning and understanding the process of developers, and vice versa. Some have done it out of necessity, such as freelancers who are hybrid designers/developers. Others have done it in order to understand their co-workers better, in the hope of a better product.

Hopefully, it's become apparent that being on the same page, especially in Web development, is crucial to success. What are you doing to emphasize a high standard and clarity in your own craft and to make your team's job easier?

About The Authors

Adrian Taylor

Adrian is an Interactive Creative Director and Principal at Pushstart Creative, a multidisciplinary agency focused on the convergence of physical product, interactive technology and brand experience. While much of his current work is focused on research, strategy development, and UX he will always have a passion for pushing pixels. Stop by designtaylor.com or find Adrian on Twitter.
Twitter: Follow the author on Twitter

Dan Rose

UI Designer Dan Rose is the creator/curator of Photoshop Etiquette, a guide promoting best practices for web design. His penchant for Photoshoppery and design process is evidenced by his articles and speaking engagements.
Website: http://danrose.me
Twitter: Follow the author on Twitter

David Mottram

I'm an illustrator and designer living in Ohio. I grew up in a blue-collar hardworking household. I've carried that philosophy into my life by working hard on every project I take on. To get to create for a living is a blessing and is something I don't take for granted. I truly love what I get to do for a living. Thanks for checking out the blog.
Website: Monkeyworks
Twitter: Follow the author on Twitter

Marc Edwards

Marc Edwards (@marcedwards) is the Director & Lead Designer at Bjango (@bjango) and co-host of the Iterate podcast (@iteratetv).

Steve Schoeffel

Steve Schoeffel (@steveschoeffel) is a visual designer at Viget and is based outside of Washington DC. His portfolio can be viewed here.
Twitter: Follow the author on Twitter

Tom Giannattasio

Tom Giannattasio happily makes things at nclud. He works as an Editor for Smashing Magazine and teaches at Boston University Center for Digital Imaging Arts. He loves to experiment and share his work on his personal site: attasi.
Website: attasi
Twitter: Follow the author on Twitter