The Secrets

To Success

When

Turning Pro!

(Program Workbook)

Steve Kozak, M. Photog., CR. PPA Certified

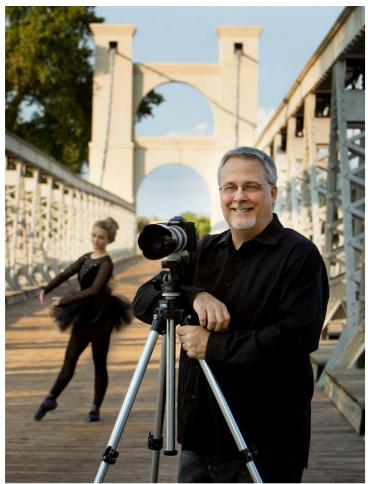
Steve Kozak Photographic Artist

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Steve Kozak is an active member of the Professional Photographers of America and the Texas Professional Photographers Association. Steve has earned the "Master of Photography" and the "Craftsman" degrees from PPA, and is PPA Certified. His work has also appeared in the prestigious "Loan Collection". Professional recognition of his work includes the **Masterpiece Award** from Fuji Film USA.

Steve recently served on the PPA Board of Directors. He also served as Board Liaison to the Bylaws, Rules and Ethics Committee and to the Speaker Selection Committee. He is also a PPA qualified instructor for PPA Certification prep classes.

Steve has recorded over a dozen videos for the PPA EDU program. These videos include classes on the fundamentals of photography,



manual flash photography, exposure, opening a new studio as well as videos for CPP study preparation.

He has taught 24 years at the prestigious Texas School of Professional Photography and 22 years at Imaging USA. He has also taught at the Mid-America Institute of Professional Photography, East Coast School and Image Explorations near Victoria, British Columbia. He has written for Texas Professional Photographer and The Professional Photographer magazines. He is also the author of "Preparing for PPA Certification", a study guide for those preparing to take the CPP exam.

Steve currently serves as Executive Director for the Texas Professional Photographers Association Executive Board and the Professional Photographers Association of New Mexico.

Steve's articles have been published in <u>The Professional Photographer</u> and <u>Texas Professional</u> <u>Photographer</u> magazines. His informative and inspiring programs make him a popular instructor on the speaking circuit.

PLEASE NOTE: This workbook has been made available to you strictly as an outline for this course and a study guide to use afterwards. It is provided to you in good faith that you will not copy, duplicate, or reproduce any portion of this workbook in any form. It may not be used in whole or in part, as the basis for any teaching program or presentation.

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On the web at: www.hhcolorlab.com

Sunday:

- 8:00 Welcome/Introductions
- 8:15 Class Outline/Procedures/Policies/Expectations
- 8:30 Overview of Week
- 9:30 Class Ends

Monday:

- 8:00-5:00 Trade Show Open, RENAISSANCE Crystal Ballroom 2nd floor
- 8:30 REVIEW: The Basics of Photography Exposure
- 9:00 Metering
- 9:30 Camera Set Up
- 10:00 Quality of Light/Color Temperature/White Balance
- 10:30 Seeing Light
- 11:00 Natural Light Portraits
- Noon Lunch
- 1:30 Determining Vision/Backgrounds
- 2:00 Basic Flash Photography
- 3:00 Advanced Flash Techniques
- 4:30 General Posing
- 5:00 Group Picture (WEAR YOUR Texas School T-SHIRT)
- 6:00-11 FREE BBQ Meal, concert and fun at the Cowboy's Red River Dance Hall. Dinner served at 6:30. Sponsored by White House Custom Color

Tuesday:

8:00-6:00 Trade Show Open, RENAISSANCE Crystal Ballroom 2nd floor

- 8:30 The Art of Photography
- 9:00 Getting to Know Our Studio Equipment
- 9:30 Lighting Patterns and Theory
- 10:00 Determining Exposure
- 10:30 Lighting Set-ups
- 11:00 Lighting Set-ups
- Noon Lunch
- 1:30 Studio Lighting Continued
- 2:00 Studio Portraits
- 2:30 Composition
- 5:00 Class Ends
- 5:30 FREE MEAL Garden Court RENAISSANCE
- 7-8:30 Evening class continues
- 9:00PM Parade—1st floor of RENAISSANCE
- 9:30-1am "St. Patricks" Costume Party! Come dressed to have fun! Sponsored by ACI and Background Town. The party will be in the RENAISSANCE Malachite Showroom. You will not want to miss this.

Wednesday:

8:00-Noon Trade Show Open, RENAISSANCE Crystal Ballroom 2nd floor

- 8:30 Studio Workflow/Putting the Workflow Puzzle together
- 9:30 Intro to Studio Software
- 10:00 The Road To Success Requires 4-Wheel Drive
- 11:00 Getting Started Where Do I Begin?/Defining Professional Image
- 11:30 Where to Locate/Studio Flow/Management
- Noon Lunch
- 1:30 Creating Studio Literature
- 2:00 Marketing the Studio
- 2:30 Finding Clients
- 4:15 Class Ends
- 4:30-10pm TRADE SHOW Extravaganza Crystal Ballroom Instructors and suppliers will have items for sale. Food, beer, wine and soda will be provided.
- 7:00-8:30 FREE meal Garden Court Sponsored by Arlington Camera and Vendors.
- 9:32 Door Prizes in the Trade Show

Thursday:

8:00-7:00 Trade Show Open, RENAISSANCE Crystal Ballroom 2nd floor

- 8:30 Understanding Pricing/Pricing Structures
- 9:30 Pricing Strategies
- 11:00 The Art Of Selling
- Noon Lunch Trade show open
- 1:30 Creating Product Lines
- 2:30 Know Your Suppliers
- 3:00 Discover The Artist Within
- 5:00 Class Ends
- 5:00-7:00 Class Dinner
- 7:00-9:00 Class Events
- 9:30-11:30 Unwind @ RENAISSANCE lobby bar Free beer and wine: Sponsored by Arlington Camera

Friday:

- 8:30-10:30 All School Program Malachite Showroom Thousands of Dollars in Door Prizes
- 10:30-Noon Class Meets Graduation in individual classes

So you're thinking about turning pro?

Merely owning a camera does not make one a photographer any more than owning a pencil makes one a poet. For many, the fact that cameras nowadays are so smart that "anyone can take a picture" has them reasoning with a "no experience necessary" mentality. I know many who "decided" to become a professional photographer only to find themselves in over their head in just a few months. A short time passes and they have moved on to their next "profession". If you really want to succeed as a professional photographer, don't get caught in that trap!

The decision to turn pro should be made after an honest evaluation of your knowledge and skills, your resources and the creation of a workable business plan. To create a solid foundation on which to build a successful career in professional photography, consider your comprehension of these three aspects: The Fundamentals, The Art and The Business.

The Fundamentals

Basic Camera Operation

The average consumer's need to understand the science of photography has almost disappeared with the ease of operating today's automatic cameras. For the professional, a working knowledge of f-stops and shutter speeds is not an option. A solid understanding of exposure, lenses and flash photography is equally important. If you rely on the camera to make exposure decisions, consider taking a basic photography course before even considering turning pro.

Predict the results before you shoot

You should be able to look at a subject and background and be able to predict with some certainty how the photograph will look. Within reason, you should be able to judge the effects of depth of field and the intensity of the background relative to the subject.

Repeat results consistently

It's one thing to get a great shot one time. It is another to repeat the results time after time. You cannot go into a session "hoping" the images will turn out.

Be comfortable with posing

You should have enough experience to become comfortable posing clients. This is especially important with families and brides. You should be able to demonstrate and communicate the poses you need from your clients.

Own reliable equipment

You should be in a position where the equipment you own is reliable and that you have backup equipment on hand. Do not even think about photographing important events such as weddings without a backup camera, lens, flash and cables and sync cords.

Have a business plan in place

Think of this as a road map for your business to follow. Understand the basics of marketing, advertising, business workflow and accounting.

Where Can You Go to Continue Learning?

Professional Organizations

Local Guild State Associations National Associations (PPA)

Imaging USA

February 2-4, 2025 Grapevine, TX

Grapevine, IA

Pre-con Classes January 30-February 1

Find a Mentor PPA Affiliated School (www.PPA.com)

Texas School of Professional Photography

www.TexasSchool.org

Professional Publications

Professional Photographer

https://www.ppa.com/ppmag

Books Published by Marathon Press www.marathonpress.com/ Loan Collection and Showcase



Digital Sensors - Size Matters!

A lens throws a circular image onto the film/sensor plane. That circle has to cover the film/sensor from corner to corner.



A half-frame sensor is about half the size of the full frame and only records about 50% of the image that the full frame sensor would capture.

This has the effect of recording the image with more of a telephoto effect with the same lens.

To calculate this telephoto effect, multiply the focal length by the sensor's "Multiplication Factor. This means a 200mm lens on a camera with a half frame sensor with a 1.6 MF produces an image that looks like it was done with a 320mm lens.

This is cool for telephoto images, but it is sad when you no longer have a wide-angle lens at 28mm because it is really like having a 45mm lens on a camera with a half frame sensor.

The illustration at left shows a 35mm frame well within the circular projection of the image by the lens and the image recorded by the film.

This is also how a digital camera with a full frame sensor would record the image. This is because the sensor is the same size as the 35mm frame of film.

Digital cameras are generally offered with "full frame" or "cropped" sensors. A full frame sensor will yield an image in the same way it would have been recorded on a piece of 35mm film.



There are lenses built just for cropped sensors. These "digitally integrated" lenses throw a smaller image circle which renders a wide-angle image on the smaller sensor. But beware, Di II lenses will not move with you to a camera with a full frame sensor as the circle is too small to cover the sensor corner to corner.

Equipment Basics

- 1. Camera Selection Camera Gear
- ___Canon R5
 - Canon RF 24-105 F4 Lens
- Canon RF70-200 F4 Lens
- ens ____Canon RF 24-105 F4
 - ____Canon RF70-200 F4 Lens

Canon R6 Mark II

____NikonZ7II ____Nikor F 24-120 F4 Lens ____Nikor Z70-200 F2.8 Lens

Complete Back up Camera System

2. Lens Selections:







Your Vision Is in the Lens You Use

So much of capturing your vision for any given image is in selecting the right lens. A lens will affect the perspective of the background as it relates to sharpness and as it relates to your subject.

What You See and What You Get

The focal length (mm) of the lens determines the "angle of view" - or how much you see in the image.



Lens Definitions

Full Frame SensorNormal- 50mmWide Angle - 28mmTelephoto- < 75mm</td>

<u>Cropped Sensor</u> Normal - 30mm Wide Angle - 18mm Telephoto - < 50mm

Steve's Lens Selection Tips:

- 1. Purchase great lenses! They will long outlast the life span of your camera.
- 2. Avoid lenses only suited for half-frame sensors.
- 3. Don't try to get all the focal lengths in one lens.
- 4. Select lenses that are F2.8 or F4.
- 5. Avoid Variable Aperture lenses.
- 6. Image stabilization adds to the cost of the lens.
- 7. Generally, your camera manufacturer will make the best lenses for your camera.

3. On Camera Flash: Westcott FJ80 II

Flash Accessories: X3 Universal Wireless Trigger Flash Bracket CB Junior or Stroboframe Extra batteries Backup flash system

4. Off Camera Flash: Westcott FJ200 Strobe Westcott FJ400 Strobe Heavy duty light stand Westcott 8' Air-Cushioned Light Stand Softbox Rapid Box Switch





Westcott FJ200



Westcott FJ400 Strobe





5. Tripod Selection

Not optional Work slower Allows you to make eye contact Set up compositions in advance Allows you to work with slower shutter speeds

Tripod -

6. Light Meter Selection

Not optional Measures light falling on subject Measures flash and ambient light Quickly find equivalent exposures Remote trigger flash with transmitter

Light Meter - Sekonic L-478DR or Sekonic - L-308X-U (no remote)

7. Studio Lighting Selection

Makes you more versatile Allows you to accept certain jobs Work during inclement weather

2 heads for home portraits/dances3 heads for studio work4 heads if you have room for a hair light

• Westcott FJ400

Wescott 40" 5in1 Reflector

Adobe Photoshop CC Calibrite Color Checker



Camera Gear Canon R5 Canon RF 24-105 F4 Lens Canon RF70-200 F4 Lens	Canon R6 Mark II Canon RF 24-105 F4 Canon RF70-200 F4 Lens	NikonZ7II Nikor F 24-120 F4 Lens Nikor Z70-200 F2.8 Lens			
Complete Back up Camera Sy	vstem				
SD Cards <u>SanDisk Extreme</u> SD Cards (1)	16GB or 32GB)				
Portable Flash Westcot FJ80 II	Weste	ott FJ200 Backpack Kit			
X3 Universal Wireless Trigge		Westcott FJ400 Backpack Kit			
Flash Bracket		Westcott Rapid Box			
Extra Batteries		-			

___Complete backup flash system Other Gear

other other	
Light meter	Sekonic L-478DR
Light meter	Sekonic L-308X-U (no remote)

Light Stand with Umbrella Adapter

Studio Lighting

____Westcott FJ400 Two Light Kit

- ____3rd and 4th head recommended
- ____3x4 Softbox
- ____4x6 or 3.5x5.5 Softbox
- ____13x40 Strip Light

Studio Props/Background Ideas

- ___Background stands and crossbar
- White seamless paper (9 ft)
- Black seamless paper (9ft)
- Neutral color Muslin (browns or greys)

2 Heavy duty light stands

- ____Posing Stool (or tall bar stool w/o back)
- Heavy duty boom stand
 - Wallboard floor (Home Depot)
 - Mirror 36"x48" (Home Depot)
- ___Cap & Gowns

Tripod

F-stops

The F-stop, or "aperture" is the control in the lens that "opens up" or "stops down" the diaphragm inside as a way to control the amount of light that reaches the film or sensor. The f-stops are:

1.4	2	2.8	4	5.6	8	11	16	22	32
\bigcirc	\bigcirc	\bigcirc	\bigcirc	\bigcirc	0	0	0	0	o

The f-stops on your lenses may not be numbered exactly the same as these, but they will be close. These are considered to be "whole stops". There may also be "half stops" and "1/3 stops" between each of these. F-stops are a unit of measure that refer to the size of the lens opening. They also continue on past 32.

You really should commit the listed f-stops, <u>in order</u>, to memory! Memorize the numbers as listed rather than those on your lens. We will learn to interpret the numbers on your lenses, later.

NOW COMES THE TRICKY PART!

The smaller the F number, the larger the lens opening. The larger the F number, the smaller the lens opening.

A large lens opening such as F3.5 will let more light reach the film than a small lens opening such as F22. As a matter of fact, there is a relationship between each of the f-stops:

Any time you move your lens from one F# to the next smaller F#, the amount of light that reaches the film **DOUBLES**.

EXAMPLE:

F5.6 lets in <u>twice</u> as much light as F8. F4 lets in <u>twice</u> as much light as F5.6.

This pattern is the same throughout the F#'s To look at this on the other hand:

Moving the lens from F5.6 to F8, cuts the light <u>in half</u>! Moving the lens from F4 to F5.6 cuts the light <u>in half</u>!

And this pattern continues.

So in summary:

1.4 - 2 - 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22 - 32... Larger Openings <----> Smaller Openings More Light Reaches the Film <----> Less Light Reaches the Film Move One F-stop, Light Doubles <----> Move One F-stop, Light is cut in half

Changing the lens opening from one f-stop to the next will either double the amount of light that reaches the film or cut it in half, depending on which way you move it.

Shutter Speeds

This camera control is usually found on the body of the camera, although it is sometimes found on the lens. The shutter speed controls the amount of light that reaches the film by determining how long the lens remains open. Memorize these shutter speeds:

...1sec. - 1/2 - 1/4 - 1/8 - 1/15 - 1/30 - 1/60 - 1/125 - 1/250 - 1/500 - 1/1000 - 1/2000...

Notice that shutter speeds continue in both directions. Also note that we go from 1 second to 1/2 second. Your camera will not show these speeds in fraction form. When you look at your shutter speed dial and it says 500, it means that it is 1/500th of a second!

(Now comes the tricky part!)

The smaller the shutter speed number (1/1000), the faster the shutter. The larger the shutter speed number (1/2), the slower the shutter.

(Just because your camera says 1000 - it is not bigger than 2. Remember they are fractions.)

A fast shutter speed allows <u>less</u> light to reach the film than a slow shutter speed. <u>More</u> light reaches the film during 1/2second than 1/1000th of a second.

Shutter speeds have the same relationships to each other as do the f-stops in that when you move from one shutter speed to the next: You either **double** the amount of light that reaches the film or you **cut it in half**.

EXAMPLE:

Move from 1/250 to 1/125 and the amount of light reaching the film <u>doubles</u>. Move from 1/30 to 1/15 and the amount of light <u>doubles</u>.

The pattern continues.

ON THE OTHER HAND:

Move from 1/30 to 1/60 and the amount of light reaching the film is <u>cut in half</u>. Move from 1/500 to 1/1000 and the amount of light reaching the film is also <u>cut in half</u>. The pattern continues.

So in Summary:

...1sec. - 1/2 - 1/4 - 1/8 - 1/15 - 1/30 - 1/60 - 1/125 - 1/250 - 1/500 - 1/1000 - 1/2000... Slower Speeds <----> Faster Speeds More Light Reaches Film <----> Less Light Reaches Film Moving Objects may Blur <----> Moving Objects Appear Sharp

Changing the shutter speed from one to the next will either double the amount of light that reaches the film or cut it in half, depending on which way you move it.

Exposure

The basics of photography begin with correctly exposing the film by finding the right combination of fstop and shutter speed. Exposure can be expressed in this formula:

Exposure = INTENSITY X TIME or, E = IT "Intensity" is the <u>f-stop</u> and "Time" is the <u>shutter speed</u>.

If the formula is true (which it is), then we can plug-in some numbers just to see what happens. So let's do it...

E=F8 @ 1/125

(F8 and 1/125 are variables that I selected entirely at random for this example.)

"E" will represent the amount of light that reaches the film. If you remember any algebra, because there is an = in the equation, I can change my variables, so long as I keep them an equal value. **For Example:**

E = 2x10, and E=4x5.

(E is the same answer in both, but we used different variables.)

In my sample, I stated E = F8 @1/125. If for some reason I wanted to change the F8 to F5.6, could I do it? YES! As long as I keep the amount of light that reaches the film <u>equal</u>!

If I move from F8 to F5.6, I am making the lens open up to let <u>twice</u> the amount of light reach the film. In order to remain equal, I have to <u>cut the light in half</u> by moving the shutter speed to the next faster speed.

$$E = F8 @ 125$$

and
 $E = F5.6 @ 250$

F5.6 @ 1/250 would be an equal, or <u>equivalent exposure</u> to F8 @ 1/125 because in both cases, the exact amount of light reaches the film. As a matter of fact, there can be many equivalent exposures:

F22 @ 1/15 F16 @ 1/30 F11 @ 1/60 F8 @ 1/125 F5.6 @ 1/250 F4 @ 1/500 F2.8 @ 1/1000

Each of the above exposures yield the <u>exact amount of light</u> onto the film. This process is the same no matter which f-stop and shutter speed combination you choose to start out with. The hard part about exposure is figuring out which f-stop and shutter speed to start with in the first place. (We will cover this in-depth later.)

It is at this point that you may be thinking, "Gosh, If F8 @ 1/125 will work, why the heck would I want to change to F4 @ 1/500?" This is where we first begin to realize the magic of photography.

Depth of Field

The f-stops not only control the amount of light that reaches the film, but they also control <u>depth of field</u>. DOF is defined as "the area in the photograph that will be in acceptable focus."

The <u>larger</u> the lens opening, the <u>shallower</u> the DOF The <u>smaller</u> the lens opening, the <u>greater</u> the depth of field.

A shallow DOF means that the background and the foreground will appear more out of focus. A large DOF means the background and the foreground will appear sharper.

Depth of field extends in front of the subject as well as behind the subject. As a matter of fact, 1/3 of the depth of field is in front of the subject and 2/3's are behind the subject. (This assuming you have focused on the subject.) If the depth of field is 6 feet and your subject is 12 feet away from the camera, everything from 10 ft. to 16 ft. will appear sharp.

Controlling the depth of field allows the photographer to "soften" or blur the background to a degree, so that unwanted distractions are eliminated.

Even a medium depth of field helps the photographer to isolate the subject from an otherwise "busy" background.



Shallow Depth of Field

A shallow DOF means that the background and the foreground will appear more out of focus.

The image of this young cowboy has a very shallow depth of field. Notice how the background is quite out of focus. This illustrates what an image might look like at F2.8.

This technique allows the photographer to place the emphasis on the subject without distractions from the background.

Large Depth of Field

A large DOF means the background and the foreground appears sharper or more in focus.

This bridal image has a much larger depth of field. This illustrates what an image might look like at F11.

A larger depth of field is useful in this image because the elements in the background are used as part of the overall composition.



Controlling Motion

The shutter speeds not only control the amount of light that reaches the film, but they also control the apparent movement of objects in motion during the exposure.

Objects that are moving during the exposure will appear almost stationary at fast shutter speeds, and may record as a blur during longer shutter speeds.



Slow Shutter Speed This image was recorded at F16 @ 1/8 with the camera on a tripod. Notice how the slow shutter speed recorded the movement of her hair blowing in the wind.



Fast Shutter Speed This image was recorded at F2.8 @ 1/250. Notice how the fast shutter speed arrested the movement of her hair blowing in the wind.

By the way, shutter speeds help control movement of the camera by the photographer. We all have a tendency to shake when we hold the camera. For a picture to be truly sharp, the camera needs to be kept very still during the exposure.

When hand-holding the camera, use shutter speeds that are no slower than the focal length of the lens you are using.

For example,

It is recommended that you use shutter speeds of at least 1/60 or faster when your hand-holding the camera and using a 50mm lens. Use 1/250 if you have a 200mm lens on the camera.



Slow Shutter Speed This image was recorded with a 100mm lens at F16 @ 1/8 with the camera hand-held. Notice how the slow shutter speed recorded the movement the camera in my hands.



Fast Shutter Speed This image was recorded with a 100mm lens at F4 @ 1/125with the camera hand-held. Using a shutter speed that is at least equal to the focal length of the lens (100mm = 1/125) allows me to hand-hold the camera and record a sharp image.

Using speeds slower than the focal length of your lens may require a tripod are some other camera support.

ISO Numbers

The ISO number of the film is a way of rating a film's or sensor's sensitivity to light.

The higher the ISO number, the more light sensitive it is. The smaller the ISO number, the less light sensitive it is.

In other words:

The higher ISO's such as 400 and 800, are quite light-sensitive and are capable of recording in low-light situations such as indoors with no flash or even outside at night.

The lower ISO's such as 100 and 200 require more light, so they are used outside during daylight or indoors with a flash.

It is really important to use the right ISO for the lighting conditions under which you are working. No one setting will really do both.

ISO's have the same relationships to each other as do f-stops and shutter speeds.

200 ISO is <u>twice</u> as sensitive as 100 ISO. 400 ISO is <u>twice</u> as sensitive as 200 ISO.

The higher the ISO, the more you will likely introduce digital noise to your images. This will be more apparent as you begin to enlarge your images. These imperfections may appear as pixelization or uneven tonal values in areas of large color expanse such as a sky.

The ISO dial on your camera calibrates your camera meter, so that it reads the light correctly for the ISO speed. For now, we have not talked about the camera meter, but we will later.

Calculating Exposure

At last we reach a point where we will actually know enough stuff about camera to start taking photographs. We are going to begin with daytime exposures only, and gradually will be discussing indoor and studio exposures.

Every situation that you encounter has a measurable amount of light to work with, and with the help of the camera meter, we could measure the exact amount of light for that situation. For now, however, we're simply going to learn to estimate the amount of light without the help of the meter.

At this point we're working under daylight conditions only, and there is a little formula that makes this easy. We are looking for a starting exposure and this chart makes that simple to memorize for us. The formula is:

Lighting Pattern / Starting Exposure Sunny / F16@1/ISO Partly Cloudy / F11@1/ISO Overcast / F8@1/ISO Heavy Overcast / F5.6@1/ISO

For each of the lighting patterns, the f-stop is given. The shutter speed will be determined by the ISO.

For example, if it's a sunny day, and you are using 100 ISO, the starting exposure would be F16 at 1/125.

(1/125 is the closest shutter speed to 100 ISO.)

If you are using 400 ISO, the closest shutter speed will be 1/500, so your starting exposure would be F16 at 1/500.

Once you have determined the starting exposure, then you can go through the process we learned earlier, to determine the equivalent exposure you might wish to use, depending on the effect you want.

Example 1

Let's say it is a "heavy overcast" day, and you are using 400 ISO. The exposure would be F5.6 at 1/500.

You might like an increased DOF, so try

F8 @ 1/250 or F11 @ 1/125 or F16 @ 1/60

All of these exposures will work, but F16 will give you the most DOF. You can even go to F22 at 1/30, but remember 1/30 may be too slow to hand-hold the camera without noticeable camera shake.

Example 2

This time we find ourselves on a sunny day with 100 ISO. The starting exposure will be F16 at 125. We want to "stop" kids on bikes so we try :

F11 @ 250 or F8 @ 500 or F5.6 @ 1000.

Yes, there will be a shallower DOF, but what is really important here? By the way, notice that I have quit using the fraction form to discuss shutter speeds. You can too.

Bracketing

Bracketed exposures may ensure proper exposure when you find yourself in difficult lighting situations. Bracketing is simply the taking a photograph using several different exposures.

First, do your best to determine the correct exposure and take the photograph using that f-stop and shutter speed combination. Then, shoot a second image using the same f-stop but at one speed faster than the original one. You may also shoot a third image at one speed slower than the original.

For example: If you determine the exposure is F8 @ 125, then shoot at that exposure and then also shoot F8 @ 60 and F8 @ 250. This will yield three different exposures and then you can evaluate which image you prefer.

You may also bracket by keeping the shutter speed constant and changing only the f-stop. For example: If you determine the exposure is F8 @ 125, then shoot at that exposure and then also shoot F5.6 @ 125 and F11 @ 125.

Bracketing may be very important if you shoot slide film or do digital photography. It may be the difference in a shot that works and one that does not. Slide film and digital must be exposed "right on". Bracketing is not really very necessary when shooting color negative film. It is very forgiving when you make a mistake.

Metering

Many cameras have a built-in meter that will measure the amount of light that is falling onto the film plane. Meters vary from camera to camera in how they work, and how they deliver information to the photographer.

Some cameras will give you a shutter speed based on where you have set F-stop. Others will give you an f-stop based on where you have set the shutters speed. Still others use only a needle system where you have to make needle line-up to an "N" or some other point to determine the amount of light.

Camera meters can be easily be fooled by bright or dark backgrounds. It is very important to meter the most important part of the image. Often times, we need to isolate what the meter sees in order to get an accurate reading. Once you have determined correct meter reading, you may need to turn your camera to "manual" and set the f-stop and shutter speed based on your correct reading.

Do you understand the Basics? Take this review to find out.

1. Which line has the "full" f-stops in the correct order?

A. 1.4 - 2.8 - 4 - 5.6 - 8 - 16 - 22 - 32... B. 1.4 - 2 - 2.8 - 4 - 5.8 - 8 - 16 - 22 - 32 C. 1.4 - 2 - 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22 - 32... D. 1.4 - 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22 - 32...

2. Which line has the shutter speeds in the correct order?

A. 1 - 2 - 8 - 15 - 60 - 125 - 250 - 500 - 1000... B. 1 - 2 - 4 - 8 - 15 - 30 - 125 - 250 - 500 - 1000... C. 1 - 2 - 8 - 15 - 30 - 60 - 125 - 250 - 1000... D. 1 - 2 - 4 - 8 - 15 - 30 - 60 - 125 - 250 - 500 - 1000...

3. The f-stops serve two purposes - what are they?

- A. To control motion and control depth of field
- B. To control motion and control the amount of light that reaches the sensor
- C. To control the amount of light that reaches the sensor and ISO speed
- D. To control the amount of light that reaches the sensor and depth of field

4. If you move the f-stop from F5.6 to F8, what happens to the amount of light that reaches the sensor?

- A. Decreases
- B. Increases
- C. Stays the same

5. What is "Depth of Field"

- A. How far the camera can focus
- B. The area in the photograph that is in focus
- C. The distance in the background that is in focus
- D. The distance between the camera and the subject

6. What happens to the depth of field when you move the lens from F11 to F16?

- A. Decreases
- B. Increases
- C. Stays the same

7. Given F8 @ 1/125, what would the new shutter speed need to be if you moved the lens to F5.6?

- A. 1/250
- B. 1/60
- C. 1/500
- D. 1/30

8. Why would you want to move the lens from F4 to F2.8?

- A. To increase the depth of field
- B. To use a slower shutter speed
- C. To allow less light to reach the sensor
- D. To decrease the depth of field

9. What does the ISO of the film or sensor tell us?

- What f-stop to use
- B. What shutter speed to use
- C. Its' sensitivity to light
- D. Which lens to use

10. Define "equivalent exposure".

- A. Exposures equal to the ISO
- B. Exposures that yield the same amount of light onto the sensor
- C. Exposures where the f-stop stays the same and only the shutter speed changes
- D. Exposures where the shutter speed stays the same and only the f-stop changes

11. Give an equivalent exposure to F11 @ 1/15.

- A. F11 @ 1/30
- B. F8 @ 1/15
- C. F8 @ 1/8
- D. F16 @ 1/8

12. The shutter speeds serve two purposes - what are they?

- A. To control motion and control depth of field
- B. To control motion and control the amount of light that reaches the sensor
- C. To control the amount of light that reaches the sensor and ISO speed
- D. To control the amount of light that reaches the sensor and depth of field

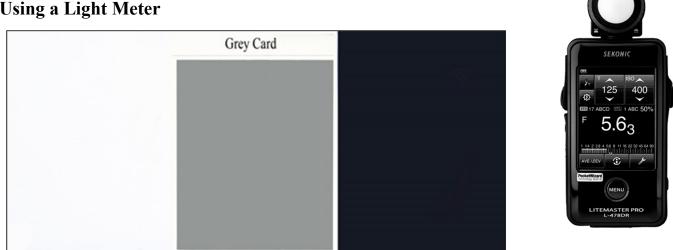
13. What is the slowest shutter speed that you should use if you are hand-holding your camera?

- A. 1/60 with a 200mm lens
- B. 1/125 with a 28mm lens
- C. 1/60 with a 50mm lens
- D. 1/60 with a 28mm lens

14. Why would you want to change the shutter speed from 1/60 to 1/250?

- A. To increase the depth of field
- B. To use a slower shutter speed
- C. To "freeze" a moving object
- D. To "blur" a moving object

Using a Light Meter



Reflective:

Camera meters measure reflective light (light reflecting from a surface) Camera meter averages the exposure to 18% grey

Incident:

Hand-held meters measure the light falling on the surface or subject Not influenced by tonal values of the subject or background

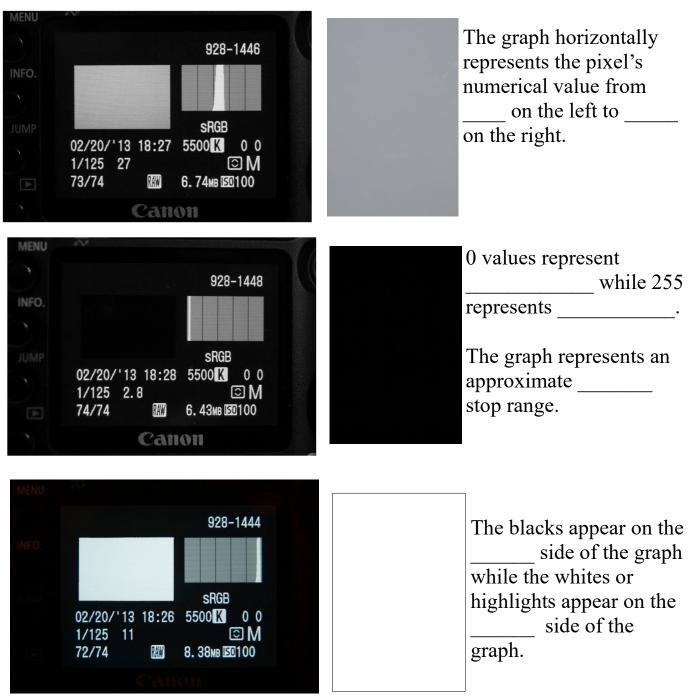
If your meter is set to measure in 1/10ths, be sure to interpret the 1/10 reading for your final exposure!

F8.0₂ = $F11.0_8 =$ _____ F5.64 =_____ $F8.0_7 =$ F2.09 =F2.8₃ =

Determining Exposure

Histograms

Histograms are a graphic representation of the tonal values of the pixels within the image.



Using The In-Camera Meter



Proper Exposure (18% Grey)

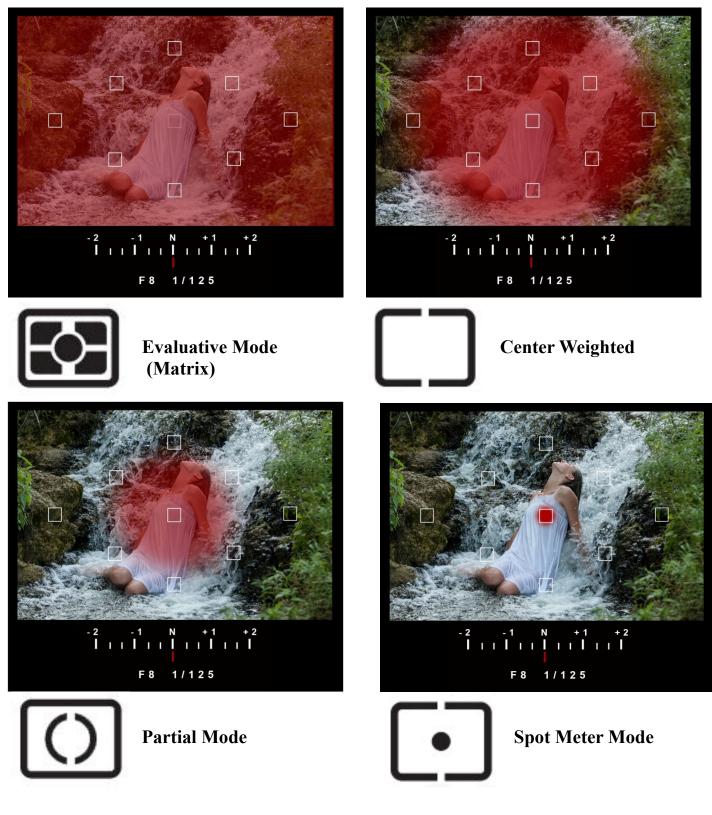


Two Stops Underexposed



One Stop Overexposed

Camera Meter Modes



Steve's Camera Set Up

Image capture quality RAW

Capturing your images in RAW allows the photographer to work with the full complement of data the camera is capable of capturing. Establish a workflow that utilizes RAW processing for speed of editing and for image protection.

Look in camera menu settings for "Image Quality" and select "RAW". There is no need for "RAW + JPG".

Set camera to half-stop increments

Your camera likely came out of the box set in 1/3 stop increments. Changing the camera to half stops makes navigation of your exposure controls more efficient.

Canon users, use the Custom Functions menu and look for "Exposure Level Increments".

Nikon users look for "Exposure Values" or "EV settings".

Set up focus selection to a single point

We do not want the camera to select where it wants to focus. Set up your focus selections to a single point which can be toggled around the viewfinder and placed at the point of your subject for accurate focusing.

Take focus off the shutter button

It is completely inefficient to have to focus before every image, plus it is hard on your equipment. Removing the focus from the shutter button allows you to focus with the button on the back and take all subsequent images at the same distance without having to re-focus for every image.

The following two pages may help you with finding the controls on your menu for taking the focus off your shutter. Consult your user's manual for complete info.

Take Focus off Shutter Button: Canon Cameras

Be sure to check your camera manual for confirmation on the Custom Function number for Back-Button AF in your EOS model. Here are examples of the C.Fn menu selection for recent EOS models:

EOS Rebel T3: C.Fn 7 (option 1 or 3) EOS Rebel T3i: C.Fn 9 (option 1 or 3) EOS Rebel T4i: C.Fn 6 (option 1 or 3) EOS 60D: C.Fn IV-1 (option 1, 2, 3, or 4) EOS 7D: C.Fn IV-1 (Custom Controls – Shutter, AF-ON, AEL buttons) EOS 6D: C.Fn III-5 (Custom Controls -- Shutter, AF-ON, AEL buttons) EOS 5D Mark II: C.Fn IV-1 (option 2 or 3) EOS 5D Mark III: C.Fn menu screen 2 (Custom Controls -- Shutter, AF-ON, AEL buttons) EOS 1D X: C.Fn menu screen 5 (Custom Controls -- Shutter, AF-ON, AEL buttons)

The terminology often used on the menu for this particular custom function may seem a little confusing, so an explanation is in order. In cameras without a separate C.Fn called "Custom Controls", the function is headed "Shutter/AE lock button", or similar wording.

What this means is that anything *before* the slash mark refers to how the shutter button will behave. Anything *after* the slash tells you how the rear button will work if that option is selected. Using the popular EOS 50D as an example, here's what you see on-screen, and here's what it means:

o: Metering + AF start (note: there's no slash here)

Factory-default setting. You activate camera's meter and AF by pressing shutter button half-way down. Rear AF-ON button also does same if it's pressed, so you don't get the benefits of removing AF activation from the shutter button when this option is set.

1: Metering + AF start / AF stop

AF is still at shutter button. Pressing the rear button will actually LOCK the focus; potentially useful if you shoot a lot of moving subjects in AI Servo AF and prefer to activate AF with a conventional half-press of shutter button. Focus is unlocked by removing thumb from back-button.

2: Metering start / Meter + AF start

Back-button AF activation. Shutter button no longer activates AF, but of course fires the shutter. Metering is continuously updated — if you shoot a sequence of pictures, the camera takes a fresh meter reading for each one. There's no locking of exposure, unless you separately press the AE Lock button (this last item is not possible on some EOS models).

3: AE Lock / Metering + AF start

Back-button AF activation. Difference between this setting and option 2 directly above is that when you press the shutter button half-way, your exposure is locked and won't change until you pull your finger off the button entirely. Thus, if you shoot a sequence of pictures in any auto exposure mode, the exposure setting used for the first shot is used for each subsequent shot. Can be useful if you were using back-button AF to easily lock focus and shoot a series of portraits, where you wouldn't expect lighting to change.

4: Metering + AF start / Disable

Similar to setting "O" above, but now, the camera's rear AF-ON button is disabled. AF activation is at the shutter button. Convenient if you're worried about accidentally pressing the back-button and don't want to use back-button AF.

Take Focus off Shutter Button: Nikon

I was unable to find as much documentation for Nikon cameras, but here is a bit of info for moving the focus off the shutter and onto the back for some of the popular models.

D3100, D3200, D5100, D80

Menu Option Buttons AE-L/AF-L button AF-ON

D700

(option a5:AF Activation - set to AF-ON button only).

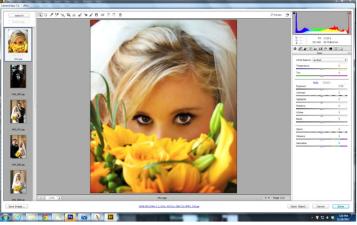
D7000

Assign the AE-L, AF-L button on the back of the camera to be AF-On. To do this, go to your camera menu and look in the custom setting menu (the pencil). In the custom setting menu, go to Controls, and then choose F5 "Assign AE-L/AF-L button." Within this menu, choose "AF-On."

2) Now you need to set up the camera so it will take a picture even when focus has not been achieved. This is preferable in most situations because you may have focused and recomposed the shot. To do this, go to your Custom Setting Menu and choose Autofocus. Within this menu, select A1 "AF-C priority selection" and set it to "release." Then set AF-S priority selection to "release" as well.

(I am not a Nikon user and I don't really understand the need for step two, but this may be specific to the functions of the D7000.)

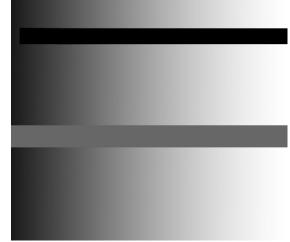
Photographing in RAW



Capturing your images in RAW format provide you with the entire amount of data that your camera is capable of recording.

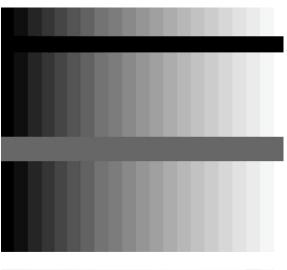
JPG Captures colors. RAW Captures colors.

RAW provides you with the full range of digital data for image processing.



Images captured in RAW have a wider range of image corrections for _____, ____, ____, ____ and more.

When you opt to capture in Jpeg mode, your camera compresses your file—sort of like squeezing a sponge causing you to lose ______all for the sake of having a smaller file.



This smaller, compressed Jpeg file loses about % of the information your camera was capable of capturing. This means that your editing of exposure, color, contrast and such is much more segmented making adjustments to your images more _____.

Photographing Using Natural Light

Quality of Light

Specular:

Diffused:



Auto White Balance



Daylight Setting



Cloudy

Shade



Tungsten



Fluorescent (cool)



Custom



Kelvin

Flash

Color Temperature 1000-2000 K 2500-3500 K 3000-4000 K 4000-5000 K 5000-5500 K 5000-6500 K 6500-8000 K 9000-10000 K





Light Source Candlelight Tungsten Bulb (household variety) Sunrise/Sunset (clear sky) Fluorescent Lamps **Electronic Flash** Daylight with Clear Sky (sun overhead) Moderately Overcast Sky Shade or Heavily Overcast Sky

Photographing with Natural Light

To create texture and detail, learn to see and use _





Know How to Use The Light!



Broad Lighting



Short Lighting

Broad or Short?



The above image is _____ lit.



The above image is _____ lit.



The above image is _____ lit.



The above image is _____ lit.



The above image is _____ lit.

Broad

or

Short?



The above image is _____ lit.

The above image is _____ lit.



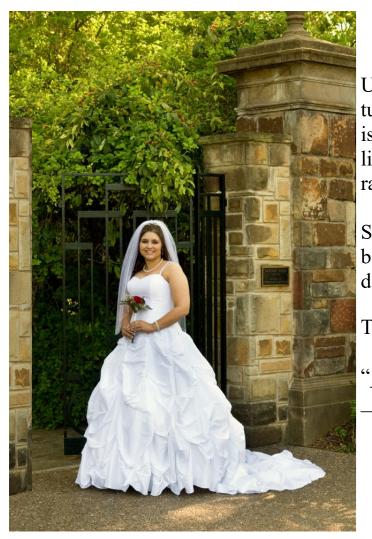
The above image is _____ lit.

Know How to Use The Light!

The image at right is created with _____ lighting.

Since the light seems to come from all directions and does not created any noticeable





Using the same location and simply turning the bride so that one side of her is "shielded" by the thick foliage, the light becomes more directional as it rakes across her from the right side.

Shadows now appear on the left because there is no open sky in that direction.

"

This technique is known as:

Know How to Use The Light!





Having a

overhead creates a more directional pattern of light because the light comes in primarily from the side, much like lighting from a window. Blocking overhead or side light to create a directional lighting pattern is a technique known as



To Move Your Photography Forward, Start at The Back!

Selecting the right background for your outdoor and locations sessions can be something of a challenge. This assignment is designed to help you discover what makes a great background and how to use you background to create images with impact. While you will be completing this assignment in a few days, the process of finding new and interesting places to photograph will continue throughout your career.

You should develop a variety of locations to photograph to complement a variety of subjects. Having a larger library of scenic places to photograph allows you to better serve your client's needs and desires for unique and interesting photographs.

GETTING STARTED

Begin this assignment by spending a few hours driving around your area with the sole purpose of finding places to work. You will need to change the way you look at the world around you. Quit seeing literally and start seeing with a creative eye. Learn to see designs, shapes, patterns, lines, angles, and natural movement in various settings.

Drive through neighborhoods, city parks, downtown locations, industrial parks and rural country sides. Look for interesting porches, walls, graffiti, bridges, windows and doors, landscaping, textures and colors.

While many locations you find will be open for public access, there will be locations that interest you that are on private property or residences. Try to meet or make contact with the person who can give you permission to photograph on the property. If it is a great location, offer a complimentary session and wall portrait to the owner if they will allow you to return from time to time with clients. Be sure to take some business cards.

Also scout around various scenic areas such as lakes, rivers, canyons and state and national parks.

WHAT MAKES A GREAT BACKGROUND?

Think the 5 D's:

- Darker
- Depth
- Dense
- Design
- Diverse

Generally, I like a medium to dark background. This way, the subjects will stand out from the background. This is not to say that you cannot have light color backgrounds - you need those too, but a darker background will give you great results with little finishing work.



Darker

The dark background on the left makes the little cowboy stand out.

The bright highlights and sunlit water in the background on the right does not set the couple apart from the background making the background seem "busy".



Depth

Try to see your background as something other than a one-dimensional backdrop, but rather a three-dimensional location with depth.

See if you can spot foreground, middle ground and background in the locations that you scout.



Dense

Try to find locations with dense foliage so as not to see through it.

Try to avoid backgrounds that reveal hot spots of sunlight and shadow.

The image on the left has uniformly even tones that keep the viewer within the scene.

The bright areas in the image on the right take the viewer away from the subject.







the wall.

Design

Look for leading lines, patterns and diagonals in a location. One-dimensional backgrounds such as a wall can work great if there are architectural or decorative designs.

While the background on the left is one dimensional (flat), it does have strong design elements that complement the image.

The image on the right has strong diagonal and leading lines and strong repetition because the image was taken down the length of the wall rather than shooting straight into





Diverse

You will not really want to drive all over town photographing, so try to find locations that offer three or four unique perspectives during a session. Getting variety from a single location is important when you have a limited time for sweet lighting.



BECOME A STUDENT OF LIGHT

As you begin your quest to find great backgrounds and locations, look first for the elements of a great background, but your job is not yet done. You now have to decide when the best time of day is to work in each location. For many locations, you may find the lighting is best in the morning or late afternoon, while other locations will only have a few minutes in the day where the lighting is suitable.

You will also discover seasonal changes in the lighting. Some locations photograph great in spring and fall but lack great lighting in the summer. Try to find the time of day where each location has its' "sweet" lighting.

PRO TIPS

*Metal buildings, overhead doors, vents and stairs can provide great background opportunities Try to work in your locations when the lighting on the background is the same lighting on your subject. *Scout around churches and universities for interesting places to photograph. Take your 200mm lens when you are scouting and look for different perspectives through the camera

*A good background will often make an interesting image even if no one is in the scene.

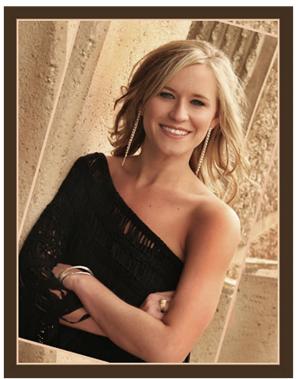
*Higher camera angles will help eliminate bad horizon lines and distracting backgrounds.

*Consider "safari" sessions to other great locations out of your immediate area.



ASSIGNMENT

- Find at least three locations to photograph and find at least three unique perspectives in each of the locations (Three locations should yield 9 "backgrounds")
- Create 9 images (3 from each location) of just your background selections.
- Create 9 separate portraits, one from each of your new perspectives
- Describe why you choose each of your new backgrounds and what type of session you might expect to photograph there





Describe what it is that makes the background work in each of the 6 images.

Image 1

Image 2

Image 3



(Image 2)

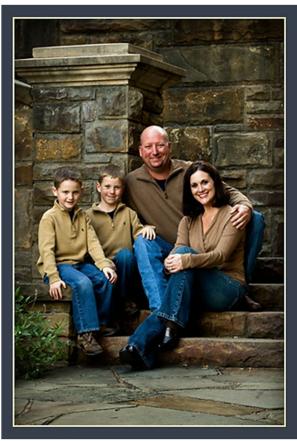








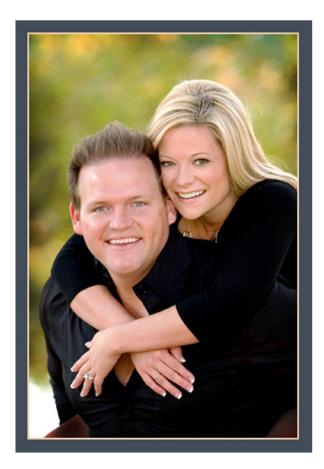
Image 4

Image 5

Image 6



(Image 5)



(Image 6)

Assignment

This is a rather simple assignment to do, but you should take the time to really observe what you see in your viewfinder as you go through the process.

You should also really study the results of your images. I encourage you to print them out when you get home and lay them side by side to get the most out of your evaluation.

GETTING STARTED

We are going to begin by setting up a series of "test images".

- Select a large background area such as a large area of greenery or a background with an architectural interest
- Position your subject about 10 feet from the background and instruct them not to move
- Position yourself about 10 feet away from your subject and do not move
- Create a series of images without you or your subject moving using 28mm, 50mm, 75mm, 100mm, 150mm and 200mm
- Repeat the entire series with your subject 20 feet away from the background and with you 10 feet from the subject

EVALUATE YOUR IMAGES: Describe what you found:

How did the lens choice impact depth of field with the subject 10 feet from the background?

How about at 20 feet?

How did the lens choice impact the relationship of the subject to the background at 10 feet?

How about at 20 feet?

How did the lens choice impact what you saw in the background or what you did not see in the background?

If you or your subject had been allowed to move left or right (keeping the same 10 feet and 20 distances), could you have found better areas in your background to use with your subject?

What is your overall impression of the results?

The next exercise is to evaluate the lens choice for a given composition.

- Use the same background location that you selected in the previous series.
- Position your subject about 10 feet from the background
- Create a "head and shoulders" portrait using your 28mm lens. You can get as close as you have to get a proper composition.
- Next, try to get the exact composition and framing using 50mm. Back up as needed to keep the subject the same in the viewfinder.
- Repeat using 75mm, 100mm, 150mm and 200mm. Keep backing up so that each image is as close to the same crop of your subject as possible
- Repeat the entire series with your subject 20 feet from the background

EVALUATE YOUR IMAGES Describe what you found:

How did the lens choice impact depth of field with the subject 10 feet from the background?

How about at 20 feet?

How did the lens choice impact the relationship of the subject to the background at 10 feet?

How about at 20 feet?

How did the lens choice impact what you saw in the background or what you did not see in the background?

If you or your subject had been allowed to move left or right (keeping the same 10 feet and 20 distances), could you have found better areas in your background to use with your subject?

What is the overall impression of the results?

Bonus Question

Why did we not do either of these exercises with the subject standing right next to the background?

Your Vision Is in The Lens You Use!

So much of capturing your vision for any given image is in selecting the right lens. This assignment is designed to help you discover how lens selection changes the perspective of the background as it relates to sharpness and as it relates to your subject.

WHAT YOU SEE AND WHAT YOU GET

The focal length (mm) of the lens determines the "angle of view" - or how much you see in the image. The focal length is consistent in terms of how much or how little is captured in the scene. For example, if you take 100mm and cut it in half to 50mm, you will see twice the area. If you double 100mm to 200mm, you will cut the scene in half. This is true at any focal length, so taking 28mm and doubling it to 56mm cuts the scene in half.



These images illustrate using a focal length of 35mm and then doubling it to 70mm.

COMPRESSION IS YOUR FRIEND

The focal length of the lens not only determines how much is seen in the background, but it also determines the compression - or how close the background appears to be to the subject. The longer the focal length, the closer the subject appears to be to the background.

This is especially helpful when you are dealing with a large background that is important to the scene. By working farther away from the background and working with a telephoto lens, the photographer is able to scale a very large background to an appropriate size as it relates to the subject. The photographer is also able to use a much smaller portion of the large background thereby limiting the image to the most desirable part of a background.



The image on the left was taken at about 28mm. The image on the right is at 75mm - more than doubling the angle of view and greatly increasing the compression.





These images are a wonderful example of how to control the "angle of view". The image on the left is at 28mm. Notice how much floor in front and wall on the right we have to see in this full-length portrait. I could not move any farther to the right because I would start seeing daylight between the columns.

The image on the right was done by moving to 150mm and backing up so that I get the exact same crop of the bride, I am able to eliminate much of the angle of view which did not add any interest to the image. This also allowed me to move much

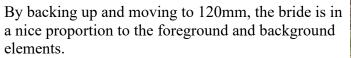


further to the right to utilize more of the columns in the composition.

Notice how the compression makes the empty brick wall in the back look much bigger and much closer.



Notice how the 28mm lens on the left gives the image depth, but how this makes the foreground and background overpower the bride.





HOW TO GET THREE FOR ONE

Having an assortment of focal lengths allows you to work more efficiently. In this example, I really have two completely different looks to offer this bride from the very same pose. By creating full length, 3/4 length and close up images from the same pose using different focal lengths, I am able to get a lot more variety without doing a lot more work.









The compression of the 200mm makes the water appear very close to the bride when she is actually safely away and in not danger of getting her dress wet.

GET RID OF DISTRACTIONS

The wider the lens, the more is included in your images. I prefer to control what is included in my images through lens selection.

The image below shows a nice background, but I hate seeing the bright sky in the upper corners.

SELECTIVE BACKGROUNDS

I love the design and balance of the bridal portrait on the left with my 28mm lens, but I REALLY love the way the 200mm lens allows me to isolate the background to the single water element.





The image on the right allows me to take the best part of that scene and include only the area that best suits my composition.



PRO TIPS



For really bad backgrounds, use 200mm at F2.8 and get as close to your subject as you can

Use the f-stops to control the sharpness of the background

Evaluate these two images:





Try to use two cameras, one with a 28-75mm and the other with the 70-200mm.

Always use the 70-200mm on a tripod

Compose your images for your 70-200mm lens and then use the other camera for closer images that can be hand-held



- A. Describe the difference in the angle of view:
- B. Describe the difference in compression:
- C. Describe the difference in depth of field:

Selecting Lenses

We really begin to realize the creative potential of photography when we discover the wide array of lens options that are available. We are going to examine various types of lenses and their uses, but don't feel like you have to rush out and buy every lens we talk about. Take the time to really learn the basics of photography, and gradually add to your photographic equipment collection. I often see people who have spent hundreds and thousands of dollars on equipment, yet don't even know the what the f-stops are for.

We will look at two types of lenses; fixed and zooms. "Fixed" lenses have one focal length (magnification) while zooms have a range of focal lengths. Common fixed lenses are: 28mm, 50mm (normal), 135mm, 200mm and 500mm. There are some advantages of owning fixed lenses. They generally have larger lens openings than zooms and they are usually sharper.

Normal Lens

The term, "normal" lens refers to the 50mm lens when talking about 35mm photography. A 50mm lens captures an image in about the same perspective as the eye sees the image. There is little or no magnification of the image at all. It is a general-purpose lens. While it is not particularly versatile, it still has a place in your camera bag.

Wide-angle lenses

Wide-angle lenses are the perfect choice for photographing indoors where space is limited, or larger groups, and is a great choice for landscape and scenic photography.

Any lens with a focal length smaller than 50mm is considered to be wide-angle. These lenses record a "wider expanse" than the normal lens without having to back up. The most common wide-angle lens for 35mm photography is the 28mm. It "sees" almost twice as much area as the normal lens. (25mm would exactly double the coverage area of a 50mm lens) A 28mm fixed lens usually has F2.8 as it's largest lens opening. This is an economical option for photographers.

In general, a wide-angle lens has a tendency to distort horizontal and vertical lines, especially on the "wider" wide-angles. For example, when photographing a building that is several stories tall, the top of the building may appear narrower than the bottom. This distortion effect is more pronounced with wide-angle lenses than with other lenses, however, it does create interesting perspectives.

Wide-angle lenses have a large depth of field, so backgrounds and foregrounds almost always appear sharp.

Pro Tips:

*Wide-angle lenses allow you to work closer to large groups. This helps in the fact that your flash is more efficient at closer distances.

*Avoid using wide-angle lenses for close-up photographs of people. Distortions created by this lens can be very unflattering.

*A 28mm lens takes in almost twice the visual area of a 50mm lens.

Telephoto lenses

Telephoto lenses have a tendency to "compress" objects in the background with the subject, making them appear closer together than they really are. They are also an excellent choice for "people" photography. Telephoto lenses have a shallower depth of field than a normal or a wide-angle lens. This helps the photographer eliminate background distractions when taking portraits.

Any lens over 50mm are considered to be telephoto as they begin to magnify the image. Common telephotos are 135mm, 200mm and 500mm. A 100mm lens doubles the image size from a 50mm lens. 200mm doubles 100mm. This makes an image taken at 200mm to be 4 times larger than the same image if taken at 50mm. The larger the focal length, the more difficult it is to hold the camera steady. A sturdy tripod is invaluable, especially in low light.

Pro Tips:

*To hand-hold a telephoto lens, you should use a shutter speed equal to the focal length of the lens. For example, a 135mm lens will require a shutter speed of 1/125 to hand-hold with reasonable sharpness. A 200mm lens requires 1/250 to hand-hold.

*Use higher ISO to achieve faster shutter speeds. Telephoto lenses bring objects that are far away, closer. This is the ideal lens for wildlife, sporting events, and other situations where you cannot get very close to the subject.

Zoom lenses

Zoom lenses are actually many lenses built into one. They combine a minimum and a maximum focal length and give you all of the focal lengths in between. Two common 35mm zoom lenses are the 28-85mm and the 70-210mm. The 28-85 gives you a wide-angle to a medium telephoto. This is a great choice for people who enjoy landscapes and scenics. The 70-210 is a medium telephoto to a long telephoto and is a good choice for sporting activities and wildlife photography.

Zoom lenses may not be quite as sharp as "fixed" lenses and may not provide very large maximum lens openings, making them less effective in low light.

Pro Tips:

*The real quality of a zoom lens is in its sharpness and its functionality. Zooms with a maximum lens opening of F2.8 are far more efficient than ones with only F5.6 of F4.5 maximum openings. The 2.8 may cost twice as much, but will be worth it in the end.

* Consider acquiring a 28-85 and a 70-210 zoom, rather than a single lens that tries to cover that full range.

Teleconverters

Teleconverters take a lens and double or triple it's focal length. With a 2x converter, a 50mm lens becomes a 100mm. A 70-210mm becomes a 140-420mm lens. With a 3x converter, a 50mm becomes a 150mm. The converter mounts to the camera just like the lens and then the lens mounts to the converter. They are fairly inexpensive at around \$100 and up.

What may seem like a good idea at first, will eventually turn out to be frustrating and aggravating - at which point you will have a \$100 paper weight! These converters reduce your effective f-stop by two or three stops, depending on the converter. They also reduce the contrast and sharpness of your lens considerably! With lenses costing hundreds of dollars, it could only happen in a dream that we would only need to spend \$100 to achieve such results.

The Basics of Flash Photography



There are three things that you need to know when using a flash:

No. 1 - The guide number of your flash No. 2 - The correct flash sync for your camera No. 3 - The flash to subject distance.

Guide Number: The guide number of your flash is simply a rating of how *powerful* your flash is, when used at a particular ISO. You will find the Guide Number in the "specs" pages of your flash's instruction book.



Flash Sync

Flash Sync: In order to use a manual flash, we also need to know the correct "flash sync" of the camera. This is the shutter speed that coordinates the flash with the shutter in the camera. Generally it is 1/125, but it may vary from camera to camera. Certain shutters sync at all speeds. Be sure to check your camera manual to determine your camera's sync.

Any time that you are using a flash, you must use the correct flash sync speed for your camera!

Failure to use the correct flash sync may result in a portion - if not most of your photographs to be black. This occurs when the flash fires and the curtain mechanism in the camera has not had time to get fully opened. The flash fires and the curtain blocks a portion of the film leaving a "clear" area on the negative. This clear area on the negative creates the black area on the photograph!



Guide No. (GNo.) (ISO 100, in meters/feet)

Normal Flash (Full Output) and Quick Flash (GNo.)

Flash Coverage (mm)	14	24	28	35	50	70	80	105
Normal Flash (Full output)	15/ 49.2	28/ 91.9	30/ 98.4	36/ 118.1	42/ 137.8	50/ 164	53/ 173.9	58/ 190.3
Quick Flash	Same as 1/2 to 1/6 manual flash output							

Guide number chart for Canon 600EX RT

Manual Flash (GNo.)

	Flash Coverage (mm)								
Flash Output	14	24	28	35	50	70	80	105	
1/1	15/	28/	30/	36/	42/	50/	53/	58/	
	49.2	91.9	98.4	118.1	137.8	164	173.9	190.3	
1/2	10.6/	19.8/	21.2/	25.5/	29.7/	35.4/	37.5/	41/	
	34.8	65	69.6	83.7	97.4	116.1	123	134.5	
1/4	7.5/	14/	15/	18/	21/	25/	26.5/	29/	
	24.6	45.9	49.2	59.1	68.9	82	86.9	95.1	
1/8	5.3/	9.9/	10.6/	12.7/	14.8/	17.7/	18.7/	20.5/	
	17.4	32.5	34.8	41.7	48.6	58.1	61.4	67.3	
1/16	3.8/	7/	7.5/	9/	10.5/	12.5/	13.3/	14.5/	
	12.5	23	24.6	29.5	34.4	41	43.6	47.6	
1/32	2.7/	4.9/	5.3/	6.4/	7.4/	8.8/	9.4/	10.3/	
	8.9	16.1	17.4	21	24.3	28.9	30.8	33.8	
1/64	1.9/	3.5/	3.8/	4.5/	5.3/	6.3/	6.6/	7.3/	
	6.2	11.5	12.5	14.8	17.4	20.7	21.7	24	
1/128	1.3/	2.5/	2.7/	3.2/	3.7/	4.4/	4.7/	5.1/	
	4.3	8.2	8.9	10.5	12.1	14.4	15.4	16.7	

III Determining the aperture and flash output level in the Manual mode

In the Manual mode, use the guide number table and the following equation to calculate the aperture, flash output level, and shooting distance to obtain the correct exposure.

• The guide number (GN at ISO 100; m/ft) indicates the amount of light generated by the flash. The larger the number, the greater the flash output.

Guide number (ISO 100, m/ft)

Flash	Zoom-head position (mm)										
output level	*1	*2	14*3	17*8	24	28	35	50	70	85	105
M1/1	12.5/41	16/52	17/56	19/62	30/98	32/105	38/125	44/144	50/164	53/174	56/184
M1/2	8.8/29	11.3/37	12/39	13.4/44	21.2/70	22.6/74	26.9/88	31/102	35.4/116	37.5/123	40/131
M1/4	6.3/21	8.0/26	8.5/28	9.5/31	15.0/49	16/52	19/62	22/72	25/82	26.5/87	28/92
M1/8	4.4/14	5.7/19	6.0/20	6.7/22	10.6/35	11.3/37	13.4/44	15.6/51	17.7/58	18.7/61	19.8/65
M1/16	3.1/10	4.0/13	4.3/14	4.8/16	7.5/25	8.0/26	9.5/31	11/36	12.5/41	13.3/44	14/46
M1/32	2.2/7	2.8/9	3.0/10	3.4/11	5.3/17	6.0/20	6.7/22	7.8/26	8.8/29	9.4/31	9.9/32
M1/64	1.6/5	2.0/7	2.1/7	2.4/8	3.7/12	4.0/13	4.8/16	5.5/18	6.3/21	6.6/22	7.0/23
M1/128	1.1/4	1.4/5	1.5/5	1.7/6	2.6/8.5	2.8/9	3.4/11	3.9/13	4.4/14	4.7/15	4.9/16

*1 With the Nikon Diffusion Dome attached and the wide-flash adapter in place

*2 With the Nikon Diffusion Dome attached

*3 With the wide-flash adapter in place

Guide number chart for Nikon SB910

Calculating Exposure

The power of the flash determines the exposure in flash photography. Unlike non-flash photography, we do not really have a choice of f-stops and shutter speeds. The f-stops are going to be dictated by the flash output and the shutter speed is dictated by the camera's sync speed.

We do not use "equivalent exposures" in flash photography.

Let's work on finding the single correct exposure when using a manual flash. In the examples to follow, **It is assumed that the G# is expressed at 100ISO!**

To determine the correct exposure when using a flash in "manual" mode, use the following formula:

G# / Flash to Subject Distance = F-stop

For example, if it is given that: G# is 110 and the flash-to-subject distance equals 20 feet: 110 / 20 = F5.6 (rounded to the nearest stop)

The correct exposure would be F5.6 and the shutter speed would be determined by the camera's sync. If your camera syncs at 1/60, then the exposure is F5.6 @ 1/60. If your camera syncs at 125, the exposure would be F5.6 @ 1/125.

If the flash to subject distance changes to 5 feet, then: 110 / 5 = F22

If our G# is 60 and the distance is 20 feet, then: 60 / 20 = F2.8

At 5 feet, we get:

60 / 5 = F11

Again, the shutter speed is a "given" based on the camera's sync.

Flash Set Up Check List

Camera set to	ISO	
Shutter speed at		
Flash set to	mode	
Camera set to	mode	
Flash Zoom Head to _	Zoom	
Flash ratio set to		

Using the "Inverse Square Law"

Cut distance in half --- stop down _____ stops *Example*: If 10ft = F11, then 5ft = F_____

Double the distance --- open up _____ stops *Example*: If 10ft = F11, then 20ft = F_____

The quality of light is determined by the _____ of the light source. On camera flash is _____ and ____!

Getting the flash off the camera: Complete control of the flash and exposure ______ lighting Not bound by shooting _____ Light control using modifies (umbrellas, softboxes) Balance flash to

Control the output of your manual flash:

1.4 2 2.8 4 5.6 8 11 16 22 32 (Large openings) (Small openings)

Closing the lens by one stop cuts the amount of light reaching the sensor in half. (1/2x) Closing the lens by one stop_____ Closing the lens by two stops_____ Closing the lens by three stops_____ Closing the lens by four stops.....____

Advanced Flash Techniques Fill Flash

When your subject is backlit, try using fill flash to add light to your subject. This helps to bring the exposure on the subject closer to the exposure of the background. This keeps the background from being too bright and washed out or your subject from being to dark and underexposed.

To use fill flash with a manual flash, read the meter for the background using the correct sync speed. For example, since your camera syncs at 1/125, then meter the background to find the F-stop that corresponds to 1/125. Then, read the flash meter to determine the F-stop.

Next, determine the output of your flash for a given distance, then reduce the power of the flash accordingly to get the correct exposure from the flash.

Example 1:

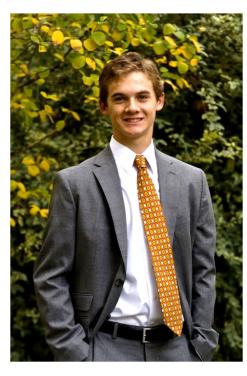


The background is F16 at 1/125



Setting up the flash at _____ feet yields an output of F16 from the flash at full power.

Example 2:



The background measures F5.6 @ 1/125.

The flash output at 10ft is

Reduce the power of the flash to ______ to get an output of 5.6.

Where would the output setting of the flash be if the flash were set up at 5 ft?

The background measures F4 at 1/125.

What would the output setting of the flash be if the flash were set up at 10 ft?

At 7 feet







Bounce Flash:

"Bounce flash" creates a much softer quality of light and helps to eliminate distracting shadows. Bounce flash requires a room with relatively low ceilings - about 10 to 14 feet. The ceiling should be a light color, preferably white. This is important because you will be lighting your subject with the ceiling - not the flash. The color of the ceiling will be reflected in the overall color of the photograph.

To use bounce flash, calculate the distance from the flash to the ceiling, and add to it, the distance from the ceiling to the subject. Take that total distance and divide it into the guide number of your flash. The resulting number will be an F-stop. Finally, take that F-stop and "open up" the lens one or two additional stops. This is necessary because the ceiling does not efficiently return the light back down to the subject. Opening up this extra stop or two compensates for this loss of light. I suggest opening up one additional stop for lower, white ceilings and two additional stops for higher ceilings.

One of the "tricks" about using bounce flash is to know that light comes off of the ceiling at exactly the angle that it strikes the ceiling. What this means is that you want to angle the flash so that is strikes the ceiling at the halfway point between you and the subject. Pointing the flash straight up will mean that the light comes straight down - lighting yourself and not the subject. It is also possible to point the flash too far beyond the halfway point and therefore directing the light behind your subject. It takes a little practice.

If you have the chance to watch photojournalist on the news while they are shooting using bounce flash, you will notice that some will have a white notecard attached to the flash with rubber band. This card helps to redirect some of the light towards the subject with a bit more efficiency than just bouncing the flash off the ceiling. This also helps to add light

to the subject's eyes and fill-in some of the shadows on the face that are created from the light coming off the ceiling.

The image at right was taken with bounce flash in a room with 12 foot, white acoustical tile ceilings which meant I would open up two stops on my bounce flash exposure.

The flash distance up to the ceiling and back down was 15 feet.

My exposure was _____ at 1/125.



Dragging the Shutter

You can take flash photographs at shutter speeds that are slower than the flash sync. For example, if your shutter syncs at 1/125, you can also use 1/60, 1/30, 1/15, 1/8 and so on. This is called dragging the shutter. Dragging the shutter allows you to record some of the ambient light along with the flash exposure. To do this, figure your F-stop for the flash exposure. Then, read the meter at that F-stop to determine the corresponding shutter speed at that F-stop. Set camera to the corresponding shutter speed.

For Example: A room meters F2.8 at 1/30. Let's assume you are going to shoot your flash at F5.6. Shooting at F5.6 at 1/60(or your given sync) creates a properly exposed subject but the room appears very dark. Meter the room exposure at F5.6 and the shutter speed drops to 1/8. (Remember "equivalent exposures" from the Basic Class?) Now, take the photograph at F5.6 at 1/8 and you will have a well exposed subject and also record the lighting in the room. You will need a tripod at these slow shutter speeds and a subject that is not moving about.



The background measured F2.8 at 1/15.

My flash was 10 feet away.

At full power, my flash output is F____.

To get my flash to fire at F2.8, I had to set the power output setting to

My shutter speed at left was 1/125.



What shutter speed did I use to balance my flash to the background?

My finals settings on the camera were: F_____. My flash was at _____ power.

Flash Worksheet (Assume G#110 at 100 ISO and 1/1 unless otherwise stated)

	posure when the flash	to subject distance is		
A. 5ft @1/1	Flash Power	Flash Power $(a) 1/4$	Flash Power	
B. 20ft @1/1	<u></u> <u>@1/2</u> <u></u>			
C. 7ft @1/1	@1/2	@1/4	- $@1/8$ $$	
D. 10ft @1/1	<u></u> <u>@1/2</u>	<u> </u>	<u> </u>	
E. 15ft @1/1	<u> </u>	<u></u> <u>@</u> 1/4 <u></u>	<u> </u>	
2. How many stops a	re represented by:			
1/8 1/32	1/4 1/4 1/4	/16 1/2	1/64	_
3. What is:				
1/8 of F11	1/4 of F22	1/32 of	F16	
A. 5ft	would be required to fi B. 20ft	C. 7ft		ce is:
D. 10ft	E. 15ft			
What are your setting	res F4 and the backgro [s? B. So			rom the subject.
The background read	hing a bride on the cen s F8 @1/2. What are y B. Set	our settings?	•	want to use F4.
	hing a group in a room feet. What is the expos			Fhe distance up
8. What is the correct	exposure at 400 ISO w	hen the flash to sub	ect distance is:	
20ft@	B. 5ft	(a)		
15ft @	D. 10ft	@		
7ft@				

9. You are using 400 ISO. The flash is 15 feet away. You want to shoot at F4. What are your flash settings?

10. You are using 400 ISO. The flash is 5 feet away. You want to shoot at F4. What are your flash settings?

Word Problems

1. You arrive at a home in the late afternoon to do an outdoor family portrait in their backyard. They want to be photographed standing inside their new gazebo which overlooks a lake that is in bright sunlight. Since they are in the shade, you:

- A. Properly expose for the family and let the background blow out
- B. Expose for the background and lighten the family in Photoshop
- C. Use a flash in TTL with the camera set to A
- D. Manually set your camera to expose the background and manually set the flash to fire about ½ stop less than the background

2. You are trying to photograph a senior who loves skateboarding. He wants you to capture a stunt that he has learned on his board, but every time you try to take the shot, the camera hunts for the focus and you miss it. How do you remedy this?

- A. Set the camera so that it chooses the focusing point automatically
- B. Change the focus control to only focus at the single box in the center of the frame
- C. Move the focus control off of the shutter button so that the shutter no longer causes the camera to focus when pressed
- D. Take a lot of images and hope one turns out

3. You are photographing an engaged couple on an overcast day when you notice their eyes are dark from shadows. You decide to use your flash to fill in these shadows but you realize the exposures are inconsistent: Wide angle images are under-exposed but when you zoom in, the images are over-exposed. What is the solution to stop this from occurring?

- A. Don't zoom the lens, simply step closer or further back to compose the shot
- B. Change the exposure so the eyes are no longer dark and don't use the flash
- C. Set the flash to $\frac{1}{2}$ power
- D. Turn off the zoom head in the flash

4. You are photographing a child in the wildflowers late in the day. You are using you 70-200mm zoom and the camera meter tells you the exposure is F4@60 at 100 ISO. The images taken at 70mm look great, but all of the images taken that were zoomed to 200mm are blurry. What is the remedy?

- A. The problem is shallow depth of field: Change the exposure to F8@60 so you have more depth of field
- B. The problem is not enough light: Increase the ISO and set your camera to "A"
- C. The problem is camera shake: Increase the ISO to 400 and set your camera to F4@250
- D. The problem is focus: Because the zoom is so strong, set the camera to use only the center box for focus

5. You are photographing the 8th grade choir. They are standing on risers and there are five rows of students. Which row do you focus on?

- A. Focus on the first row 1
- B. Focus between rows 2 and 3
- C. Focus in the middle row 3
- D. Focus between rows 3 and 4
- E. Focus on the last row 5

6. Your flash photos are turning out very harsh. The best solution is to:

- A. Use an opaque, white cap that fits over the front of the flash to soften the light
- B. Pull out the clear, plastic filter that is built into the flash and let it cover the front of the flash to soften the light
- C. Power down the flash so it is not so bright when it fires
- D. Move the flash further away from the subject
- E. Any of the above will work
- F. None of the above will work



Body Posing

There is so much wrong with the image on the left, it is a great place to start with body posing. Let's begin:

- Shoulders are square to the camera
- Hips are square to the camera
- Elbow pointed straight into the camera
- Showing the back of the hand
- Right arm in tight to the body
- The entire pose is in a straight vertical line
- Weight on the front foot.

So, what can we do to correct the lack of good posing in this image? Let's examine a few guidelines to improve the pose.

Turn Feet Away

With the feet turned to the camera, it has the effect to broaden the hips and create a straight body line. (right)

Turning the feet away from the camera lines up the body to create an angle throughout the shoulders and hips. Placing the weight on the back foot helps this as well.





Turning the body creates a more graceful line to the shoulders and more curves to the hips. Graceful lines and curves create more interesting movement to the body.

In the image at left, I turned her feet and hips about 45° away from the camera. Notice how this creates curves and has a slimming effect on her hips when compared to the image above.

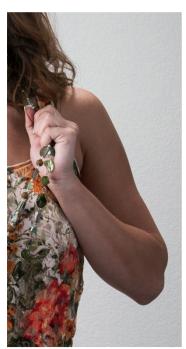


Don't Point Body Parts Toward the Camera

It is best to keep feet, legs, knees, arms, and fingers from pointing directly into the camera. Anything that points toward the camera appears larger and possibly distorted.

The image on the left is greatly improved by not pointing the elbow toward the camera. Instead, lower the elbow and use the bent arm to create a diagonal line.

One of the first rules of posing I ever heard was, "Anything that will bend...bend it." That is still a pretty good "guideline" to use. I try to say, "guideline" instead of "rules" because there are always compelling reasons to go against conventional wisdom.





Create Space Between Arms and Body

Arms clinched in tight towards the body tend to give the appearance of added weight. Opening the arm to create space between the arm and body has a trimming effect. I have, however, used the arm close to the body to "conceal" weight. Again, a guideline, not a rule.

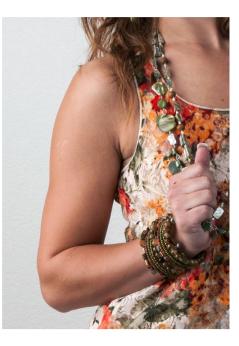
Don't Show the Back of the Hand

The back of the hand creates a large area of flesh tones that may compete with the face. Typically, you try to photograph the side of the hand.



Bend the Wrist

Bending the wrist creates a thinner appearance and nice lines. Bend the wrist downward (towards the ground). In other words, lift the hand upward rather than allowing it to hang downward.



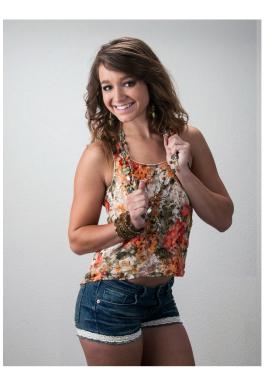




Before and After

So here are the improvements I made to the pose at left.

A curvier body, leading lines and movement created by the arms and opening the arms from the body show her figure in a much more flattering way. (see right)





In the image at left, the bride is posed with her feet and body turned squarely towards the camera. This creates broad shoulders and creates no shapely curves to flatter her upper body.

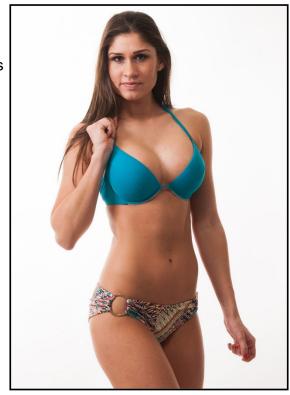
In the image at right, her feet are turned about 45° and the weight is on the back foot. This creates a nice diagonal line to the shoulders and shows off her feminine form.



With the weight on her front foot, her front leg appears heavier. (left)



Placing the weight on the back foot allows the subject to bend her front leg to create a more slimming pose. (right)



Feminine Posing (S-curve)

The classic feminine pose creates the curvy contours of the body at the hips and with the upper body. The head usually tilts towards the higher shoulder, but this rule can be broken to taste.

The usual method also includes having the subject place their weight on the back foot which leaves the front leg free to bend the knee to complete the bottom of the "S", although in the images at right, I got away with placing the weight on the front. The "S" can be reversed.

Oval Compositions

Oval compositions are also considered to be feminine poses and are often used in maternity photographs. (see below)





The Basic Pose (C-curve)

The classic basic pose (sometimes referred to as a masculine pose) creates the look of a "C" curve. The masculine tilt of the head is toward the lower shoulder. (see below)

While considered, "masculine", this does not mean that it might not

be appropriate to pose a woman or a child in a "C-pose".

The "C-curve" can also appear reversed.



Angular Posing

Angular posing accentuates the angles that are created with bent arms and legs as well as strong head tilts. These angles are created to create strong, visual compositions. (see right and below)

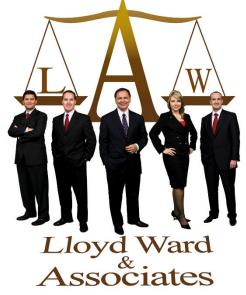




Assertive Posing

This style of traditionally, masculine posing uses body language to portray a sense of confidence. From standing with shoulders square to the camera to powerful placement of hands and arms to portray status, power and confidence, assertive poses work with both men and women. (see left and both images below)

The image at left demonstrates angular and assertive posing.



While appearing somewhat "protective", the girl in the image at right is also "assertive in her leaning in towards the camera to create a strong connection to the viewer.

This team of lawyers shows several assertive poses.



Group Posing

With group posing, it is generally preferred to create images with the subjects' heads on different levels rather than a straight line.

One of the ways to accomplish this is to pose in such a way so as to create "shapes". Common choices include, diamond, triangle, check mark, inverted check mark and more.





visually demonstrates strength and unity. The image right uses a strong, triangular design with is often used in posing families.



The image above uses straight line posing. It is not bad but probably not ideal.

The image at left creates a triangular composition. The triangle is a strong compositional pattern that



In the image at left, each head is on a different level but does not really have a clear shape to the design. I should have improved this by having mom and dad switch places. That would have created a better diamond shape.

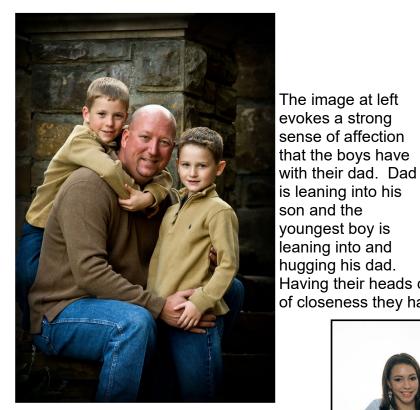


The image at left combines two check marks in the composition.

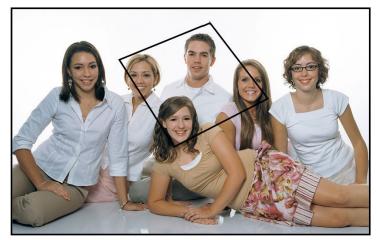
The image below places each head on its own level. The composition could be considered as almost oval. I always liked the "roundness" of the pose against the strong vertical and diagonal lines.



Having their heads close together really sets off the feeling of closeness they have with each other.



The image at right starts with a diamond shape in the center. There are also two check marks. I probably would have improved the entire composition if I had switched the two girls at the far left.



Posing Psychology

Posing groups of people introduces some consideration of their relationship to each other. Are they friends or colleagues? Are all of the subjects equal in rank or is there a hierarchy? For

example, the owner of a real estate firm posing with her office staff might need to be posed in such a way to suggest prominence for the owner. The psychology of posing might suggest the owner be placed in front with the staff standing behind to bring stature to the owner.

The posing in the image at right suggests that I (the handsome guy in the center with his hands on his hips) might be the leader of this band of photographers photographing in the mountains. My strong assertive pose and the fact that I am in front of the group leaves that impression.

In the image at right, there is no clear "leader" of this group as everyone appears as something of an equal. Posing everyone on an straight line might illustrate equal authority or a sense of "team". A sense of unity is created when subjects left and right of center turn their shoulders to the center.

Posing Groups of Two





Posing groups of two may also require some consideration of prominence, but for most images with two people, it is a matter of capturing relationships. Siblings, friends and couples poses allow for some degree of intimacy with the interactions of the two where images of co-workers or colleagues should shy away from any implied sense of affection.

Consideration of the subject's height may also come into play, especially when one subject is particularly taller than the other. While not trying to imply that anything is wrong with two people being the same or of notable height differences, there are some techniques that can help create visual compositions that bring out the sense of the closeness in a relationship and downplaying drastic difference in height.



In the image at left, the couple is very close to the same height. Compositionally, their heads

are almost on the same level, so the pose might be more interesting if their heads were not quite as even.

In the image at right, the couple's heads are pretty far apart which leads to some degree of loss in the feel of intimacy between the two.



While maybe not technically true, I consider the faces to be the center of interest in full length and up to half-body poses. As I move into images that are closer up, I consider the eyes to be the center of interest. I try to make sure the eyes of both subjects are on different levels. I try to create my poses by placing the two subjects' facial features at a 45° angle to each other. The late, Monte Zucker taught that one subject's eyes should be placed at the level of the mouth of the other subject. This sometimes requires using uneven ground, use of a posing stool, posing steps or creative posing to get one subject higher than the other.



In both of these images, the eyes of the girl are about the same level as the guy's mouth.

The poses feel more intimate when the two tip their heads closer together.

NOTE: *Monte Zucker, Don Blair, Hanson Fong and Doug Box are all excellent sources for posing technique.*



Facial Views

The three facial views are "full face". "2/3 view" and "profile".



Full Face

The nose and face are directly towards the camera.



2/3 View

The face is turned away from

the camera but not at profile.

back eye should be completely

Two keys to watch are: the

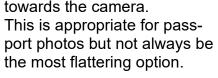
visible and there should be flesh visible between the nose

and the back cheek.



Profile

The face is turned 90° from the camera. The back eye is not visible, but the back eyelashes can be seen.



The image at left shows a pose where the nose breaks the plane of the back cheek, but not quite a profile. This causes an unflattering accentuation to the nose.

In the image at right, I turned her head so that the nose is comfortably contained inside the back cheek. This is much for flattering to this beautiful bride.



Overview of Studio Lighting Equipment Getting to Know Our Studio Lighting Gear

Main Light: This is the primary light that illuminates the subject. It is responsible for creating a pleasing "mask" of light for the face, creating texture and detail in clothing and illuminating the eyes.

Fill Light: The fill light is used to control contrast. By increasing the power of the fill you reduce the contrast in the photo. By decreasing the amount of light from the fill, you will increase contrast. The purpose of the fill light is to add just enough light to soften the shadows created by the main light.

Background Light: Used to illuminate the background in order to create depth or separation of the subject from the background. This light is usually placed low to the ground on a small stand about half way between your subject and the background.

Hair Light: The hair light illuminates the subject's hair providing separation from the background. This is especially important when photographing a subject with dark hair against a dark background. This light should only illuminate the hair and should not spill onto the subject's face.

Projector Spot: This light is used to project patterns onto a background using cut-outs of a specific shapes called, "cookies". The example at right shows a projected pattern.



Accent/Kicker Light: This specialty light adds a strong highlight on the subject—usually from the back to add interest or separation. The light coming in to the right side of the guy's face is an example of a kicker light.

Lighting Modifiers

Umbrellas: . Great for portraits as they provide uniform diffused light. They are available in a variety of sizes and materials. Select white, silver or gold, depending on the warmth of light you want to direct onto your subject.

SoftBox: Available in different sizes to help control the contrast of the light. Smaller softboxes produce higher contrast light while the larger softboxes provide a softer light.

Strip Light: A narrow softbox—great as a hair light or as a main light.

Scrim: Translucent diffusion panels placed in front of a light source to soften the light.

Snoot: When attached to strobes, snoots produce a round "spotlight" effect. Some have a focusing capability to allow you to control the spread of the light.

Barn Doors: These attach to your strobes to control light coverage. They usually have 2 or 4 hinged flaps that move independently and adjust how wide or narrow an area the light covers.

Louvers: Blinds attached to a softbox that open and close to help control the volume of light and the direction of the light coming out of the softbox.

Gels: Filter sheets used over light sources to change colors of backgrounds or correct the light balance. There are also gels to help diffuse light.

Lighting Accessory Gear

Reflectors: Reflector come in many shapes and sizes and are made from numerous materials. They are used to reflect or bounce light back into shadow areas to help illuminate details. Reflectors can be made from cardboard, metal, or fabric, and are usually white, gold, or silver.

Gobo/Flag: Gobo comes from the words "go between". Gobos are usually black cards or "flags" that are placed in front of the light source to block unwanted light. They are usually used to keep light from hitting a particular spot on the subject or to cast a shadow on the background.

Lighting Terms

Catch light: The points of light created by the light source that appears in the subject's eyes. The catch lights traditionally should be at either the one o'clock or eleven o'clock position.





Rim light: The bright, outer glow of light coming from the back side is called a rim light. This is a great technique for creating a fashion look for your female subjects with longer hair.

Key: Refers to the overall colors or tones of an image.





High Key

Low Key

High Key: Refers to an image that is created using mostly light tones and bright backgrounds. Low Key: Refers to an image that is created using mostly dark tones and dark backgrounds.

Flat Lighting

Lighting that strikes the subject from the front or that does not rake across the subject to bring out texture and detail is said to be "flat". An overcast day is a good example of "flat" lighting. Even though an overcast day is soft lighting, the overall effect of it is to be flat because it is not directional.

Hard light can also be flat if it strikes the subject from the front and does not rake. For example, an on-camera flash creates flat lighting. A subject that faces directly toward the sun will also appear flatly lit if the sun is behind the camera.

Flat lighting is not always bad. It is commonly used in product photography as well as fashion photography.

For fashion photography, flat lighting diminishes the features of the model to focus more attention on the clothing or other product.

Flat lighting may also be a flattering choice for older clients and those with strong cases of facial blemished because of its tendency to hide wrinkles and skin imperfections.





On the image above, I used two lights - one on each side of the camera at 45° at equal power to create a flat lighting pattern. This helped to reduce the unsightly shadows of the raised arms throughout the image.

When photographing large groups, flat lighting may be the safest choice to avoid the possibility of creating uncontrolled shadows across the group.

Lighting Patterns

Where flat lighting is generally frontal and has little to no shadows, it does nothing to bring out shape and form and texture. Light and shadow creates detail and mood. Portrait photographers will use a number of classic lighting patterns to bring out the subjects features and to create drama or stronger interest.

Certain lighting patterns are also considered to be more flattering to some facial shapes. Some of the classic lighting patterns include, butterfly, loop, broad, short, split and Rembrandt lighting.

Butterfly Lighting

This popular style of fashion lighting creates a flat lighting pattern because it is placed above the subject's face in line with the subject's nose. This pattern creates the shadow outline of a butterfly just below the nose. (right)

A similar butterfly pattern is created when the subject is facing the camera and two lights are set at 45° on either side of the camera with the lights at equal power in used with the same modifier. The lights at 45° are said to be in a "butterfly" position.





Loop Lighting

A loop lighting pattern (left) gets its name from the rounded shadow created by the nose. To achieve this

pattern, the main light is placed at about a 45° angle from the camera and feathered towards the subject and

high enough above the subject to direct the shadow down while still keeping a catchlight in the subject's eye.

Broad Lighting and Short Lighting

If we see the face as having two sides divided down the center of the nose, a face turned towards the camera shows both sides equally. But turn the face to one side or the other, the camera will see more of one side and less of the other.

In the images below with the face divided at the nose, notice that the camera sees more of the right side of the face. The wider side is referred to as the "**broad**" side and the narrow side is called the "**short**" side.



Broad Lighting

Short Lighting

The lighting pattern is named for the side it illuminates first. In the image at left, with the placement of the main light to the right of the camera and the model's head turned to the left, the light strikes the right side first. This is referred to as **"broad lighting"**.

In the image at right, the main light was moved to the left side of the camera. Now the main light first strikes the model's narrow side of her face. This lighting pattern is called, "**short lighting**".

Broad Lighting vs. Short Lighting

Broad lighting tends to make a face "fuller" and "rounder" and the appearance of added "weight" on the subject. Short lighting tends to slenderize a rounded face and tends to be the most flattering lighting pattern on most subjects.

My memory device is, "No woman wants to be a broad!" Since no one has ever come into my studio as asked me to make them appear "fuller and rounder", I make a point to do short lighting on most of my subjects. For subjects with narrow faces, short lighting may exaggerate the "narrowness" of the face. Therefore, broad lighting is the better choice for a narrow face.



Rembrandt Lighting

Named for the famous artist, Rembrandt lighting is when the main light is positioned high and on one side of the face with a small, triangular highlight spilling onto the shadow side of the face. The triangle should illuminate just under the eye and not below the nose. (right)

Split lighting

Split lighting is created when the main light is positioned so as to only light one side of the face. (Left)

Since this technique is used to create strong shadows on the subject, it is often used to create a sense of drama or mystery. It may also give the feeling of power or fear.



Rembrandt was know for using strong shadows in his paintings with the added triangle highlight on the shadow side to create depth.

Generally, either of the lighting patterns may be used with a fill light or a reflector on the shadow side to lessen the contrast of lighting on the face. The amount of fill used is subjective and will be a matter of taste. For very dramatic lighting, do not use a fill or a reflector.

ORGANIZING WHAT YOU SEE

Photography is about designing and composing an image that is visually pleasing or effective, and recording it technically correct on the film. So as a photographer, you will need a technical mind as well as an artistic mind.

COMPOSITION - The placement or arrangement of elements within the image. This means the photographer must make decisions about what will be included in the picture as well as what will not. Elements to consider are: Subject, Foreground, Background, Props, and the Center of Interest. Elements of composition are the tools a photographer uses to design the image and tell the story. Rule of Thirds, Balance, Diagonals, Repetition, Pattern, Leading Lines, and Framing are just a few of the tools available.

CENTER OF INTEREST - Every picture starts with a center of interest. It is the focal point of the photographic story. It might be an action, a person, and object, or a location. The center of interest is the reason for the picture.



In the image on the left, we don't know what has the kids' attention.

On the right, we can see the book and the image now makes sense. The book is the center of interest.





RULE OF THIRDS - This rule gives us a suggestion for the placement of the center of interest. Mentally divide the viewfinder into thirds like a tic-tactoe board. Then place the center of interest on one of the two horizontal or vertical lines.

The intersecting points are also strong positions to use for placement of the center of interest or other elements. One thing to know about this rule is that it is Okay to break it. Very rarely should the subject be place right in the middle of the image, but if it helps to create a strong composition, do it!

BALANCE - Balance in a picture means to keep elements in visual harmony. It does not mean the elements have to be the same size or even symmetrical. It is amazing how a "little" something can balance a much larger element. Color may also be used to create balance.

DIAGONALS - When it comes to arranging elements in a photograph, remember DIAGONAL LINES ARE DYNAMIC. Look for them. The may not always be there, but when they are, use them. They may be in the background or the foreground. They may serve as "Leading Lines" that direct your eye to the subject.

The diagonal lines created by the window sills and the baseboards all point to the subject and help to hold the viewer's eye on the dancer.



PATTERN - Repeating patterns create strong compositional interest. Repeated

patterns in the background can serve to set the subject apart from the background. They can also provide visual movement within an image.

This bridal portrait has strong repeating vertical patterns which contrast with the triangular composition of the bride and her dress.

SHAPES - The arrangement of elements and the subject in a photograph can be strengthened through shapes. Three common shapes are the "S" curve, Triangles, and the Check Mark. The "S" curve compositions tend to be softer (feminine) and Triangles tend to be stronger (masculine).







FRAMING - With this technique, the photographer uses elements in the foreground to "frame" the subject. This is used to direct the viewer to the subject and hold the attention there. (Much like leading lines.)





Steve's Digital Workflow

Transfer and backup files

Copy photos from CF Card to "Client Files" folder on desktop using client name and type in sub-folder Open and Process RAW Files on desktop in Adobe Bridge or Lightroom or send to Picsera Create Jpegs and save to "JPG" folder inside client's folder Copy files to External Hard Drives

Receiving order from customer and placing with order with lab

Gather day's orders and create "New Project" in ordering software and import images Indicate order and crop images Upload order Place order(s) (Keep minimum order in mind)

Note: Combine customer orders to lab. Try not to place more than one order per day to the lab. This reduces shipping charges and the number of delivery boxes to open and sort.

Delivering Orders to Customer

Receive orders from lab Sort images by client Place photos in presentation boxes and notify customers for pick up

Final File Backups

Backup Client finished files including retouched files and Presentation files onto external hard drive Upload final images to cloud storage Clear "Client's File" folder on desktop

Retouching

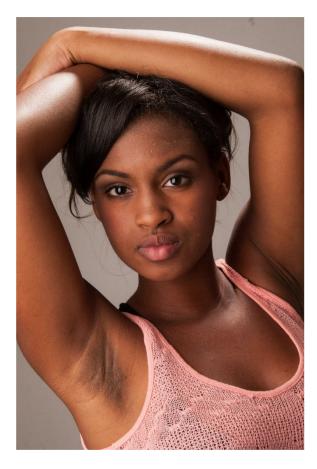
Retouching images in my workflow includes removal of blemishes, softening wrinkles and facial lines and scars, eye enhancements and skin softening.

I include this in the pricing of my images. Remember, this is where a lot of your valuable time is spent, so make sure that you include appropriate production costs in figuring the pricing of your work.

Also remember, the time you spend retouching is time you are NOT spending on growing your business. You may be very surprised to realize your time is much better spent on getting new clients and moving your business forward than it is on doing production work. That is where Retouchup.com can play a big role in the success of your business.













Deep Retouching

Just because I can "fix" doesn't mean I'm obligated to fix it. Extensive retouching in NOT included and requires an addition charge.



Image Enhancement

Simple enhancements such as vignettes and dodging or burning would be part of my normal finishing workflow.





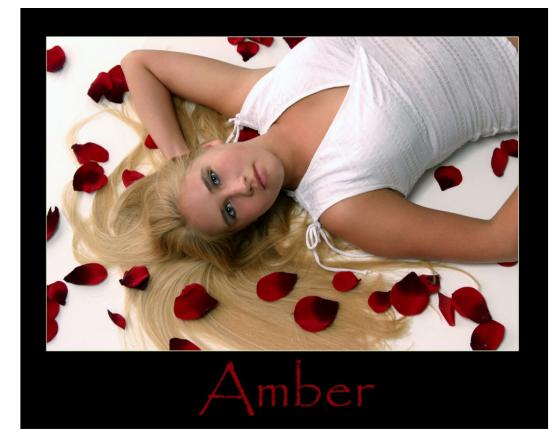
Image Presentation

I will add a digital border and presentation at no additional charge. I will also add names and titles.









Extend or Replace Background

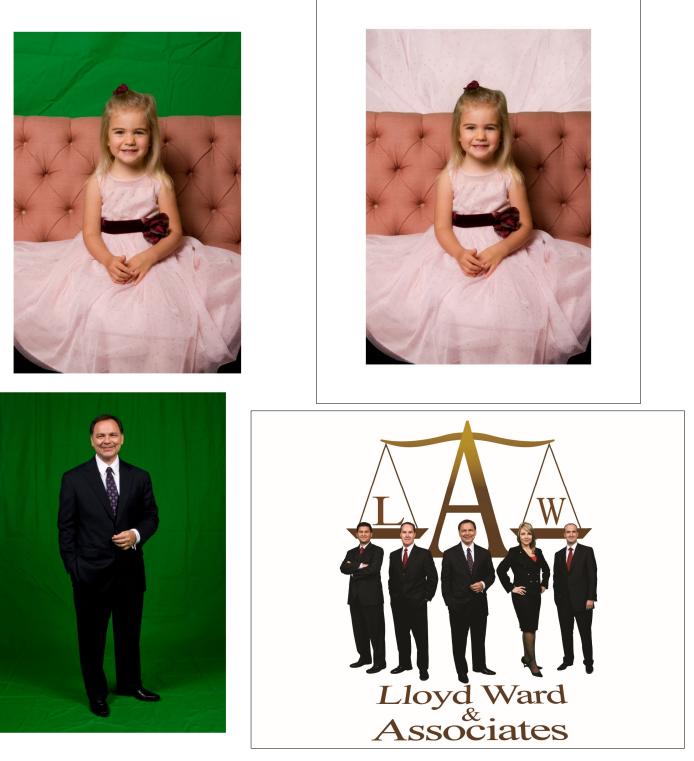
I am VERY selective about the locations I photograph, but sometimes, a client wants something special or requests locations that are not well suited. In these cases, I let the client know that there will be an addition charge to extend or replace a background. I try to provide an estimate before I do the session.

Sometimes, I will do the work "pro-bono" with a minimum order. The main thing is, do not feel like you have to do this amount of finishing without compensation for your time.



Change Background

I use green screen from time to time. When I use it to suit myself, I do the work at no additional charge, but if it is required to produce an image that is specifically requested by the client, I bill for my time spent on production.



Add a Person or Head Swap

This is another area where, "just because I can" does not mean, "I will". I generally bill for my time doing head swaps unless the client is ordering a wall portrait of the image.



I do digital composites including head swaps, missing person or joining separate image at no charge on images that are ordered as custom wall prints.

As long as a wall print is ordered, all other images are priced normally.



If the client does not order a custom wall print, then composite work such as this is at an additional charge for time.



I might also include this level of service for my VIP clients or if the order is substantial. I will show the time/cost on the invoice and show it discounted to \$0 to increase perceived value.

Commissioned Composites

I often do special composite images for clients who request them. Often times, these commissioned pieces include the photography and the finished image at an agreed upon size.

Once the initial piece is completed, I allow my clients to order other sizes at regular print prices.





Speculation Composites

Sometimes, I create composite images on speculation. My hope is that the time spent will be rewarded by having the client purchase the piece. The good news is, it almost always works!

Speculation pieces are done at a specific size at a specific price. I do not allow them to be ordered at smaller sizes until the initial composite is purchased. For example, you can't order an 8x10 until you have purchased the 16x20.





Purchased Templates

I love some of the templates for Graphic Authority. I feel that it is appropriate to add a small up charge for images that have special borders or graphics.



Elevate the Quality of Your Work At the Camera and the Presentation

Don't Settle for giving your customers what they want - Give them ______!

Develop a Style - Educate the Client to Style - Refer

Work Slower - Tripod / Do the Artist Thing **Not How Fast you Work - It is How Well!**

Matting (\$50.00/\$295) (\$35/\$395)

Place Cards w/Titles in Gallery

New Techniques

Discover and Cultivate the Artist Within

Photography is an ______ - If you continue to do "formula" photography day in and day out - fast track to burn-out.

Photography is a _____ **Medium** - and there are a lot of folks who work by imitation and fail to ever discover their own artistic talents.

Become an Artist - We are Artist.

ARTIST: one who professes and practices an art in which conception and execution are governed by imagination and taste.

Write about your photography in a Journal. We mask our feelings and emotions - we are too familiar - writing helps to uncover those feelings.

List some of the places that you would like to go and photograph.

a.	e.
b.	f.
c.	g.
d.	h.

Select one or two of the above places and set a date on your calendar and **GO**! Do this until all have been covered!

Get away by yourself and go to a favorite place and shoot what *you feel*. Hang the work where you can see it every day!

Learn from other Artist. (Art Business News) Discover an artist and become familiar with the style - learn about the artist!

OWN ART Find a local artist that you really like and acquire his/her work. You should like it well enough to ______! Hang it up for people to see alongside your created artwork. Notice how much you enjoy owning it! People feel the same way about owning your art!

Oil a Print Keep an Inspiration Book Keep a sketchbook Shoot what you feel Follow your energy **Scenics and Art for Sale** Get CPP and Masters

The Road to Success Requires 4-Wheel Drive

Destination: _____!

How will you know when you get there? Define "success" through different perspectives.

a. ______ b. _____ c. _____ d. _____ e. _____ f. _____

Characteristics of 4WD

4WD is the coordination of four independent wheels working together to affect			
On the way up, two wheels are pulling while two wheels are pushing.			
4WD is made to take you into some difficult places and to keep you out of			
4WD can take you places that you would otherwise be unable to			
Why Photography Practices Suffer? Determine Why!			
1. Not enough Customers -			
a. Poor marketing			
b. Poor customer service Fail to follow Up - Photographer Indifference			
c. Have not stayed with the trends (attorney or doctor not keeping up)			
Texas School, Kerrville, Convention, New Techniques,			
2. Don't charge enough			
3. Expenses too high			
4. Burn-out			
The 4WD of Career Success			
-			

93

-

Getting Started Define your "target market"

Your target market is a _____!

Where will you locate your business? Home:

Office:

Retail:

Executive Suites:

Define your professional image 2 Examples: Steve Kozak, Photographic Artist

"Creative Photography is the ability to see and create images, and then capture the feeling on film. As your photographer, I strive to create photographs that are as individual as you. I enjoy creating images that show imagination and sensitivity and prefer locations that bring artistic merit to your photograph. This is why I often work in the home, outdoors, or on location. As it is in literature, the setting for the portrait is essential to the story." - Steve Kozak-

Photography by Lorie...

"Working out of the home has so many advantages. Flexibility being the first and of utmost importance in today's busy world. Because I am so close to the workplace, I am able to schedule appointments to fit almost any schedule...Also, of benefit to my clients, is the unlimited time I have available for creativity. I am able to custom design most any session to fit your needs... Affordability, perhaps the most important client benefit, just cannot be beat... ...With my overhead costs being significantly lower than the large studio photographer I am able to pass those savings onto my clients, offering the same great quality photographs at much more reasonable prices."

Write Your philosophy.

Why do you do what you do? What does it mean to you? What is your approach to your work?

Refine the above text and use it in each of your printed pieces that you use to market your photography.

Lawrence Chan (tofurious.com): Craft your brand.

I	am?
I	do?
For?	

"I am a photographer who photographs weddings for contemporary couples."

Craft **your** brand. Strive to be _____!

Define Your Professional Image

Write about what you like to shoot.

Why do you like to shoot this particular subject matter?

Circle the words that illustrate your passion for this type of photography. Any new discoveries? Any affirmations of what you already knew? **Project your Professional Image** Your image should be reflected in:

- Marketing materials
- Studio/consultation room/office Studio/sales room neat and clean
- How you dress Dress appropriately for consultations Dress up for weddings
- How you speak Watch what you say: "previews" not "proofs" "images" not "pictures" "enlargements" not "blow-ups" "sessions" not "sittings" "collections" not "packages"

Marketing materials should be well designed and on nice papers. Establish consistency in printed materials Brochures should incorporate images Create business forms for tasks Use logo on all materials

Consider your business to be a professional "_____".

Protect Your Business!! Personal Liability Insurance PPA's Indemnification Trust Model Releases

Create Marketing Materials

To create outstanding marketing materials, you need outstanding images and "moving" text. To get images for marketing pieces, try sending invitations.

Write an Invitation This is not a certificate - You are the Creative Director!

You are invited to be the subject of a photographic study that will be considered for a body of work being produced by

```
Selected images will appear as part of a series titled, "______
```

The series will contain images featuring

The art produced is intended for publication and exhibition. You are under no obligation to purchase photographs. Please RSVP at ______.

Invitations are different than coupons or gift certificates: You are the "creative director" Be specific about what you want Offer some reward for participation

List 10 of your favorite images.

a.	f.
b.	g.
с.	h.
d.	i.
е.	j.

Select one of your favorite images and write about them now. Not an English Paper - get in touch with your own feelings. Not Technical - No F 4 at 1/60 - Emotional side. Stream of conciseness or a paragraph. Lighting, mood, what is the story, Make one up.

Image One:

Write Effective Ad Copy

- Tell the stories behind the images
- Write from the heart and appeal to emotions
- Let you clients feel the need for images
- Educate the client
- Limit the opportunity (Barriers to Entry)
- Call to action

Exercise

Write one sentence about photography. Use any one of the 4 quotes to start your sentence.

- "Photography is..."
- "Photography can..."
- "I photograph because..."
- "Photography is important because...."

Work Area:

How to write effective copy:

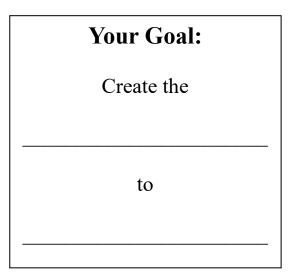
- Write independent thoughts at random
- Organize them in a meaningful order
- Clean up the text
- Write about each line (senior, child, wedding, etc.)

Marketing materials that you need:

Web Site Brochures Business Cards Other Displays Postcards Studio Displays Newsletters

Web site is your most important marketing tool!

- Information and pricing
- Feedback forms
- It creates "qualified" clients
- Keep it fresh
- Accept Online Payments
- Online newsletters www.ConstantContact.com



Postcards are effective signs365.com

- Single-focused promotion
- Good ad copy
- Great images
- Call to action
- Get good addresses
- "Farming"
- Mail consistently
- 3 time minimum
- 100 stamps per week **Stamps.com**

Brochures are a great tool

Can be printed in-house or commercially Stylart 1-800-635-8149 VistaPrint Vistaprint.com 40ver 40ver.com

Studio Displays

Show what you want to sell Lab specials during first of year Pre-sell wall displays

Other Displays

Bridal Shows Craft Fairs Home Shows Mall Displays Networking

Newsletters four to six times per year ConstantContact.com

Highlight Recent Clients Photo Tips Upcoming Specials Recent Awards

Word of mouth marketing

Create business cards and Get involved in community associations Donate to certificates to charities Co-market with other vendors Create a referral program

Social Media—Facebook

- Create conversations—engage dialogue
- Do very little selling
- Let your clients speak for you
- Allow viewers to see you in action
- Reach out with positive reinforcement
- Invitational Marketing

Establish a Year-round Marketing Calendar

Define product lines and seasons Determine marketing/advertising dates Allow time for printing and mailing

Monthly Promotions:

Promotion Methods
Advertising Resources
Direct Mail
Postcards
Brochures
Sales Letter

Paid Advertising

_ Newspaper _ Magazine

Billboard

____ Radio

Digital Resources

TV

____ Website

E-mail

Other

Other

Option 2 Option 3

VIP Clients:

Phone

____ Constant Contact ____ Facebook ___ Twitter

Co-Marketing Resources ___Option 1 _____

Face To Face Opportunities:

New Clients/Referrals:

Create 12 Unique Product Lines

Classic B&W, Vintage Cars, Musicians, Dancers, Bikers, Blue Bonnets, etc.

Promotion Planning

Promotion Descriptions

Per Session Evaluation

Product Offer Evaluation:

Target Session #: _____ @ \$ _____

Worksheet

Event:

Product Line:

Target Market: _____ Branding Colors/Theme:

Sales Budget

10: ______

20:

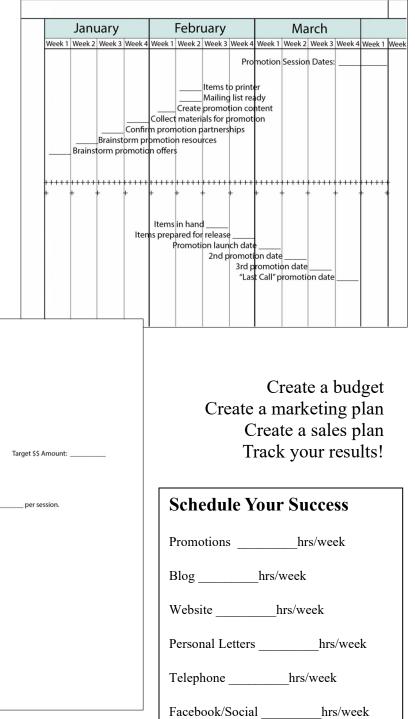
Product Offer:

Expense Budget Product Expense

Total Expenses:

Estimated Net Profit:

Advertising Expense 10%: _____ Marketing Expense 10%: _____



Lessons from Angel Fire

When I decided to take my kids for some summertime fun in the mountains of northern New Mexico in Angel Fire, I knew we would have to spend some time each day on an outdoor adventure instead of just staying at the house and enjoying the view that comes with it. The deck, a Dr. Pepper and a good book would keep me entertained the entire time, but with kids (20 and 18 and 14 years old), there would have to be something more exciting.

My first venture out to see what we could line up yielded the following options:

- a. Horseback riding
- b. 4-wheeling
- c. River rafting
- d. Fishing in a pond in a rowboat

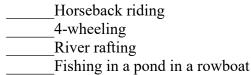
All of these outdoor activities start with a two hour block of time and can be extended into full day activities. For our needs, we were looking at 2-4 hour activities. Keep in mind, that we do not own a raft, a 4-wheeler, a horse or a rowboat. All of the equipment needs are provided for the activity.

So here is what I would like you to do:

First, select the one activity that you would enjoy the most.

Next, select the one activity that you would enjoy the least.

Now, put these activities in order from the highest cost to the lowest cost to participate in the activity for 4 hours.



So, did you try to figure out what each activity was worth to you. For example, if riding a horse is more romantic to you than the danger of possibly falling out of a raft, than you might have decided that horseback riding was worth more. Perhaps you tried to figure which cost more to operate - a 4-wheeler or a rowboat. You may have figured that with gas and upkeep, it costs more to operate a 4-wheeler than a rowboat, so 4-wheeling has to cost more. **So, what logic did you use to determine the order of the cost?**

What does that tell you about your bias in determining price and value?

Now, try to guess which costs more?

- The cheapest of the 4 activities or what you charge for 6-8x10 portraits and the sitting
- The most expensive of the activities or what you charge for 6-8x10 portraits and the sitting

Finally, I have one last set of questions: Which is worth more?

- Your time, talent and effort to deliver a session and 6-8x10's or the **cheapest** of the activities
- Your time, talent and effort to deliver a session and 6-8x10's or the most **expensive** of the activities

OK, before we discuss the answers, let me add another caveat: The price for 4 people to participate in the activity. In no particular order and in random order: \$480, \$560, \$640, \$400

Now, see if you can match the price to the activity.

Horseback riding 4-wheeling River rafting Fishing in a pond in a rowboat Your Sitting and 6 8x10's

Trying to decide what your time and talent is worth is hard to figure when compared to activities you really enjoy or perhaps despise. For example, if it is your dream to ride a horse in the mountains - you may decide that is worth more than what you charge for your services. Conversely, if you hate fishing, you might not even think that would be worth what you charge for a single 8x10 to have to go fishing - heck, you might even pay to NOT have to fish.

The point is, what we do has a **value** as well as a **cost**. Some folks will **value** what we do as a treasure and the cost is worth the investment for the experience. Still, others may think the cost far exceeds the value of a picture when they can get an 8x10 at the local animal photo lab for \$2.99.

Which clients do you hope to attract? Do your clients **value** your work as much as they would value the cheapest of the above outdoor activities, or do they hire you because you are cheap? How would they compare the value of your work to the above activities?

When I looked at my own numbers, I found that I was less expensive than the cheapest of the outdoor activities and almost **HALF** the price of the most expensive of the activities listed. Yet, in my mind, what I do is worth as much or **MORE** than 4 people sitting in a rowboat for 4 hours - hoping to catch a fish for \$640. And how in the world can what I do cost less than 4 people sitting on a horse for four hours at \$560?

We are often able to **price** our work but we have a hard time figuring out how to ______ our work!

Charge What You are Worth

Develop Successful Pricing Strategies

Not about raising prices / Using pricing Systems with Pricing Strategies

Do not be afraid of ______ - A good photographer who charges well for his work is an asset! Beware the average photographer who is more _____!

Determining Where you need to be!

My day rate is \$ My traditional session	My hourly rate is \$ is need to generate \$	•			
g. How much \$ is needed	from each session?				
f. How many sessions do	1 5				
e. How much \$ will you need per day? (divide by)					
d. How much \$ will you n	eed per week? (divide by)				
c.	Total				
b. How much does it cost	you to operate per year?				
a. How much \$ do you wa	int to earn per year?				

I can do _____ promotional sessions in the same amount of time I can do a traditional session. These promotional sessions need to generate \$_____ each.

Determine Package Prices

Target Amount	
Add Print Price	
YES! Moment	

Pricing Systems

Pricing systems are simply the methods that you use on your price list to sell your photography. **Packages, a-la-carte, Gift Collections, Components** are a few of the pricing systems we will explore. I like different elements within each of these systems. I feel that the way you want to direct your business is what determines which system works best for you.

Pricing Strategies deal with the way you develop your price list within a given system. I feel that this is the most important element for photographers to understand in preparing an effective price list!

Package Pricing

Portrait packages make it easy for the photographer to reach desired sales goals by making it attractive to the customer to spend that particular amount. This is an ideal system for the photographer who does not enjoy the "selling" experience. Because this system relies less on the "sales" direction, this system is excellent for the photographer who is looking to reclaim some personal time, as orders may be placed easily by phone or fax.

This method almost always requires paper proofing. You have got to make it easy to get the ordering materials into your clients' hands.

Strategies

We have determined our "target" package price. This is the amount we need to collect from each session to reach our financial goals. This is the package that should be very attractive to your client with enough enticements to spend this amount. **My targeted amount is \$**.

All packages that are priced less than this target amount should be de-valued!

In addition, a larger and attractive "value" package should be created with sufficient enticements for the customer to move up in their spending amount!

Anatomy of a Pricing Strategy

In the excerpt from my "Milestones" price list at right, the Family Treasures collection is priced at my target price. It is also the only package that has only small portraits - 8x10 and smaller. I feel like we offer clients too many choices of packages that have only small images. In this strategy, they can always add additional images to get exactly what they need.

All other collections are priced higher and offer only wall portraits of various sizes. These collections can also "add on" smaller images as needed. By taking the small prints out of these packages, the pricing appears lower in print than it would if I add the small prints and upped the price.

On the complete pricelist, there is an option to pay a session fee and purchase images a-la-carte.

Once the client does the math, they realize the value of going with a collection. It is important to note that I did NOT discount the a-la-carte prices to create my collections. I created my collections FIRST, and then inflated the a-la-carte prices to make the decision to go with a collection and easy one.

- Limit choices to 3
- Sell prints first
- Upgrade finishes
- Sell frames

Maximize your sales! Image projection or presentation In-home sales!

Don't be a salesman, be an image _____

Portrait Packages

These portrait packages offer our most popular portrait selections at outstanding package prices. Packages include session fees. We also offer a-lacarte pricing.

These distinguished "**Artist Series**" prints are printed by hand to exact specifications for visual enhancement and interpretation. In addition, the photograph is tastefully enhanced by a talented artist. The print is then mounted onto a durable artboard and coated with a protective lacquer glaze.

FAMILY CLASSIC

Outdoor or Location Family Session 1 - 24x30 **"Artist Series"** Portrait

\$695.00

FAMILY TRADITION Outdoor or Location Family Session 1 - 20x24 "Artist Series" Portrait

\$495.00

FAMILY SPECIAL Outdoor or Location Family Session 1 - 16x20 **"Artist Series"** Portrait

\$395.00

Canvas Mounting - For an additional charge, your "Artist Series" print may be mounted onto a beautiful artist canvas for a rich texture. Add \$100 for 16x20 and 20x24. For 24x30, please add \$150.

FAMILY TREASURES

Outdoor or Location Family Session

- 3 8x10 "Gift Finish" Portraits
- 4 5x7 "Gift Finish" Portraits
- 8 wallet portraits of one pose

\$325.00

Add to any package above:

!

- 2 8x10 "Gift Finish" Portraits\$75 4 - 5x7 "Gift Finish" Portraits\$75
 - 16 wallet "Gift Finish" Portraits\$75

Perceived Value - elements in a transaction that make a purchase attractive to a client.

Adding to the perceived value of a package makes it easier for the customer to say "Yes!" Proofs, retouching, mounting and textures, matting and framing, folios, up-sizing, and wallets are just a few elements that add to the PV of one package over another. Sometimes, I feel it is easier to sell the PV of a product than the product itself. Sometimes our own "photographer" prejudices influence our pricing. For example:

There is a PV in negative retouching that may be easier to sell the customer a higher priced 8x10, but that includes retouching. at no extra charge.

A-la-carte Pricing

Many photographers use this pricing system in lieu of "package" pricing as they feel it does not place limits on what the client can spend. This may be true if the photographer is willing to spend the time to sit down with the client and direct the sales process. Many customers find this part of the sales process the most "painful" part of the studio experience. Yet, properly marketed, the client should feel that this system give them the flexibility to order exactly what they need.

Strategies

I feel that photographers who use this plan need to be using _____! If you are going to invest this kind of time with your clients, then there is no reason not to maximize your efforts and your sales!

Gift Collections

At a recent convention, I learned of one of the most interesting price systems I have seen to date. Gift collections assume the idea that the majority of all photography purchased is destined for a wall or desktop or bookshelf as a gift to someone else. Realizing that the photograph has got to be framed or presented in some way, this photographer sells not just the photograph, but the photograph and the presentation - all for one price.

Components

Components are not my concept originally; however, I may have been the first to develop this system for the marketing of photography. This system comes from the audio industry regarding the purchase of stereo equipment. Before "rack systems", you would purchase your stereo in separate components allowing you to get exactly what you wanted or could afford from each piece: receiver, amplifier, turntable, tape player, CD player, etc. If you did not have all of the money at once, you could start out with the basics and add components later.

This system is a natural for weddings! Engagement, Bridal, and Wedding coverage are the components we work with. I offer three choices (packages) under each component and the

bride chooses the components that are appropriate for her, allowing her to custom design her "package". This program allows me to offer 48 different packages! No more having to change the size of a bridal portrait or cut out the engagement pictures in order to please a bride who does not really like my package the way it is designed.

Strategies

Principles of package design apply here, however, keep your choices limited to three. This plan helps to keep prices down on your pricelist as everything is not lumped into one price. This also allows you to "fine tune" packages within the pricelist without raising much notice.

WEDDING SUCCESS

How to figure prices for weddings:		
a. How much does it cost you?	Film	\$
	Process/proof	\$
	Proof book	\$
	Assistant	\$
	Production time	\$
Other (Dir	nner/cleaning/etc)	\$
	SUB-TOTAL	\$
b. How much is it worth to you?	Falent/time/troubl	.e \$
T1.:		

This number will tell you your minimum costs on every wedding. Start building your packages from these numbers. The same rules used in portrait packages apply here. Offer no more than three options, and gear your brides to the middle package. By default, the bottom package may seem unattractive - this is OK as we build PV into the middle one. Be sure to add a percentage to the actual costs that you incur on wedding production.

How Much are Files Worth to You? \$_____ ...to Bride \$_____

Determine Value and include w/ Packages - Do Not SELL SEPARATELY!

IF I added \$______ for files in each package and I did X_______# of weddings per year, this gives me an extra \$______!

Handling Lost Reprint Business

Handling the Phone

Educate the Client

Any client who calls and wants to know how much photographs cost should know by the time you are through with them:

- a. We're excited they called and that we are eager to help
- b. Your name and that you know their name too (ASK)
- c. In invitation to the studio. ("Are you familiar with")
- d. What we do in the session (number of poses/time/options)
- e. Benefits of a pre-consultation
- f. To bring several changes of clothes
- g. Three things to bring other than clothes
- h. Photographs can be taken for specific people in the same session (variety)
- i. Previews are ready in about a week (preview policy)
- j. We offer a-la-cart pricing and packages starting at...
- k. We offer designer portraits
- 1. We do have a selection of frames in all sizes
- m. Session dates available
- n. The day, date and time of their session

Know Your Lines

To better educate your clients remember these four words:

"Are you familiar with..."

Just look at the few of the great topics you can cover with these four words:

...our studio? ...Steve's work? ...our sessions? ...our preview policy? ...Art Leather Folios? ...negative retouching? ...wall groupings? ...our frame selections? ...our appointment policy? ...what to look for when selecting clothing for your session? ...our specials? ...our designer portraits? ...our glamour sessions? ... lacquer spraying and mounting your prints? ...Stylart?

Terrific Twos

Remember the rule of twos when presenting options to the client.

"Do you like Tuesday at 2:00 or Wednesday at 10:00?"

If the two choices are not suitable, go to the next set of **TWO**. By using this method, we control our calendar instead of it controlling us.

Appointment Policy

"Our appointment policy is that all sessions must be paid in advance. I can take an appointment by phone with any major credit card, otherwise, appointments must be made in person and the session fees paid at that time."

This simple statement should eliminate anyone from failing to show up for appointment. Please realize that this is a "get tough" policy. We need to deliver this to the client, softly, yet firmly, as many of them will not appreciate our insistence on collecting fees in advance. People who are "put off" with his policy and question the motives may need a bit more explanation:

"We have a very limited number of appointments available each week, and Steve schedules himself exclusively to your session. He asks that the session be paid in advance so that he might organize his time efficiently."

Diplomacy is the key and how you address the issue will make or break a studio client relationship. With a little tact, I doubt anyone can even question this policy

Vendors List

Arlington CameraArlingtonCamera.com
Constant ContactConstantContact.com
H&H Color LabHHColorLab.com
Herff Jones (Cap & Gowns) herffjones.com
Marathon Press marathonpress.com
Packaging tyndellphotographic.com
PayPal.com
Westcottfjwestcott.com
Retouchingretouchup.com
Signs365.com
Stamps.com
Triple Scoop MusicTripleScoopMusic.com

Thoughts About Children's Portraits

Have them bring their own toys, props. Don't overwhelm them. Let mom handle the child. Keep session short. Bring homemade quilts, blankets from Grandma. Consider bare feet. Have supply of wipes, diapers, juice. Hard page books. Blocks with letters to spell name. Balloons, tea party. Let them play

Thoughts About Family Portraits

Try to do outdoors or in home. Photograph them on their boat, motorcycles. Take cooler with soft drinks, water. Insist they dress appropriately—no mixed colors. Do break out groups. Market the emotional need for family portraits. Don't try too many poses—2 or 3 is fine. Easier with infants at 6 months. Follow up for Christmas Cards.

Thoughts About Senior Portraits

Have music playing they like—bring their own CD's.
Try to do a consultation so they are prepared for all they can do.
Have them bring their own stuff.
Have them bring a friend or a pet.
Bring stuff from band, drill team, or sports.
Letter Jacket
Promote during the JR year.
Offer incentive to come in early—free family session?
Hair cut 1-2 weeks before session.

Thoughts About Couple's Portraits

Insist they wear solid colors and similar colors. Long sleeves are important. Show them! Make sure they check each other out—smiles, hair, etc. Take photos where they got engaged or their "special place". Photograph them having fun—him carrying her, kissing, walking and holding hands. Ask them for their ideas or special requests. Show off the ring. Promote newspaper photos.

Thoughts About Bridal Portraits

Location or outdoors best. Need something in her hands—single rose or throwing bouquet made of silk. Take a sheet. Try to have them dress at location. Comfortable shoes, water. Helper—photograph her with mom or helper with last shot. Have the bride make arrangements with locations.

Thoughts About Wedding Photography

Go with another photographer at least 2 or 3 times—watch the first time—try to shoot the 2nd time and try to pose some of the groups on 3rd.

If you don't have a wedding—go to one. Attitude is everything—don't stress—let it go. When something goes wrong— step away. Have back up equipment—cords and flashes. Pre-wedding consultation. Contracts signed. Photograph the details. Have a complete sample album. Go to bridal shows. Get all \$\$ up front. Don't forget groom's family. Brides and moms are most important.

SELF DISCOVERY

- 1. Determine a clear direction for your business/studio.
 - a. Define mission
 - b. Determine marketing strategies
 - c. Determine course for implementation
 - d. Establish a year-round calendar for advertising/marketing
 - e. Review pricing structures
 - f. Write ad copy
- 2. Determine a plan for career growth
 - a. Examine potential for new markets
 - b. Look for educational opportunities
 - c. Look for opportunities for staff development
 - d. Define directions for career growth (what do you want to do) Ex. CPP, Masters, Write book, etc
 - e. Establish time-table for each of the career directions
- 3. Determine a plan for personal growth
 - a. Define needs of individual family members
 - b. Establish plan to see that those needs are met
 - c. Plan interesting vacations and trips for family
 - d. Plan "get-aways" for you and spouse
 - e. Define purposes for "self-time" and plan activities
 - f. Consider "habits" and their results seek to improve
- 4. Look for paths to community involvement
 - a. Consider organizations for membership
 - b. Consider charity support
 - c. Participate in a school support/outreach program
 - d. Present a program to clubs and organizations
 - e. Create a "recognition" program
 - f. Pool community resources co-marketing

- 5. List any special projects that you would like to undertake or explore
 - a.
 g.

 b.
 h.

 c.
 i.

 d.
 j.

 e.
 k.

 f.
 l.
- 6. Build a better _____ business*
 - a. Seek ways to improve photography (techniques and equipment)
 - b. Determine additional service options
 - c. Establish means for increased dialogue
 - d. Establish follow-up measures
 - e. Review pricing structures and strategies
 - *Wedding Seniors Children Family Commercial Bridal Teen Individual - Engagement/couples - Copy/restoration - Sports/prom B&W Publicity - Groups - ______ - ______

"Photographs For Print Competition" by Bill Hedrick

If you have a photograph that you are considering entering into a photo contest or print judging, this checklist should help you determine your photograph's potential for success.

Make Sure Your Photograph Has...

Impact - Is there something about the photograph that catches a judge's eye as soon as he sees it? Does it have an element of excitement? Critical points can be earned up front if the print has good impact and "breaks the boredom" for the judges.

Creativity - The goal is to make the judges ask themselves, "How did he/she do that?" The creativity can be either in the idea and/or the print itself. At any rate, the print should show that you did more than just copy some other image or idea.

Unique & Interesting Style - This goes along with the initial impact. Does your print reflect a style of photography that is interesting and unique?

Correct Composition - A dead-centered, static-looking print will never fly. Utilize the "rule of thirds" and make sure the composition is correct. The viewer's eyes should be naturally drawn to the center of attention.

Good Color Balance - Colors should be realistic and lifelike. Whites should be white and blacks should be black. Colors should harmonize and not clash.

Correct Lighting - Basic lighting principles should be followed. If a subject needs short lighting, it should be used. If a subject needs broad lighting, then it should be used. The light used for "modeling" should be properly placed and should show you have a firm command of correct lighting technique.

Outstanding Subject Matter - Judges see tons of images, so if you photograph something that a lot of other people are photographing, try to select a subject that is really extraordinary and stands out among all the rest.

Exceptional Print Quality - Remember that a good print starts with a good negative. It must be properly exposed before the lab can do the best job printing. You should view your print under lighting conditions similar to those at the print judging itself to make sure it does not "wash out" under the bright judging lights. Also, avoid the regular flat matte spray. You are better off with a high-gloss clear spray finish.

Make a Statement or Tell a Story - A print that tells a story or makes a statement is more exciting and interesting than just a nice print of a nice-looking person. The print should stir the emotions and imagination of the judges. Therefore, the title can often be as important as the print itself. Be as creative as possible when coming up with a title. Make sure it goes with the print.

Center of Attention - The judges' eyes should naturally be drawn to a center of attention which is the main subject matter. Any leading lines should lead to the center of attention without making the judges' eyes jump back and forth around the photograph.

Watch Out For... poor subject matter, poorly posed hands, cropping that is too close, poor clothing selections, obvious artwork and titles that don't match the photograph.

"Welcome To My Mondays" by Steve Kozak

Do you control your business or does your business control you? As I visit with other photographers, I often hear them say, "It seems like I work all the time." Chances are, they do! A common thread among successful photographers is that they immerse themselves into the business and rarely come up for air. A 5-day work week plus a Saturday wedding makes for a very short weekend. And how many among us has a hard time staying completely away from the studio on Sunday?

Stephen Covey in his book, "7 Habits of Highly Effective People", relates the story of a woodcutter who was laboring away with his dull saw when someone suggested, "That would be a lot easier if you sharpened the saw." The woodcutter replied, "I'm just too busy sawing." Some photographers might just as well be woodcutters who labor away without ever taking the time to "sharpen the saw."

This led me to examine my own "habits" and thus "My Mondays!" was born. "My Mondays!" is an "**attitude**" which reclaims one day of the week for me to "sharpen the saw." It is a day where I quite simply do **what I want to do**! This is not just a day off from work - it is a day to focus on things I can do to improve the quality of life! I use this day to address those issues in my personal life and my professional life that would otherwise only show up on a piece of paper as "goals" or in my head as "dreams". "My Mondays!" turns goals into accomplishments and dreams into realities!

Seek Professional Growth - Use "My Mondays!" to visit other photographers whose work and operations that you admire. (Hopefully they have adapted and have "My Mondays!" on Tuesday!) With the entire day to work with, you could visit several studios or even take a road trip to visit a studio that is several hours away. Be sure to call and arrange a convenient time to visit and don't just drop in without notice! I find most photographers are willing to share a great deal if you are considerate of their time.

Expand Your Outlook - Use the day to visit art galleries and galleries that specialize in photographic art. Study the work and the artists' approach to their subjects.

Develop Your Creative Potential - Use the day to do competition shooting or shoot images for that special project that you keep putting off.

Learn a New Skill or New Ideas - Break down and finally learn how to build a web site, or add something new to your existing site to keep it fresh. Take all of your unread photography and business magazines to the library or the lake and read them. Take notes on any ideas that you can use. It is like having a free convention program.

Share Your Knowledge - Write an article for this magazine! (Guess what day I used to write this article?) It is a real boost to the ego to see your own name on the byline. Editors will help you get it ready for publication if you are not confident in your writing skills.

Give Back to the Family - They are the ones who really sacrifice to allow us to do what we love to do. Spend a day with your spouse - without the kids. Then, spend a one-on-one day with each kid separately. Make it their special day.

Pursue a Dream - Fill-in the blank: "I have always wanted to ______." So you have always wanted to write a book? Write the rough draft for chapters one and two. Take the first steps towards achieving the dream.

Get Back to Nature - Take a day trip to some special place. If you are in Texas, consider Enchanted Rock, Lake of the Pines, The Monihans Sand Dunes, Big Bend, The Big Thicket, The Guadalupe Mountains, Padre Island, or Palo Duro Canyon. One of these is bound to be close to you. Spend some quiet, "think" time alone.

"My Mondays!" empowers me to invest fifty-two days a year to develop my professional and personal life - without guilt. I used to think it was a little selfish for me to take these days as my own, but I have learned that resources that fuel creativity are not infinite, and need to be replenished frequently.

"Need Solutions? Think Small!" by Steve Kozak

One of the difficulties that large Churches have is establishing a feeling of "community" and a sense of belonging among its members. Some Churches in my area have four and five services just to be able to serve its membership. Churches have realized that it is difficult for members to get to know each other because they don't

see the same people from week to week. It is almost like the members are guest in their own Church. Being so large also makes it difficult for the leadership to be as attentive to members' needs as they might like to be. To counter this, many Churches have encouraged participation in "small groups".

Small Groups meet outside of regular Church activities and members are encouraged to seek out groups that share a common geography and common interests. In this way, people get to know one another and rely on each other for encouragement and support.

This excellent idea can also be used by photographers. Our associations are so large that even some long-time members don't really know each other. (I have been a TPPA member since 1983. How many of you could pick me out of a line-up?) The "Guild" structure of our association provides for fellowship and support at a local level and is a great way to meet other photographers, but there may be a bit of intimidation discussing business issues with people who may be "competitors" - friendly as they might be. This is why I suggest taking this concept one step further and forming your own "small group".

"Small Groups", "Think Tanks" or "The F8 Club" - call it what you will, but the idea is to organize a group of photographers who share common interests and have varied ideas. By coming together in an informal forum, photographers can share ideas and learn new solutions to a variety of issues. Here are a few ideas to consider when organizing a small group.

Define The Purpose Of The Group - Define by interest: Portrait, Weddings, Seniors, Marketing, etc. Your interests may be specific or broad as long as they are clearly defined.

Keep The Group Small - I find 8 to 12 people is a good working number. This gives you a chance to hear from everyone and provides a variety of perspectives. Select participants who's work and operations that you admire but also include someone who you know would benefit.

Do Not Include Two Members From The Same Market Area - This will give everyone freedom to discuss specific problems and share marketing solutions without reservations. Select members from different cities and different market types. Get a good cross section but be sure there is a common interest. For example, don't invite a commercial photographer to a wedding forum.

Appoint a Moderator - This person is a key to the success of your group as the moderator is assigned to task of structuring and keeping the program moving! Nothing kills the momentum of a small group meeting more than a discussion that is dominated by a single member or a single subject. The moderator should keep the group focused on the issues and not let the discussion deteriorate into a gossip session or a "chatty" conversation.

Meet at a Neutral Site - Try to select a location that is central to everyone. Select a location with comfortable meeting rooms and accommodations. Get away from the dissertations of the studio.

Don't Schedule A Lengthy Forum - For groups who will have members traveling for several hours to attend, I like a Sunday/Monday schedule. Plan to meet Sunday afternoon, then have a nice dinner. Meet again after dinner for more discussions. On Monday, meet again in the morning and try to wrap up around lunch. I find this is a workable schedule more most people. If you do a one day forum, don't go for more than 8 hours and take a break as needed. I suggest meeting only once or twice a year.

Have An Agenda - The moderator should send the agenda to everyone in advance. Time should be allowed for each participant to present an idea, a problem, or a question. Allow for time for responses and additional questions. The group could then break into even smaller discussion groups to cover topics even more in-depth. The moderator should have a list of suggested topics to voted on for group discussions.

Try To Be Involved With A Couple Of Groups - This increases your exposure to new ideas but can also include groups with specific interest. You may belong to a marketing group and a wedding group. I have heard of a group that is a "studio make-over" group. Everyone goes to one of the member's studio on a Sunday and looks at the entire operation. The groups look at the decor, the organization, prints on the wall, studio layout, production room and more. Nothing is off limits! They then prepare a critique and offer suggestions and solutions. The host is put through the ringer but the results are an improved operation and better organization and presentation. The next meeting date is at another studio and the routine is the same until all members studios have been visited.

Do you understand the Basics? Take this review to find out.

1. Which line has the f-stops in the correct order?

A. 1.4 - 2.8 - 4 - 5.6 - 8 - 16 - 22 - 32... B. 1.4 - 2 - 2.8 - 4 - 5.8 - 8 - 16 - 22 - 32 → C. 1.4 - 2 - 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22 - 32...

D. 1.4 - 2.8 - 4 - 5.6 - 8 - 11 - 16 - 22 - 32...

2. Which line has the shutter speeds in the correct order?

A. 1 - 2 - 8 - 15 - 60 - 125 - 250 - 500 - 1000...

B. 1 - 2 - 4 - 8 - 15 - 30 - 125 - 250 - 500 - 1000...

C. 1 - 2 - 8 - 15 - 30 - 60 - 125 - 250 - 1000...

→ D. 1 - 2 - 4 - 8 - 15 - 30 - 60 - 125 - 250 - 500 - 1000...

3. The f-stops serve two purposes - what are they?

A. To control motion and control depth of field

B. To control motion and control the amount of light that reaches the sensor

C. To control the amount of light that reaches the sensor and ISO speed

→ D. To control the amount of light that reaches the sensor and depth of field

4. If you move the f-stop from F5.6 to F8, what happens to the amount of light that reaches the sensor?

A. Decreases

B. Increases

C. Stays the same

5. What is Depth of Field

A. How far the camera can focus

 \implies B. The area in the photograph that is in focus

C. The distance in the background that is in focus

D. The distance between the camera and the subject

6. What happens to the depth of field when you move the lens from F11 to F16?

A. Decreases

→ B. Increases

C. Stays the same

7. Given F8 @ 1/125, what would the new shutter speed need to be if you moved the lens to F5.6?

→ A. 1/250

B. 1/60

C. 1/500

D. 1/30

8. Why would you want to move the lens from F4 to F2.8?

- A. To increase the depth of field
- B. To use a slower shutter speed
- C. To allow less light to reach the sensor
- \implies D. To decrease the depth of field

9. What does the ISO of the film or sensor tell us?

What f-stop to use

- B. What shutter speed to use
- → C. Its' sensitivity to light
 - D. Which lens to use

10. Define "equivalent exposure".

- A. Exposures equal to the ISO
- B. Exposures that yield the same amount of light onto the sensor
 - C. Exposures where the f-stop stays the same and only the shutter speed changes

D. Exposures where the shutter speed stays the same and only the f-stop changes

11. Give an equivalent exposure to F11 @ 1/15.

- A. F11 @ 1/30
- B. F8 @ 1/15
- C. F8 @ 1/8
- → D. F16 @ 1/8

12. The shutter speeds serve two purposes - what are they?

- A. To control motion and control depth of field
- \implies B. To control motion and control the amount of light that reaches the sensor
 - C. To control the amount of light that reaches the sensor and ISO speed
 - D. To control the amount of light that reaches the sensor and depth of field

13. What is the slowest shutter speed that you should use if you are hand-holding your camera?

- A. 1/60 with a 200mm lens
- B. 1/125 with a 28mm lens
- \rightarrow C. 1/60 with a 50mm lens
 - D. 1/60 with a 28mm lens

14. Why would you want to change the shutter speed from 1/60 to 1/250?

- A. To increase the depth of field
- B. To use a slower shutter speed
- → C. To "freeze" a moving object
 - D. To "blur" a moving object

Flash Worksheet (Assume G#110 at 100 ISO and 1/1 unless otherwise stated)

What is the cor	rect exposure v	when the fl	lash to sub	ject distan	ce is:			
Flash Power	- 	Flash Power		Flash Power	D11	Flash Power	120	
A. 5ft @1/1 _	F22	@1/2 _	F16		<u>F11</u>	@1/8	<u>F8</u>	
B. 20ft @1/1 _	F5.6	@1/2 _	F4			@1/8	F2	
C. 7ft @1/1	F16	@1/2 _	F11		F8	@1/8	F5.6	
D. 10ft@1/1	F11	@1/2 _	F8		F5.6	@1/8	F4	
E. 15ft @1/1 _	F8	@1/2 _	F5.6	@1/4	F4	@1/8	F2.8	
2. How many s	tops are repres	sented by:						
1/8 3 1/	/32 5	1/4 2	1/16	4 1/	2 1	1/64	6	
3. What is:								
1/8 of F11	F4 1/4 of	F22 I	F11 1/	/32 of F16	F2.8			
4. What ratio se	etting would be	e required	to fire the	flash at F4	when the	e flash dis	tance is:	
A. 5ft 1/32	2 B. 20ft	1/2	C. 7ft	1/16				
D. 10ft 1/8								
5. The subject n	neasures F4 an	d the back	kground m	easures F1	1. The fl	ash is 5 fe	et from the	e subject.
What are your	settings?		0					Ū
A. Set the F-stop	to: <u>F11</u>	B. S	et the flash	to: <u>1/4</u>	<u> </u>			
6. You are phot	ographing a bi	ride on the	center ais	le. The fla	sh is 7 fe	et away. Y	You want t	o use F4.
The backgroun	d reads F8 @1	/2. What a	are your se	ttings?				
A. Set the F-stop								
C. Set the flash t		_						
7. You are phot and down is abo					gs with bo	ounce flasl	h. The dist	tance up
8. What is the c	orrect exposur Flash Power	e at 400 IS	SO when th	e flash to F-Stop	subject di Flash I			

20ft	F5.6		1/4	B.	5ft	F22	_(a)	1/4
	F8	<u> </u>				F11	~	
	F16						2	

9. You are using 400 ISO. The flash is 15 feet away. You want to shoot at F4. What is your flash setting? 1/16 power

10. You are using 400 ISO. The flash is 5 feet away. You want to shoot at F4. What is your flash setting? 1/128 power

Action Items

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