GETTING OFF AUTO

Many beginning photographers are somehow put under the impression that professional photographers shoot in Manual mode exclusively and that using Manual mode correlates to being an experienced photographer. But is it true that all professional photographers use M mode?

In short, no. You don't have to shoot in M mode to be a pro. There are reasons that pros often shoot in Manual mode. From what I've heard from other photographers and read from polls on forums, there is a pretty even balance between people shooting in Manual mode and Aperture Priority mode.
Either they shoot exclusively in one of these or switch between them depending on the situation.

So, you just purchased your brand new DSLR camera, brought it home, pulled out the user's manual, and..."Huh?" You find yourself overwhelmed by all the technical terms and features. Well, there's good news, you're not alone!

The user's manual is a great resource for finding various settings on your camera, but it's not a very good teacher. Rarely are these manuals written in plain English. So, how about a brief explanation of a few key features written in an easy-to-understand language? Great, let's get started!

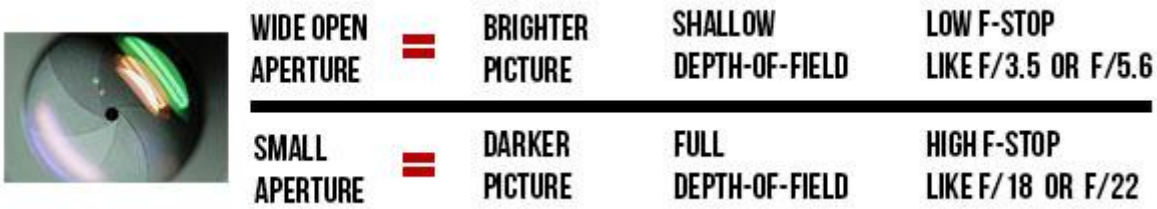
First off, let's talk about three key elements, also referred to as the Exposure Triangle:

Aperture (f-stop), ISO, and Shutter Speed. These are what control your exposure and allow you to create unique photographs. Say goodbye to the snapshot look!

Aperture

Aperture controls the amount of light that is let into your camera through the lens. It also controls depth-of-field (whether the entire photo is in focus, or the background is blurry). Aperture is represented by the numbers: f/1.4, f/5.6, f/11, etc.

The aperture is a circular (sort of) hole through which the light passes to the sensor. A smaller hole allows less light and consequently produces a darker image. Perhaps even more important than the amount of light is the depth of field. It basically controls the amount of the picture that is in focus and the amount of the picture that has a nice creamy blur. Aperture is generally expressed in f-stops on a camera. If you want a portrait of a baby with a nice creamy background, a low f-stop, such as 3.5 is used, whereas if you want to take a landscape image with everything in focus, then you'll want an f-stop like 11 or 22. The low f-stop of 3.5 allows lots of light, whereas a high f-stop like 11 or 22 would not allow much light to get to the sensor and produces a darker image. In essence, low aperture allows lots of light and short depth of field; a high aperture allows little light and makes the entire image in focus.



Shutter speed

The shutter is a small "curtain" in the camera that quickly rolls over the image sensor (the digital version of film) and allows light to shine onto the imaging sensor for a fraction of a second. The longer the shutter allows light to shine onto the image sensor, the brighter the picture since more light is gathered. A darker picture is produced when the shutter moves very quickly and only allows light to touch the imaging sensor for a tiny fraction of a second. The duration that the shutter allows light onto the image sensor is called the shutter speed, and is measured in fractions of a second. So a shutter speed of 1/2 of a second will allow more light to touch the image sensor and will produce a brighter picture than a shutter speed of 1/200 of a second. So if you're taking a picture and it is too dark, you could use a slower shutter speed to allow the camera to gather more light.

Have you ever wondered why your pictures are often blurry in low-light situations or when the subject of the image is moving quickly? Slow shutter speeds allow lots of light to touch the sensor, but if anything in the image has moved while the sensor is open, the photograph will reflect that movement. We can't hold a camera perfectly still because our hands shake–that's why we use tripods. The answer to every blurry picture is to make the shutter speed quicker, but for some situations, such as a moving object in the dark, quick shutter speeds can have the negative effect of a darker image, since the camera has less time to capture the light.. A shutter speed for shooting a party in a dim restaurant might be 1/60th of a second, while an image at the beach on a bright day might be as fast as 1/4000th of a second.

Fast shutter speeds freeze action, while slower speeds allow motion to blur. For instance, in this landscape shot, the flowing water is created by using a slower shutter speed of 1/4 second. Often, slower shutter speeds require the use of a tripod.

3 Easy Steps for Choosing the Right Shutter Speed

How do you know which shutter speed to choose when you look at a subject?

Think of photography as a puzzle. There are many pieces to fit together to make a complete image, and *you* get to choose which pieces work together to create the picture you want!

When you find a subject to photograph, there are several things to consider when choosing a shutter speed. A subject is just one piece of the puzzle. Take a look at the entire scene and you'll be able to figure out the best shutter speed to use by asking yourself these three questions:

1) Is the subject in motion or is it still?

Your answer to that question is your first clue. If it's moving, and you want to freeze its motion, choose a fast shutter speed (1/2000 sec. for example). If you want to show the motion in your subject, choose a slower shutter speed (1/15 sec. for example). When your subjects are still, you can get away with medium shutter speeds like 1/80 or 1/125 sec.

2) How much light do you have in your scene?

Another thing to think about is the light. Is the sun shining brightly? Are there clouds? Are you in the shade? The more light you have, the faster the shutter speed you can use. The less light you have, you'll need to choose slower shutter speeds to allow more light to enter your camera.

3) What is your vision? What do you want the photo to look like?

Underexposed photos create a dark, moody feel and utilize faster shutter speeds. Overexposed photos create dreamy, light effects and use slower shutter speeds.

Let's take a look at a couple of examples:

It's a bright, sunny day and your child is outside playing a game of soccer. You want to freeze motion, so you would likely choose a fast shutter speed. Fast moving subjects, combined with bright sun, and the desire to freeze motion are all deciding factors in choosing fast shutter speeds.

It's a quiet, still evening right around sunset and you're photographing flowers. There's no need to freeze motion in your subject, so you might choose a medium shutter speed. A still subject in a dimly lit environment will require you to choose a medium shutter speed in order to let more light into your camera.

The key to knowing when to use a certain shutter speed with a subject is practice. Experiment with a variety of different settings, subjects, and lighting situations. You will start to automatically know what works best!

SUGGESTED SHUTTER SPEEDS

TO FREEZE ACTION	TO CAPTURE MOTION
Children - 1/250 – 1/1000 seconds	Waterfalls/water: 4 or more seconds
Waterfalls/water: 1/1000 seconds or more	Fireworks: ½ - 4 seconds
Sports avents: 1/500 – 1/2000 seconds	Moving cars at night: 8 – 10 seconds
Birds in flight: 1/1000 seconds and above	Night photography: 1 or more seconds

ISO

And lastly, ISO controls sensitivity to light. This is extremely important in low-light situations. If you find that you're shooting indoors and can't get a fast enough shutter speed to freeze action, you can bump the ISO up from 100 to 800 or higher, allowing your camera to be more sensitive to the light available.

Higher ISOs tend to create a grainy look in your photo which is called digital noise, so finding a good ISO for the situation you are shooting in is a fine balance that comes with practice.

Different cameras deal with digital noise better than others, In short, ISO is a last-resort bit of magic for more light.

A high ISO such as ISO 1,600 will produce a brighter picture than a lower ISO such as ISO 100. Have you ever taken a picture at night with your cell phone or your pocket camera, and noticed that it looks really grainy? That is because the camera tried to compensate for the dark scene by choosing a high ISO, which causes more grain.

SHOOTING MODES

Auto Mode: (Auto)

If you're shooting in Auto mode with a DSLR, stop. If you want to learn photography, which I assume you do since you bought a DSLR, then Auto mode will teach you very little, and you might as well be using a point-and-shoot. The same goes for scene modes.

Since you're first starting out in digital photography, we suggest beginning in either Aperture Priority (**AV** - Canon, **A** - Nikon) or Shutter Priority (**TV** - Canon, **S** - Nikon) mode. These are semi-automatic modes where you control either shutter speed **or** aperture, allowing the camera to set the other for a good exposure. Once you've experimented with each of these modes and feel comfortable in both, then you're ready to jump into full manual mode!

Aperture Priority Mode: ("A" on most cameras, "Av" on Canon)

I'd love to see you use aperture priority for 95% of your shooting for the next several months. It is the mode that most hobbyist photographers and even many pro photographers shoot in most of the time.When you shoot aperture priority mode, you set the aperture (the f-stop) and also the ISO. The camera will then set a shutter speed for you so that the picture is properly exposed.

Aperture priority mode is powerful because it is amazingly simple to use, and still allows the photographer a lot of creative choice. In fact, most competent photographers use aperture priority mode every single day.

Suppose you're shooting friends and family at a party. The background is really busy with people and things around the house, so you decide you want a blurry background in the photo (shallow depth-of-field). To achieve this, you set the camera to f/3.5 which is a low aperture and which will blur out the background. The first picture you take is of a person sitting on the couch next to a lamp. The lamp is bright, so you want a fast shutter speed to get the correct exposure since your aperture is wide open. Using aperture priority mode, the camera would automatically set that shutter speed for you. Then, you want to take a picture of someone in a darker corner of the room. You wouldn't have to fiddle with camera settings at all, because the camera will automatically see that it is dark and choose a slower shutter speed. All the while, you're able to keep the aperture set to use creative depth-of-field.

If I could only teach you one thing in this photography basics series, it would be to set your camera in aperture priority for the next six months. When you want full depth-of-field, choose a high f-stop (aperture). When you want shallow depth of field, choose a lower f-stop. Your pictures will DRAMATICALLY improve when you learn to control the depth-of-field.

Having said that, A mode is often the top choice of photographers shooting in tricky lighting. If the camera doesn't capture the preferred exposure the first time, it will at least give them a ballpark exposure that they can use. So the photographer may then switch to manual to tweak the settings, or simply use the exposure compensation button in A mode which allows you to slightly increase to decrease the exposure that the camera has chosen for the scene.

Program Mode: (P)

Just trust me on this one–you don't want to use it–ever.

But just in case you're curious, program mode usually (it is slightly different on each camera model) sets the aperture and the shutter speed for you, and allows the photographer to set the white balance, ISO, and flash.

This mode is not a great choice for serious photographers because you can't set the shutter speed to make sure the picture isn't blurry, or the aperture to control the depth-of-field.

Shutter Priority Mode: (S or Tv)

Shutter priority mode sounds very useful, but the truth is that I have never found a professional photographer who uses it. It is a bit difficult to explain why that is.

At first, it sounds convenient to have a mode where you could choose the shutter speed and ISO and let the camera choose the aperture for you. For example, when shooting a school basketball game, you might think you'd want shutter priority mode because you could set the shutter speed fast enough for the quick-moving sports situation.

However, in these cases, because the depth-of-field is key most photographers would still use A or M mode and shoot wide open (aperture all the way open to let in the most light) and adjust the ISO to keep the shutter speed high enough.

Manual Mode: ("M")

When I was 16 and drove a car for the first time, my teacher took me to a large parking lot. He asked me to floor it as fast as I possibly could across the parking lot. This was my first time driving! So, I went for it. I felt like I was FLYING! Then, he told me half way across the parking lot to look at the speedometer. I was only going 10 miles per hour (16 kilometers)! The point is, the first time you try anything, it feels intimidating and like you're out of control. The first time any of my students use a camera in manual mode, I can see them terrified to try it out. However, shooting in manual mode really isn't as difficult as it may seem.

If you couldn't have guessed, everything in M mode is set manually (except for focus). This includes the ISO, white balance, aperture, and shutter speed. M mode is the only mode that doesn't have some kind of automation to it. Many photographer's like having complete control over the aperture and shutter speed, and those with a lot of experience using this mode can usually guess how to meter a scene just by looking at it.

Using M mode is great for beginner's too because it gives the photographer a better understanding of both aperture and shutter speed.

But not all pros use this mode. Some lighting situations are tricky or can change quickly, and this makes it difficult to keep up with changing the settings. Manual mode is best used for situations where the lighting is constant, like a studio or a sunny day with no clouds. Once you nail the right exposure, you can set the aperture/shutter speed combo in M mode and your shots will remain at a consistent exposure.

With all that said, it's really all about knowing your camera. As long as you can consistently capture good quality shots that reflect your style, then what does it matter how you capture your image? Aperture and Manual modes are preferred because they give photographers the most control over their camera.