F

It didn't take long for the world to figure out the airplane's combat capability. In 1911, eight years after the Wright brothers found their creation from the ground, the U.S. military started dropping test bombs from above. A few years later, First World War soldiers were battling it out in the sky with fighter jets packing machine guns. Things moved from there very quickly. Only 60 years later, early single-engine propeller planes had developed into sleek, powerful fighter jets that could make sharp aerial turns at more than 600 mph (970 k.h.) In this article, we will look at one of the most famous fighters, the F-15. This remarkable plane has been taking place in years — it's been around since the '70s — but it's still an important piece of America's arsenal. According to the U.S. Air Force, it has a perfect combat record, with more than 100 wins and zero defeats. As we will see, its success is due to its unprecedented mobility, advanced electronic equipment and fearsome firepower. The F-15 Eagle is a small, highly maneuver jet aircraft designed to fly combat missions in all weather conditions. Its primary mission is to maintain air superiority. In other words, its ultimate purpose is to defeat other aircraft in the air war. The United States Air Force commissioned the aircraft after becoming a look at the MiG-25, a powerful fighter jet unveiled by the Soviet Union in 1967. The MiG-25, commonly known as Foxbat, was far better than the primary U.S. fighter jet at the time, the F-4 Phantom, and at the heart of the Cold War, the Air Force needed a comparable aircraft as soon as possible. McDonnell Douglas (now merged with Boeing) won the contract for the new project and delivered the terminated F-15 a few years later. The company has since introduced several changes on this aircraft, as technology and features have changed (see below). The current combat is the F-15 Eagle F-15C. The original F-15 Eagle was designed to handle targets (other planes) from air to air only. It was not built for the bomb target on the ground because the Air Force knew the additional equipment would compromise the aircraft's air combat capabilities. But while the Air Force needed a fighter bomber to replace the aging F-111 until the new stealth F-117 was ready, they decided to modify the F-15 for missions from air to ground. The result was the F-15 Strike Eagle, the designated F-15E. Strike Eagle isn't a replacement for the original F-15, but a complementary bomber aircraft. Surprisingly, the air force's temporary solution turned out to be one of the best fighter bombers ever. In Operation Desert Storm, Strike Eagle proved that it can successfully fight the path past enemy planes, hit multiple ground targets, and then fight its way out of enemy territory. In the next section, we'll see how these two planes are put together and figure out how they dive, climb and dodge so gracefully. An F-15 has most of the elements you'll find on an ordinary jet plane. It has two wings Generate lift, it has rear vertical and horizontal stabilizers and rudders that balance and steer the aircraft, and it has twin turbofan jet engines at the back of the aircraft that generate thrust. The F-15 Model F-15A-original F-15 fighter aircraft, the F-15A first flew in July 1972. Like the current F-15C, this aircraft is designed for a single pilot. The F-15B-original F-15 training aircraft, the F-15B first flew in July 1973. The aircraft has two pilot stations - one for an experienced instructor and one for the pilot in training. An updated version of the F-15C-F-15A, the Air Force added the F-15C in 1979. The F-15C has improved electronics, more engine power and fuel efficiency. The F-15D - this two-seater training for the F-15C - is the aircraft equivalent. The F-15E — a combination air-to-air fighter and air-to-ground bomber (also known as the F-15 Strike Eagle), entered the F-15E Air Force's arsenal in 1988. The biggest difference between the F-15C and the F-15E is the F-15E's additional cockpit station and its bombing capabilities. There are many small changes throughout the aircraft. An Israeli variation on the F-15I Thunder-F-15EF-15S - a Saudi variation on the F-15EF-15J Peace Eagle - a Japanese variation on the F-15CF-15 active F-15 is a two-seater F-15 used in NASA research. Stands for advanced control technology for active integrated vehicles. The main difference between an F-15 and an ordinary jet is how these elements are balanced. The F-15's twin engines (Pratt & Whitney F-100-PW-220 or 229s) have a much higher thrust-to-weight ratio, meaning they are relatively mild to the amount of thrust generated (they can generate about eight times their weight in emphasis). The aircraft body is relatively light, too, although it is extremely strong. Wing sparse (support structures inside the wings) are made of titanium, which is lighter and stronger than steel, and most skin is made of light aluminum. According to the Air Force, each engine can generate between 25,000 and 29,000 pounds of thrust. The normal weight of the F-15C is only 45,000 pounds, meaning its thrust is actually greater than its weight! It also allows it to intensify quickly while climbing to the heights. The F-15 also has very low wing loading, i.e., a lot of wing area for its weight. Greater wing area means more lift, which makes the aircraft more agile. It can descend much faster than an ordinary aircraft, climb and change much more quickly, with a lot more weight per square foot of wing space. Photography deals with a way to capture light that appeals to its artistic sensibilities, whether you fully prefer lit, attack-sharp portraits worthy of the artistic rendering of presidential candidates or blur, NASCAR competitors roaring at 180 mph (290 kevers) per hour. To consistently create the type of pictures that will make your creative spirit soar, you need a firm understanding of common camera settings such as shutter speed, ISO setting and F off (or focal off). There is a tremendous impact on image characteristics in particular, some of which may not be obvious to amateur shooters. For the bulk of this article, we will discuss and improve your understanding of the mysterious F-off. Shutter speed and ISO settings are also important concepts that will help you flesh out your understanding of how the camera works. For more information about these topics, what is our article ISO Speed? And see 10 important photography terms. When you take photos, you're using interplay between shutter speed, ISO and F-stop settings to control exposure. F-stops baffle many novice shooters in particular, perhaps due to the strange alphanumeric symbols used to indicate these settings. Happily, figuring out the f stops is actually pretty easy once you disassemble the word and break it into the understood parts. For starters, your camera has a mechanical aperture that controls how much light enters the camera. This aperture can change in shape, and it works a lot like a pupil in your eye. In general, the brighter the scene, the more narrow the pupil is; In low light, the pupil is large, giving in as much light as possible. The same goes for your camera aperture in most situations. The F-stop number is determined by the focal length of the lens divided by the diameter of the aperture. The focal length refers to the area of view of the lens (sometimes called the angle of view), which is the width and height of the area that a particular lens can capture. Focal length is often printed right on the camera lens. The aperture diameter of the lens with a 100mm focal length set for f-stop of f/10 is 10mm. Keep in mind that doubling the f-stop number halves the size of the aperture opening. Hence, moving from f/10 to f/20 reduces the size of the aperture from 10mm to 5mm. If you use an SLR (single-lens reflex) camera that lets you suffix a range of lenses, the F-stop numbers for each lens will be different. All technical details aside, you won't need to spend a lot of time sweating the finer points of the F-stop. What you really need to know is how to adjust aperture diameter to your advantage as you shoot. Keep reading to learn how aperture control affects the way you view pictures. Page 2 French inventors Nikefour Niepc and Louis Dguerre conceived photography in the 19th century, allowing light to be recorded light. In the 21st century, most of the photos are taken with digital cameras, which use sensors instead of chemicals to record photos and save them as digital files. Even the most modestly priced digital cameras can take decent photos today, so high-quality photography is almost within everyone's reach. Even the best camera needs a good photographer behind it to take the best possible images. You are a budding photo pro, an enthusiastic amateur, or just someone who May wants to take great photos at gatherings and summer vacations. In any case, it pays to learn the main fundamentals While cameras have certainly changed a lot over the past 150 years, the principles of photography remain pretty much the same. Put a fresh set of batteries in your digital camera, make sure the lens cap is off and ready for 10 photography words that will help you take better photos in any situation. Material exposure simply refers to the amount of light recorded on the film or sensor. You want the right amount of exposure to capture the image you see (or trying to create). If you shoot a daylight scene with too much light hitting an overly high ISO sensor for too long, you'll end up with an overly bright, vivid, unrealistic image. On the other hand, a small aperture at low ISO and small shutter speeds may make a daylight view look dark and murky. Balancing shutter speed, ISO and aperture to get the right exposure is the key to great photography. Master this juggling act and you will be well on your way to constantly taking great pictures. (And if you have no idea what it means, we will explain each of these words later in this article.) Luckily, your exposure is an easy way to cheat on juggling routines. This is called bracketing. To bracket a picture manually, set your shutter speed, aperture and ISO where you think there is proper exposure, then take the photo. Then, adjust your aperture or shutter speed to reduce exposure slightly and take that photo. Then adjust the exposure so that it's little more than the first picture and take that one. What is this series brackets of three photos is, hopefully, reasonable risk. Try to hit the sweet spot between the three to capture the perfect image. Advertisement Most digital cameras make it even easier with automatic bracketing mode. When it is turned on through the camera settings, the camera will automatically take three photos, with properly adjusted exposure settings, each time you press the button. Aperture and f-stop are closely related terms. Aperture refers to the opening in the lens that shines light when taking photos. A larger aperture clearly facilitates more light. F-stop is the bus nomenclature that photographers use when discussing different sizes of aperture. F-stops are usually given as f/8 or f/22. Numbers can range from less than one (only a few lenses and cameras are able to f/0.95, for example) f/128. A high F-stop indicates getting through a smaller aperture and low light. Typically, f-stop is indicated on a standard scale in which each increase represents an aperture that allows more than half of the light to be obtained. For example, f/8 allows half the light through f/5.6. While many cameras allow for f-stops that lie in the middle of these standard F-stop settings, On the standard scale it looks like: ad f/1, f/1.4, f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, f/22, f/32, f/45, f/64, f/90, f/128 aperture Important because photography is about the manipulation of light. Proper F-off for Conditions are a major factor in the quality of the final picture. It's difficult to give specific rules for F-stop settings, because the right setting depends on a group of other factors, such as the lens you're using, the shutter speed you're shooting at, and the subject you're taking photos on. This will take some experimentation and experience with your special camera setup to get the best working aperture settings for you. F-stops allow photographers to manipulate the depth of the field to create various artistic effects in their photos. We'll discuss the depth of the field later, but for now, note that a large aperture (which has a small F-stop number) will give you a narrow depth of field, while smaller apertures (with large f-stop numbers) will result in a larger depth of field. Flash can be an important light source when shooting in low-light areas or unevenly lit conditions. However, even if you shoot photos at family gatherings with only an inexpensive point and shoot camera, you've probably already come to realize the limitations of the flash as a primary light source. Countless photos with foreground themes blow out excessive flash and overexposure litter hard drives from everywhere, leading many photographers to try and work with as much ambient light as possible. All told, the flash of your camera is not your enemy. If you're stuck with your camera's built-in flash and there's no good way to increase lighting, there are a few tricks to prevent flash-induced blow out. First, back away from the subject, zooming in a bit if necessary. Try to tape some white tissue paper on the flash to diffuse and soften it. Many digital cameras allow you to reduce flash intensity through the settings menu, so try that too. If all others fail, just paste your finger on the flash. It's a hit-or-miss method, and the photo will be dark, but if you experiment, you can capture the environment you're looking for. Advertising Of course, professional photographers can play a variety of tricks with flash, from using remote flash, bouncing flashes from a reflective surface, or using flash in the middle of long exposure to freeze the action. It is a very versatile lighting tool. You've probably seen beautiful pictures of flowers that are close to the camera and in crisp focus, while the background is soft and fuzzy. This is the result of the limited depth of a camera area. The depth of the area can be from extremely narrow (for example, a picture of a flower in which only one petal is in focus, while the rest is out of focus) effectively infinite (such as landscape photos where everything in the image is in crisp focus). The depth of the area is mainly influenced by the aperture setting of the camera. As we explained above, a large aperture (which has a small f-stop number) will give you a narrow depth of field, while smaller apertures (with large F-stop numbers) will result in a larger depth of field. of the area The focal distance is affected by which lens reflects both the way you are using and how close the subject is to the camera. Closer topics will be the narrower depth of the area, while distant topics can have almost infinite depths of field. Calculating the depth of the field is actually a complex trade involving something called a cycle of confusion. If you're not interested in math, just experiment with your camera and look at a variety of f-stop settings and topics to see how you can manipulate the depth of the field. Advertising focus is the function of camera lens and current aperture setting. An object that is crisp and in clear in focus, while one that is out of focus will appear blurred. Photographers have many ways to manipulate and adjust focus. Some prefer to focus the shot manually using the focus ring. Point-and-shoot camera users often rely on autofocus, a system that allows the camera's sensors to detect the subject distance as a motor automatically focuses. Autofocus is very simple, but it has limitations if you're shooting multiple subjects at different distances from the camera, or subjects that are heading to the camera or away from the camera. Some advanced cameras have constant autofocus – it can actually track moving themes and keep them in mind no matter where they go. If one of these fees, you can manually set your focus to a certain distance and set the time for your photo when the subject reaches the right place. You can also game autofocus by forcing you to focus on something object at a reasonable distance, then take a real picture of a completely different subject that moves in the same distance. The ad ISO number is a measure of light sensitivity. It originally referred to the sensitivity of a given type of film, and the standards for measuring were set by the International Standards Organization (ISO), which is where the name comes from. You had to change the film to change the ISO in the film's camera. Digital cameras allow you to change the ISO through the camera's menu functions, adjusting the sensitivity of the camera's sensor to an ISO equivalent number. So how does ISO work? Although it measures light sensitivity, photographers refer to ISO as the motion of a film or sensor. At high sensitivity, more light is felt within a set period of time than low sensitivity, so higher sensitivity is considered sharp. Unlike aperture, ISO settings are relatively simple. The low ISO number indicates the least light sensitivity, while the higher the ISO numbers are faster, more sensitive settings. Why not always use the highest ISO possible at all times? The high ISO film was granular in film cameras. We could not escape that limitation with digital cameras, but instead of grain, high ISO numbers offer digital noise. One of the most important things a photographer can learn is how to shot the best quality in given light position with the lowest possible ISO setting be done. Of course of course Events and other fast moving actions require high, fast ISO numbers. Fortunately, those conditions are usually brightly lit. The lens is probably the most important part of the camera. Photography is all about capturing light, and whatever light you capture passes through the lens. On less expensive cameras, lenses are made into the body of the camera. Single lens reflex (SLR) cameras have interchangeable lenses. The camera body has a metal ring where the lens returns. The attachment point also has electronic connection points to control the focus and zoom motors on the camera lens. An important factor in choosing a lens is the focus length. It generally refers to the length of the lens, and is measured in millimeters. A 50 mm lens is considered average, shooting subjects are 33 to 65 feet (10 to 20 meters) from cameras that are good. Wide angle lenses have a low focal length that can capture large panoramic views or large themes that are relatively close to you. Telephoto lenses, which can have focal lengths of hundreds of millimeters, are basically telescopes mounted for a camera. They seem far closer to the subjects, but with a limited area of view. Advertisement If your camera has zoom lens, the focal length changes because you zoom in and out. Never remember using digital zoom - the camera is expanding pixels to bring the theme closer, which reduces image quality. So far we've talked about aperture, which defines how much light gets through, and iso numbers, which determines the light sensitivity of the camera's sensor. Shutter speed exposure is the third part of the equation. This refers to how long the shutter remains open to allow light. Shutter speeds are given in fractions of a second - you'll usually shoot at 1/500. Shutter speed is difficult because slower shutter speeds just don't allow more light, they can cause blurring. The entire time the shutter is open, hitting the light sensor, and if an object (or the camera itself) moves during that time, the movement will appear as a blur. If you've ever seen one of those photos of stars at night showing lines of your motion as Earth, that image was the result of a very long shutter speed recording starlight over several hours. Ads can reduce the blur by using a tripod to keep the camera stationary while you shoot, which lets you use slower shutter speeds, but if you're shooting the game and you don't want blurred players, it only helps so much. The white balance shows an interesting difference between a camera and a human eye: a human eye is connected to a human brain. When you look at a white object, your brain is actually interpreting the light signals around you and calculating that the object is white on the fly. If the object is under blue light, it will look really blue, but your brain compensates for the color difference, so you'll see it as white. The camera does not compensate for any such unless you To do this, so if a white object is under blue light, the camera will record blue pixels. Adjusting the white balance helps force the camera to compensate for the fact that most light conditions are not completely white. Many indoor lights have a yellow color, while fluorescent lights have bluesh tint. Even natural light is a bit blue than you might think. You can set white balance manually by adjusting it up or down or selecting the appropriate setting, then taking some test shots to see which of the most natural look. Advertising in turn you can use the automatic white balance function of the camera. Just aim the camera at a white object, such as a large sheet of paper (which is why news vans are almost always white — so the camera operator has an easy way to set the white balance). When you hit the white balance button, the camera will automatically adjust to the power position. With digital photos, your work doesn't end when you take photos. While Photoshop is the most famous photo processing software package, dozens more can be used to convert and manipulate photos. With practice, you can use them for much more than pasting photos of your little sister's face on zoo animals. Beginners can use post processing to adjust brightness, contrast and color balance. It is an easy way to make a poor picture prevalent and make a good picture very good. More advanced users can play with color channels, apply special effects or create a composite of multiple photos. For example, if you were bracketing a shot of a dog in front of a window, you might have exposed a picture with the dog properly, but the window is too bright, and an exposed with window but the dog too dark. In post processing, you can add both to a completely exposed image. While the creative things you can do with post processing software have no limits, one reason is that it's the last in the word list. Learn to shoot excellent photos with the first camera. Then you will have raw materials to work good post processing later. Is a ton of precious old movies, photos and VHS tapes sitting in dust house boxes? It's time to go digital and preserve those memories for future generations. Rose, Darren. ISO settings in digital photography. Digital-Photography-School.com (reached December 8, 2010.) . Controlling exposure. (December 7, 2010.) Hideo. A beginner's guide to simple photography concepts: ISO, aperture, and shutter speed. DPChallenge.com (December 9, 2010.) NK. Canon EOS Beginners' FAQ. Photonotes.com (December 8, 2010.) 2010.)