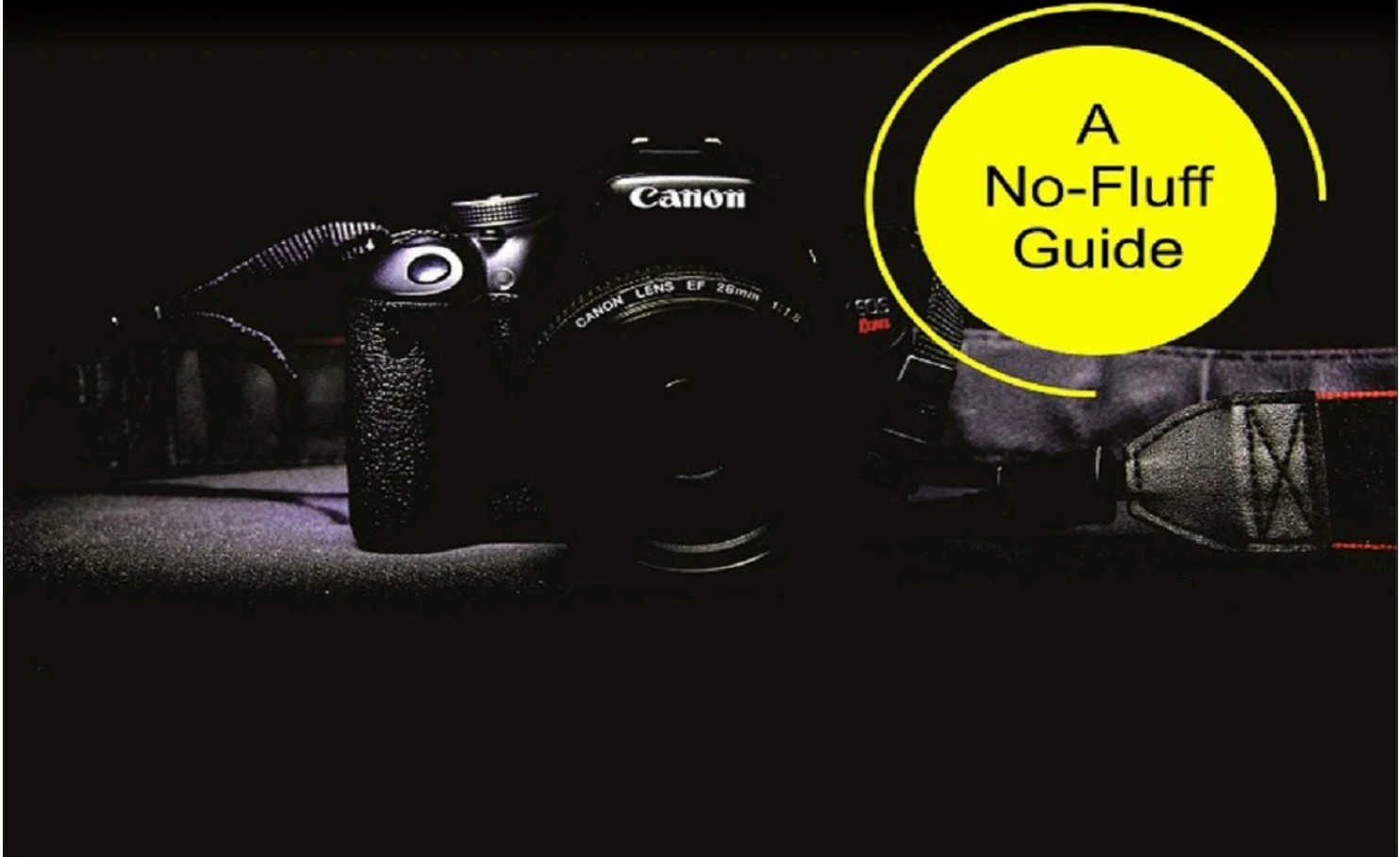


Mastering Digital Cameras

Understanding Aperture, Shutter Speed, ISO and
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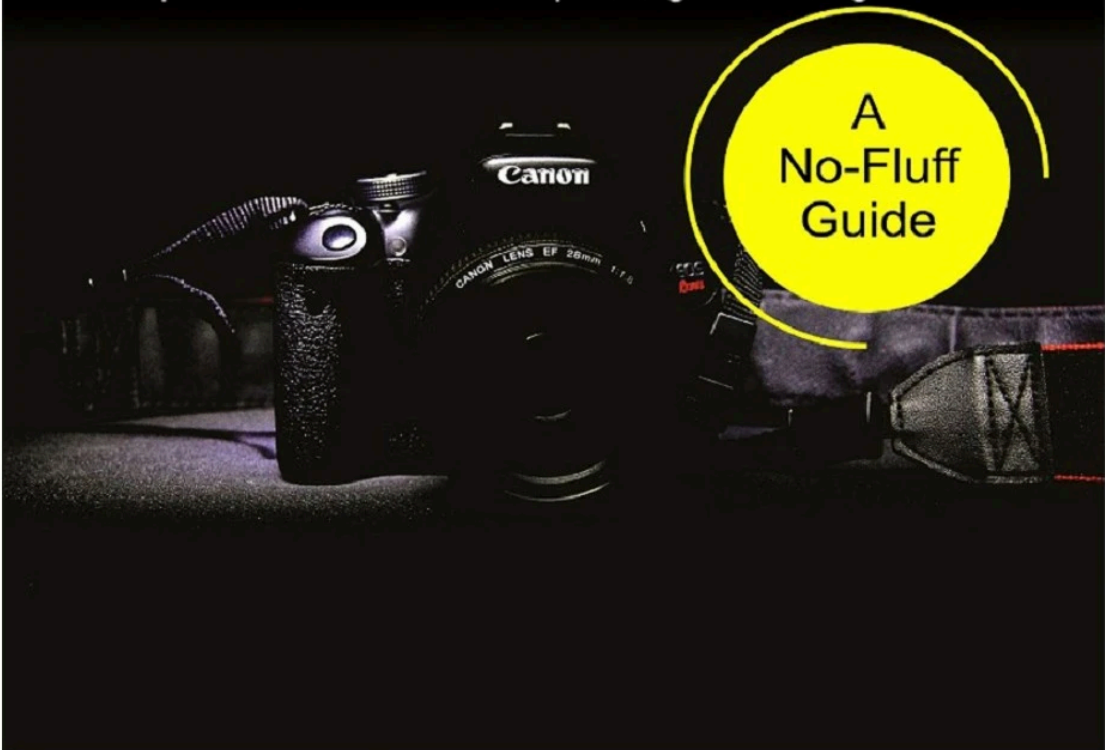


A
No-Fluff
Guide

Eric Anderson

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Highly Recommended Book

[The Complete Digital Photography Book](#)

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PART 1: General Basics

CHAPTER 1

Why it is Worth Saving on a Good Tripod

This sentence gets stuck right away, isn't it? Admittedly, it can be hard tobacco for some people, because not everyone immediately has the money to spend \$400 or more on a decent tripod. Especially not when you have just started to deal with photography and it is not clear to you what an expensive tripod should be. But that's exactly why I want to talk about it today and give you a few reasons for a solid tripod.



Safety

The tripod is like your third arm; only that it is not made of flesh and blood. And there comes your favorite part, your camera. I myself do not hand over my camera to every person, e.g. children. I really like children, but I know with them that the camera will almost certainly land on the floor soon. It's exactly the same with a tripod. You should feel safe about placing it on it.

Some time ago, the tripod and camera slipped off a waterfall and almost fell into the water. Well, I know that it would not have happened so easily with my tripod - simply because it is much heavier. I admit that something like

this can happen with any tripod, but with a heavier one the accident rate is much lower.



Those who travel a lot in landscapes usually have to carry their tripods in their hands and are happy about their low weight. But in this area, stability and security is the be-all and end-all. A stronger gust of wind can possibly outline your tripod (e.g. at the sea). Even if you take a few steps into the water, your tripod shouldn't be a flyweight. It makes sense, doesn't it?

"But I don't take pictures of landscapes" may be an argument. But even if you take portraits with a tripod, it can happen that you or your model accidentally runs against it. If you have a heavier one, it won't fall over easily and offers your camera more security than a light one.

Nature

Years ago, my plastic tripod broke during a shoot because a tripod base could no longer be fixed. The clamp had broken off and that was the end. Plastic tripods are much more of a risk of damage due to the nature alone, which in turn forces you to buy a new tripod. Thus, the cost factor may also be added.

Ball head: rotatable in all directions

There are different ball heads for expensive tripods, which can be easily screwed on. A ball head has a great advantage that it can be turned in all directions. This is not always the case with a slightly cheaper tripod and this restricts you massively in the area of image composition. In addition, a good ball head is bombproof. This means that the camera does not slide down slowly with long exposures.



One function that I really love about my tripod is that I can remove the main rod and insert it crosswise. So you can take photos from very atypical positions. I rarely use this bonus, but when I need it, I'm all the more grateful.

Finally, I would like to emphasize that I do not want to give any owner of a cheap tripod a bad feeling here. This is not about etiquette and nobody with a cheap tripod is therefore a worse photographer. In addition to Manfrotto, many other brands produce good tripods.

Why You Should Have Your Photos Printed

We mostly see our photos on the screen and not in printed form. It's clear. We take photos on memory cards, drag the photos onto the computer and

then the rest happens. Organize, edit and possibly publish the best on the net. End of the flagpole. It's also more convenient - after all, we know what the pictures look like. And especially as a beginner, you ask yourself, why actually print pictures? What does that bring me anyway?

Well, I don't want to fool anyone here. The whole print story is one of my biggest weaknesses in photography. I am just really lazy, that is how it is. But when I get my so-called ass up and hold my pictures in my hands, I almost always think: "Why don't I do that more often? Monitors or not - printing photos simply rocks.

Here are four reasons that speak for it:

1. **Feel the photo** . If you have only seen your pictures on the screen so far, you only know "half the truth". Yes, you can also stroke your screen, but it feels the same with every photo. No seriously. Holding the picture in your hands is a very special experience - but you have to have done it yourself.

2. **A special encounter** . Take your very best photo and let it print a little bigger. I tell you, it's just an experience, because if the print is good, then you will love this photo even more (which you are already proud of). At least that is how it was for me.

3. **On the wall** . You can have the best photos from the best photographers on the wall. Your own will always be the eye-catcher for you. Because every time memories of the creation of the image come to your mind, which other images simply lack. And your own photo looks damn good always.

4. **The perfect gift** . I don't know about you, but there is nothing better than a personal gift where someone has really done something. A photo of you is exactly that. Give someone a picture of you (think about whether it fits the person) and you give him/her something that is really part of you; best with a frame.

6 + 1 Tips for a Good Start with the First Camera

Fresh, stylish and unused, it is just waiting to be pressed by you. And can't wait to try them out and want one thing above all: take great photos. The world of photography is now open to you and the possibilities to try it out

are countless. I want to give you a few tips today- tips that can give you a clean start, so that you can still take photos in a year full of enthusiasm.

1. Enjoy that baby

The first time with your camera will play around a lot and get to know your "baby". Don't stress yourself if everything doesn't work the way you want it to. Relax; enjoy your newly acquired part.

2. Manual rocks

The manual for your camera is the best introduction you can have to photography. Because this is how you get to know them properly and that will give you a feeling of security. And you can find the buttons and functions faster.

3. Questions Questions Questions

You have 2 options. 1. Find yourself a professional who you ask every time if something is not clear to you or 2. Find a forum with many nice and competent people who will answer your questions. I would already know a chic one.

4. Photography blogging = extra kick

"Anyone who writes about it learns twice as quickly" - is really like that. It doesn't have to be a blog. And you don't have to start that today. No stress right. But it helps immensely to write about the first experiences, ideas and frustrations. So you get to the point and that makes a clear impression.

5. Basics stuff

You don't have to do a photo study right away, but you should know the following basics: ISO, aperture (+ depth of field) and the exposure time. No matter which camera you use, that will give you a good understanding boost. It pays off when taking pictures.

6. Stick the camera on your forehead

In a figurative sense of course, take them everywhere and take pictures of what you like. This increases the learning factor and makes you more familiar with your camera. "On the road with the camera" is the best way to learn.

CHAPTER 2

Learn to Photograph

Learning about photography is one of my favorite things to do. Reading about photography, exchanging ideas with other photo junkies and ultimately also active photography has enriched me incredibly. And to share things with you, I made this list of 20 wisdoms. Have lots of fun with it.

1. Take pictures, take pictures, take pictures.
2. The camera interprets reality; it shows only a fraction of what you saw.
3. The fun only starts when you have mastered the technique. Then you can implement and act creatively.
4. There is no bad weather for taking photos.
5. You can find your own style. Dare to do something crazy.
6. Photograph others and give them a print. This is a small but very personal gift.
7. Show your pictures. Print them, introduce them to potential customers. They cannot say more than no.
8. Even short photo trips are tough. It doesn't always have to be a whole day.
9. Take pictures of what you are interested in. If something impresses you, it will be seen in your photos.
10. Try to use only one lens for a long time, and then you will get to know it properly.
11. Forget your LCD. Forget your LCD. Forget your LCD. The reproduction is usually more brilliant and sharper than the picture.
12. Take a friend with you on your photo safari - great conversations can arise.

13. Digital photography is a paradox. It seems cheaper, but a look at past receipts shows me the opposite.

14. Strobist rocks.

15. If you are going to take photos in nature, take your hiking boots with you. Always. Running in the mud with new shoes is no fun. And it can always rain. Even with a blue sky (well, almost).

16. If you go to a photographer meeting in a pub, leave the camera in your pocket. Just leave them in.

17. A sync cable for the flash can save you the shoot. It doesn't need a battery.

18. The best photographers also make mistakes.

19. Convince with good pictures, not with inflated words.

20. But: A good story can give a photo its own meaning.

If you are currently engulfed by the thirst for knowledge and these things are not enough for you, I recommend my somewhat other book with the name "The Complete Digital Photography Book".

7 photography Tips

Photography inspires me again and again. I enjoy it every time I take photos again. And with every venture into photography, I notice helpful things that take me further. Some of them are fresh, others are new knowledge of old wisdom. I hope that the following tips will help you on your way as a photographer.

- **Experiment as Much as You Can**

Let your imagination run wild. Break stuck rules. Think photography the other way around. Try different exposure techniques. Photograph unusual situations and dare to do things differently. Do not tense up, but take it easy. The main thing is that you like it.

- **Do Not Get Discouraged**

Sometimes photography can be disappointing. Harsh, destructive criticism from others has a rousing effect. Expectations that you do not meet can crush you. Stress and frustration arise and make you feel small and inconspicuous. Learn to deal with it, grow with it. Take it as a challenge. But never stop believing in your photography skills.

- **Ignite a Passion for Pictures**

This sentence comes from Chase Jarvis. I personally made it my foundation. This passion arises when making pictures. Marvel at the pictures. When dealing with photos regularly and striving to keep getting better. Ignite this passion; it can take you very far. You have to look after, care for and protect them.

- **Mistakes are Allowed**

You don't have to cover up your mistakes. None of us are perfect. And we don't have to be - why should we? The famous sentence "You can only learn from mistakes" is true. But we don't like to admit mistakes, do we? We don't like it; we want to be good photographers without blemishes. We are not. And hey - no problem! You will be amazed at how relaxing it can be to allow mistakes. Admitting to yourself that not being perfect releases unhealthy pressure, only then you will be able to take photos more freely.

- **Take Pictures of Your Favorite Topics**

You will only be able to take pictures of what really interests and fascinates you. If you are bored of skyscrapers and buildings, your architectural images will also radiate this or it will take a lot of energy to take reasonably effective photos of it. But if you are an enthusiastic fan of architecture, you will get convincing results much faster and easier. But be careful: Favorite topics can also arise over time! I never thought I would get so much inspiration from portrait photography. Therefore, don't restrict yourself too much.

- **Don't Compare Yourself to Others**

I cannot repeat this sentence enough. You are as far as you are. Every time you take a picture, you will be better than you were before and not as

someone else. Comparative thinking has only disadvantages. Do you think you are faster, more creative or better than someone, you get imagined? If you think you are worse than another, you feel stupid and inadequate. But as a beginner, you can also be proud of yourself and do not have to compare yourself. Competition and pushing and challenging each other is a nice and important thing. But better or worse, that does not help anyone.

- **You Can Also Enjoy Small Successes**

Relax. We all want to be the hottest photographers as quickly as possible. You will need time to develop - take it! This shows how much you are interested in it and whether you have staying power. Celebrate the nondescript victories, even those that maybe nobody sees at all. This inspires, motivates and gives new strength.

PART 2: Technical Basics

CHAPTER 3

Understand the ISO

Have I now set the correct ISO or not? If you find yourself asking yourself this question over and over again, this chapter is for you. Because today we want to find out together what that means with the ISO. Everyone knows that ISO has nothing to do with the Isostar drink or the verb isolate. But what does the ISO say now and what do the numbers stand for?

The ISO describes the light sensitivity of your sensor or film. ISO itself stands for "International Standard Organization" and this is a committee for setting the same standards worldwide - in this case, sensitivity to light.

ISO Auto

Many cameras have an ISO automatic preset, in which you let the camera decide which light sensitivity is now needed. While this can be very convenient, it can also lead to surprising results. I therefore always recommend setting the ISO yourself.

Set the ISO

If you click on your digital SLR or compact camera through the menu, you will eventually find the letters ISO. Most cameras can adjust the light sensitivity there. The number before or after the letters describes the current level of light sensitivity. ISO 100 is the lowest adjustable ISO for common cameras and some cameras can set up to ISO 3200 or even higher.

Photosensitivity

The lower the ISO is set, the less sensitive the sensor is to the incident light. This means that exposure has to take longer to get a well-lit photo. The higher the ISO is set, the more the sensor is sensitive to the light and the shorter the exposure time. In both cases, this can be controlled via the aperture and the exposure time.

Noise

So then always take pictures with the highest ISO, right? It would be nice, because screwing up the ISO values has one very important disadvantage: image noise. The quality of your photo decreases sharply from a certain ISO number. The picture becomes crispy, pixelated and the colors are less brilliant. The same phenomenon also applies to film, here it is still called grain, but has a different origin than that of the sensor.

Practical Tips

- Try to keep the light sensitivity of your sensor as low as possible. However, there are situations in which an increase in the ISO is harmless. Depending on the camera, the noise is quite acceptable to a certain degree.
- If it is possible for you to use a tripod, do so. Especially landscape shots are ideal for this.
- Only increase sensitivity to light if it cannot be avoided. For example, for concert recordings or portraits in the evening light - when there is no external flash.
- If you take pictures of people in the evening and are in a house, it is advisable to flash the ceiling/wall with a flash. This naturally brightens the room and envelops the people in a soft light. The use of a flash can replace the ISO increase in some situations, but does not have to.
- If you now have a noisy photo that you want to use, you can counteract the noise with programs such as Neat Image or the Noise Ninja. However, you should be aware that these programs cannot replace a low ISO.

CHAPTER 4

Understand the Histogram

You see it again and again, the so-called histogram. Some cameras optionally display a histogram after the picture is taken, which should give information about the photo. It also appears in Gimp, Photoshop and other image editing programs.

One or the other has to ask the question: What is the histogram for? And what does it actually show? With the help of this book, these questions will come to light today. The different brightness values are named with 256 numbers. 100% black equals 0 and 100% white equals 255. The numbers 1 to 254 indicate the values in between.

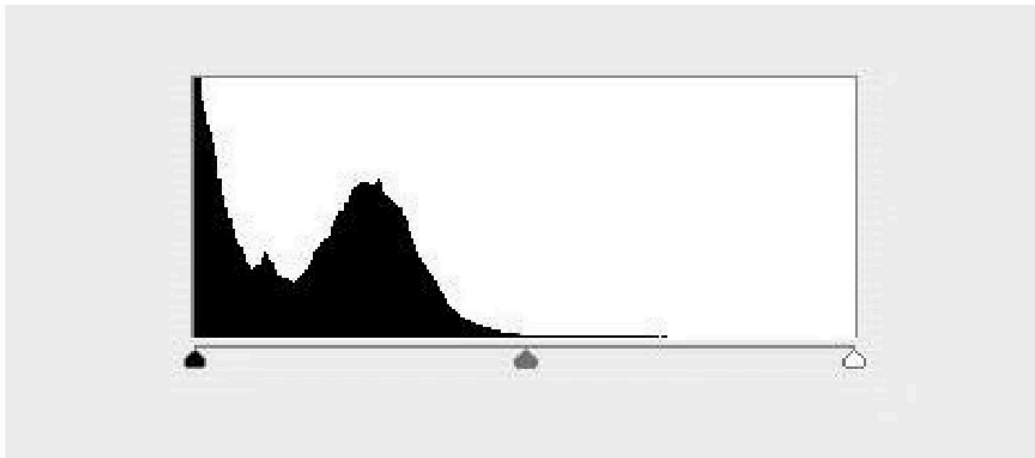
Read and use the histogram during the shoot

During your next shoot, take a look at your LCD and check the histogram after each shot (if possible). The quickest means to get a feel for the histogram and understand it better. Viewing a histogram allows the photographer to control the result or the planned photo more closely than the camera display allows. For example, you can recognize typical errors such as underexposure and overexposure and correct them with appropriate exposure correction.



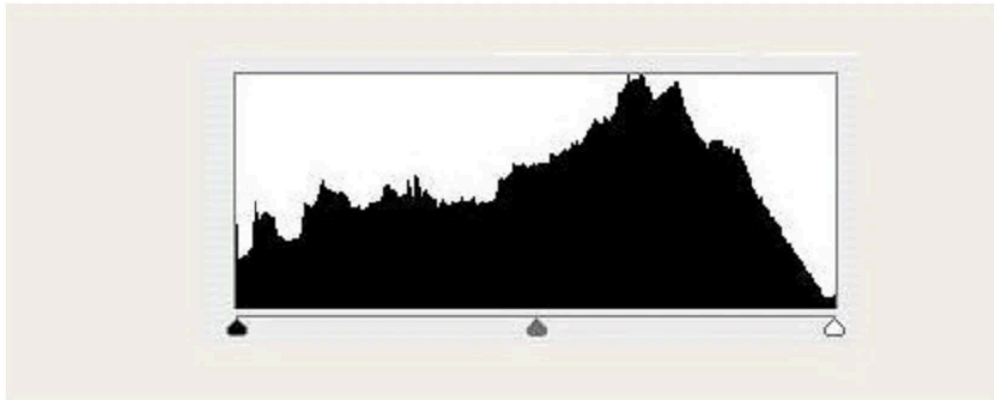
So if you see these values in your histogram (left), it means that your photo is overexposed. Most of the photos are very bright and also white. As a result, some structures and details are lost. It makes sense to take the picture again with an exposure correction (darker).

By the way, if an overexposed picture has been taken on purpose, one speaks of a high key photo. Such a photo is then very bright and should be given its expressiveness. The overexposure of large areas in the photo is used specifically.



If your photo shows a histogram that looks like this - then your photo is underexposed. Here you can do exactly the opposite of the first example. Just take the photo again with a brighter shot.

There are also exceptions for underexposed photos if they were intentionally created in this way. They are called low-key and these pictures also have their own mood. These are (as everyone can imagine) particularly dark.



If your histogram has values like this (or similar), it tells you that most of the details are easy to see. The photo is neither underexposed nor overexposed. I have to say that it depends on the photo and histograms can really look very different. This is only an example to illustrate.

The histogram can help you, especially when you are outdoors on a bright summer day. Because then you can hardly see whether the photo is well exposed. But you can almost always recognize the histogram and thus get important information about the image.

Histogram Errors

A histogram gives you information about the brightness values of your photo. This is very important information - but it is not all. The histogram says nothing at all about whether your picture is good or not. I have encountered such superstition here and there. Color values can also be displayed with a histogram - but that's another chapter.

CHAPTER 5

Understand the Exposure Time

How was the exposure time again? What does that mean with the seconds? These questions are important and as we all know, there are no stupid questions, only stupid answers. But today, I will try to give the smartest answers possible without making it particularly complicated.

To take a photo, light must fall on the film or chip into the camera through an opening. Now that has to be regulated. This is ensured by the aperture (how far it is opened) and the exposure time (how long).

Short Exposure Times

If you want to capture a short moment in your camera, the shortest possible exposure times are important, logically. The photo below was taken with a two hundred-fiftieth or 1/250s. If I had photographed here with 1/50s of a second, the photo would be mostly blurred. That is why it is so important in sports photography to set the shortest possible exposure times, because this is where fast athletes are often frozen.



So make sure that you expose as quickly as possible so that you don't see any blurring in the photos. My time of 1/250s is already hard on the limit, because if you zoom in a little, you can see a slight blur on the right shoe.

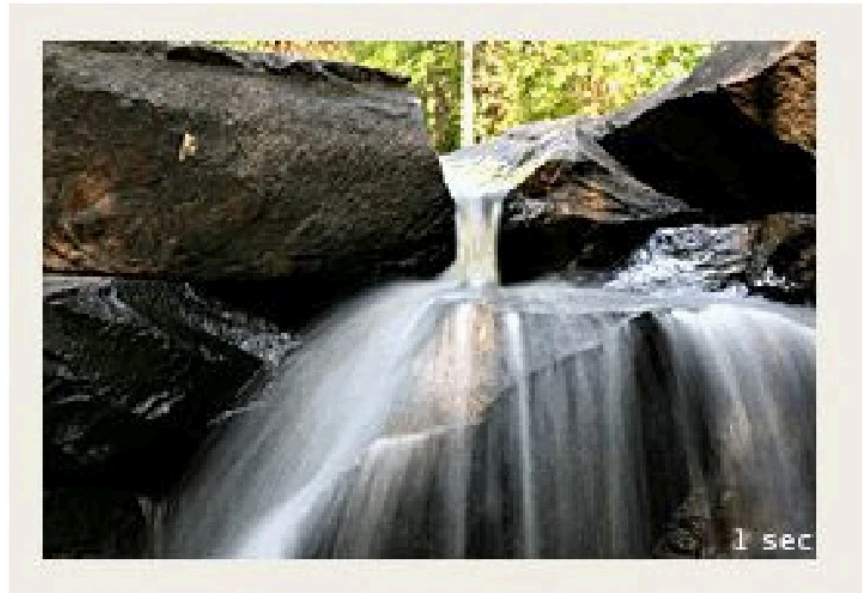
Long Exposure Times



The longer you set the exposure time in your camera, the more blurred your photos will be. This photo was exposed at 60 seconds. Here I wanted to capture the entire route of the car in one picture. If I had only chosen 1 second here, only a short piece of light would have been visible in the photos.



So if you want to intentionally have a blurring effect, you can set long exposure times. But make sure to mount your camera on a tripod if you want certain elements (such as the stones here) to be sharp and others (water) to be blurred. There are also situations where this is not the case (see photo below).



These different images are compressed in a gif and show the effect of different **shutter speeds** quite well. You can clearly see that the water looks completely different - depending on how long it was exposed. At 1/800s, the water is super sharp, at 1 / 3s, it becomes as milky and blurry as we want it to be.

Focal Length and Exposure Time

Since your hand moves minimally when holding the camera, this causes blurring. You have probably already noticed this on your photos (if not, then look at a quiet object at 200mm). And the longer your focal length is, the more you will see it in the viewfinder or in your photos. So you have to make sure that the exposure time is so short that you just don't notice it in the photo.

My rule in this regard is as follows:

Focal length = minimum exposure time as a fraction of a second.

10 mm = minimum 1/10s or shorter (1/20s)

50 mm = minimum 1/50s or shorter (1/80s)

200 mm = minimum 1/200s or shorter (1/250s)

Caution! Exposure time and aperture are closely related. They are kind of a brother and sister. But let's do it one by one, nobody pushes us. And we can still address the relationship between aperture and exposure time if we have also explained the aperture.

CHAPTER 6

Understand the Aperture

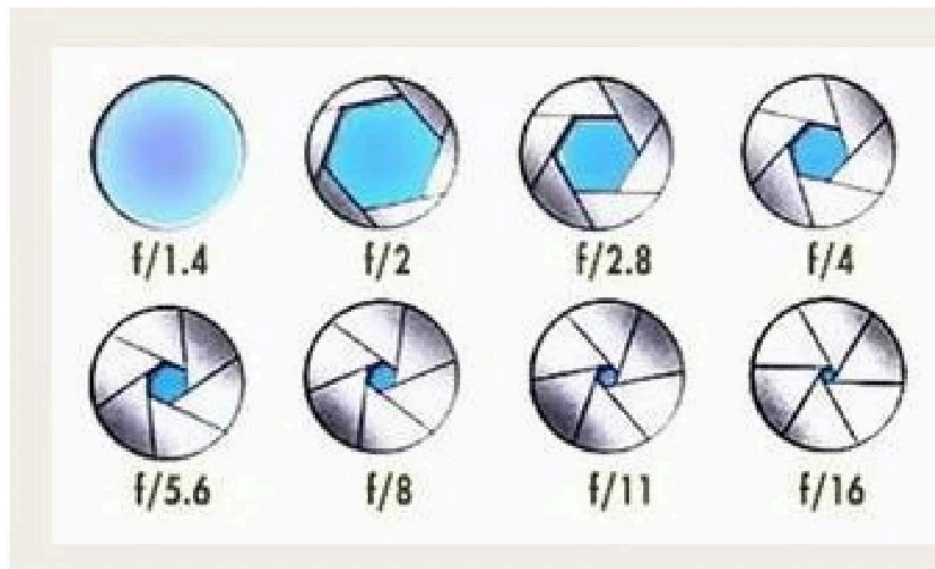
The aperture is a word that is often used by photographers. With which aperture did you take this picture? That is a popular question. One or the other likes to ask the question: What is that actually? Can someone explain that to me? And that is exactly what I will answer today as best I can.

The aperture controls how far the lens is opened. The further the lens is opened, the more light will fall on the sensor of the digital camera.

Funny Numbers or the Name

When photographers speak of the aperture, you can always hear such interesting numbers as $f / 1.4$ or $f / 8$. "F /" is simply the name for the aperture. The number now specifically describes the opening of the aperture.

From the drawing below, we can read the following: The higher the number behind $f /$, the smaller the aperture. So when we speak of a small aperture, we take $f/8$, $f/16$ or $f/22$ etc. If we speak of a large aperture, we mean the rather smaller numbers. If you understand that, you are one step ahead of many photographers, because these proportions are often confused.



Aperture & Exposure Time

The aperture controls how far the lens is open - but not for how long. As is known, this regulates the exposure time. So, the two, who have already been titled as brother and sister, work together, but how? The further the lens is opened (aperture), the shorter the light must pass through (exposure time). The larger the aperture, the shorter the exposure time.

It's clear. If we look at our graphics again, it makes sense. At the same time, more light falls through a large hole than through a small one. That also applies the other way round - logically. The smaller the aperture, the longer the exposure time.

If this is too difficult for you, then try the following and you will understand. Take a picture of an object with the same exposure time but different aperture. Then compare the photos on the computer. The images with the larger aperture are brighter; those with the smaller ones are darker. That was a lot of explanations, wasn't it? But that is a good basis for the next section, because in the next section, we will discuss the relationship between the aperture and the sharpness in your photo. That will be really practical!

Depth of Field

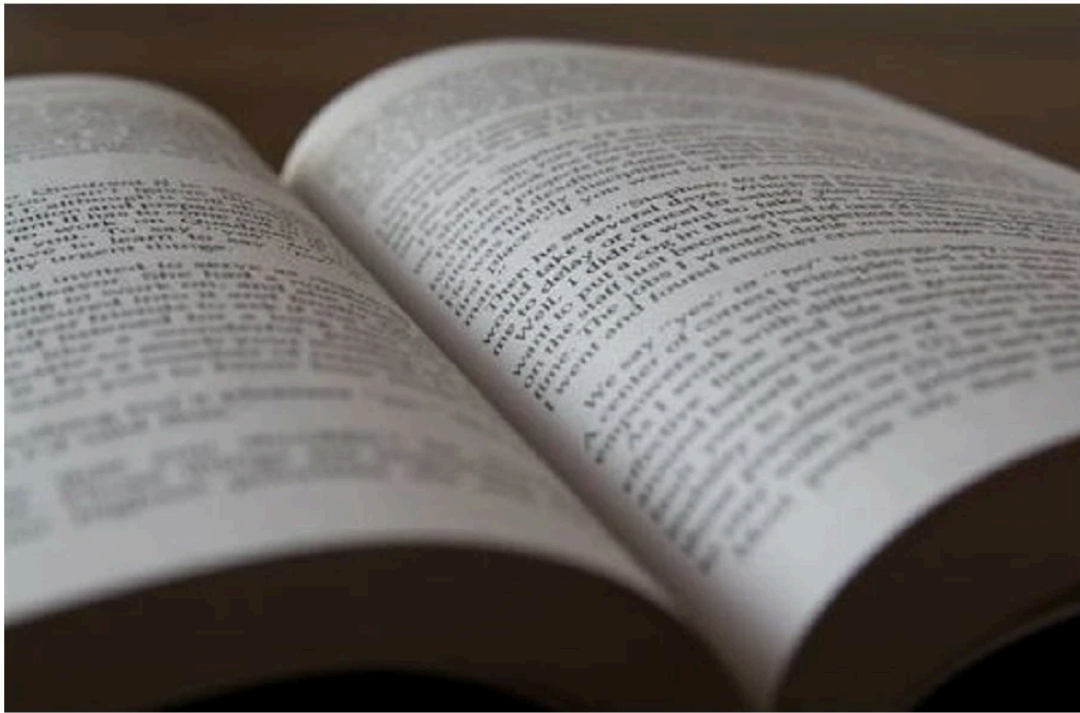
Once you understand the depth of field, you are a big step further. Once I understood this principle, taking pictures of people and objects was really fun. Suddenly I knew how it works with the blurry background and how to make everything in the picture appear sharp.

In this section, I will try to explain the depth of field to you. I will put it as simply as possible and leave unnecessary explanations aside. It is important to me that you have understood the essence of the matter and can then apply it. Relax and read this text step by step.

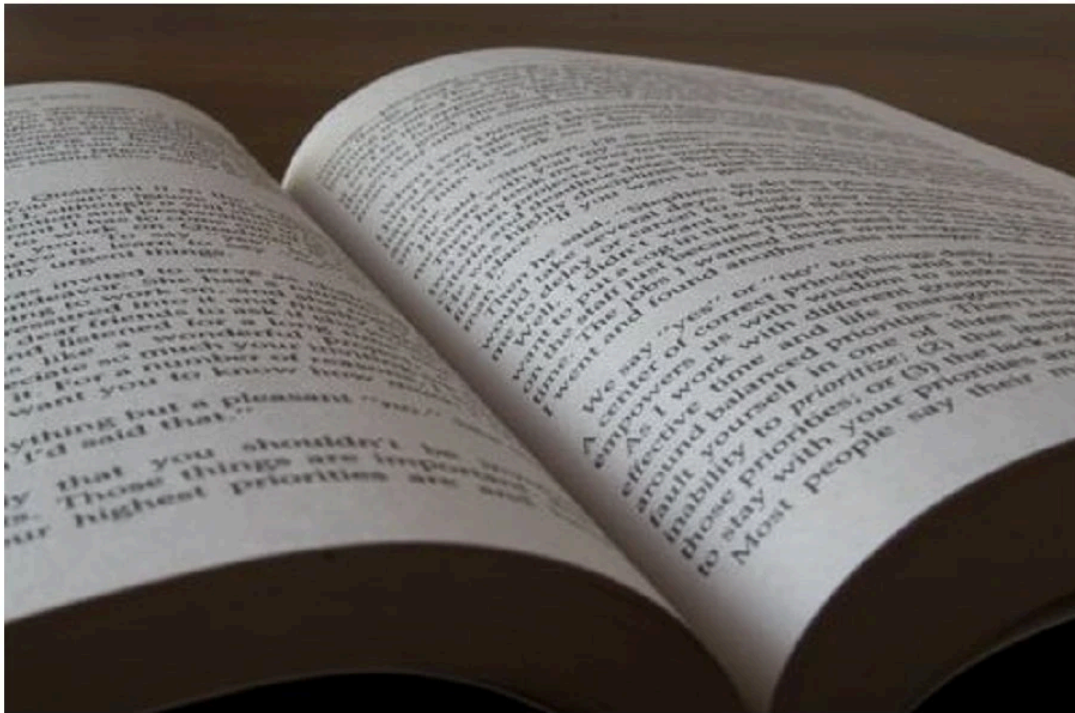
The depth of field is a word for the area that is shown as sharp in your photo. With the choice of the aperture, you can easily influence how many things will be in focus in the picture. If you choose a large aperture ($f/1.8$ or $f/3.5$), only parts of the image that are focused will be 100% sharp. If you choose a small aperture ($f/8$, $f/16$), many more parts of the image will be in the area of focus. To make this clear, I took 3 pictures with different apertures.



$f/2.8$: Very few letters can be seen in the photo. When photographing, I focused on the words "Then he said ...".



f / 7.1: Now, you can read more. The depth of field has expanded significantly towards the front and back. Nevertheless, words are not recognizable in the front and rear areas and are still out of focus.



f / 22.0: This is the smallest aperture that I can control on my lens. This means that more sharpness cannot be achieved from this perspective and with this focal length. You can't get any sharper.

Applications

In landscape photography, you usually want all areas of the image to be clearly visible. In this genre, photography is done with small apertures. Wide-angled lenses are preferred because they also guarantee the large depths of field.

On the other hand, people like to use large apertures in portrait photography to make people stand out from the background. With bright lenses that have a long focal length (e.g. 80mm), very small depth of field can be achieved. In macro photography in particular, one discovers how to use large apertures (e.g. 1.4) to make a salamander sharp, but to make the rest appear blurred. There are exceptions in all areas - the procedures I have listed are not rules.

Selective Focus/Blur

The targeted use of the depth of field by adjusting the aperture, the distance and focal length allow the viewer's gaze to focus on the main subject. The photographer limits the depth of field as narrow as possible around the level at which the main motif is located. The foreground and background become blurred displayed. This selective blurring distracts less from the main subject, which is accentuated by the selective sharpness.

Practical Tip

With almost every digital camera, there is a setting in which you can only determine the aperture and the camera automatically sets the exposure time. This is called automatic timing or aperture preselection and is marked as "**Av** " on Canon cameras. This offers you the freedom to concentrate fully on the composition and depth of field. Next time, take a picture of your object in a wide variety of aperture settings and then compare the depth of field. But be careful, with **Av** , you always have to keep an eye on the exposure time selected by the camera!

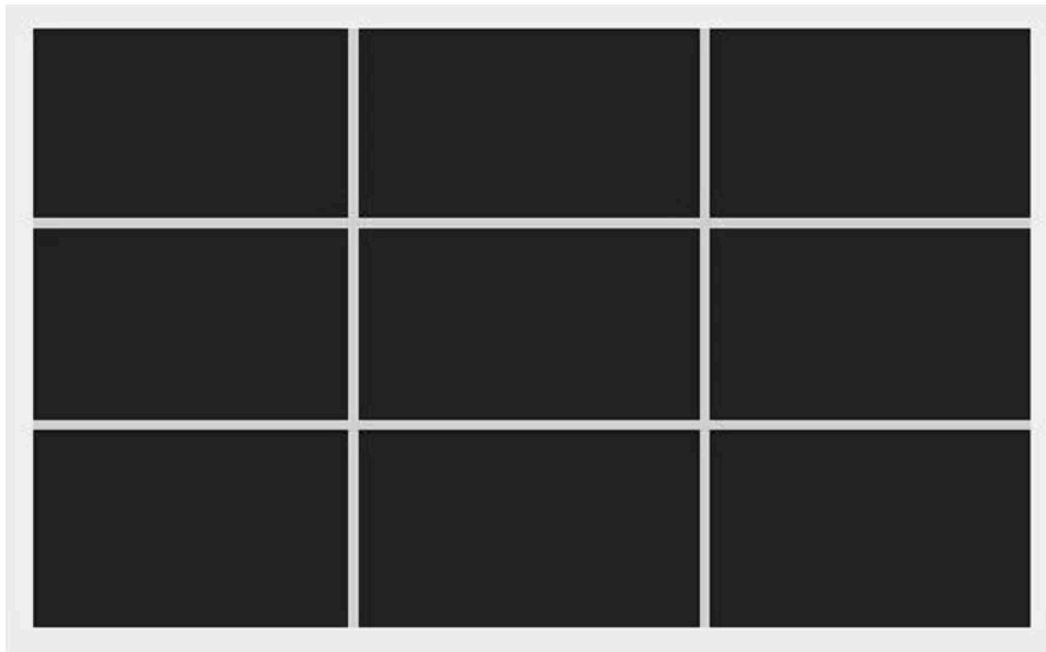
CHAPTER 7

The Third Rule

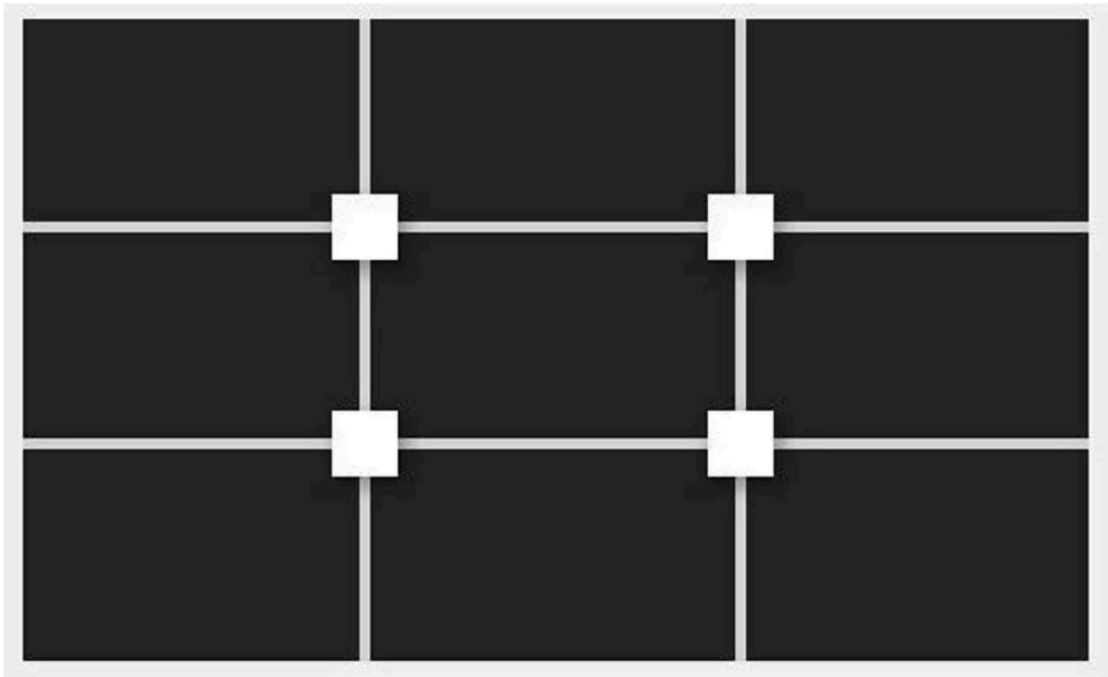
Today I want to explain to you as simply as possible what the third rule is all about. What does the third rule actually mean? Is that a kind of magic formula for good photos? Well, if these questions have been on your mind for a long time, then this section is for you. As always, I will leave all unnecessary bells and whistles aside and we will set the ball rolling.

The Grid

The third rule is a kind of grid, which you can imagine when taking pictures. If you think of these lines when looking through the viewfinder, you have grasped the essentials.



Now what? Next, you can try to place important points of the picture where the different points intersect, namely here:

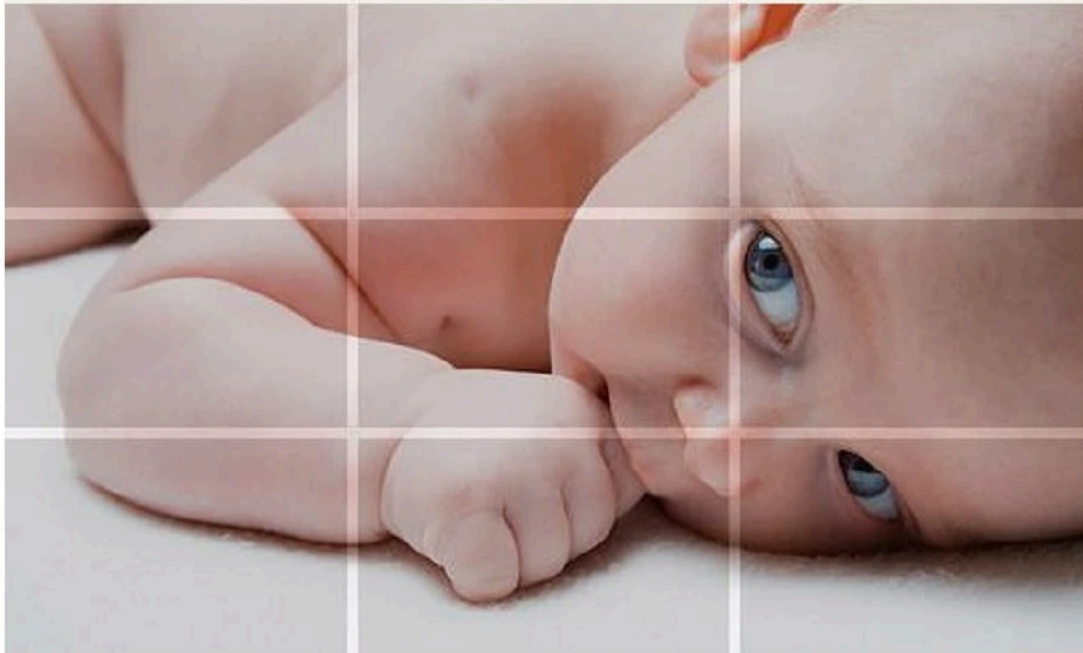


It is not important that you hit 100% exactly the point, but that you roughly orientate yourself to it. In the case of landscapes, it makes sense to set the horizon at the top points and that is how it looks.



As you can see, I didn't make it here perfectly, but it doesn't really matter. Since I included another person in the picture, they should be in the right third (I also didn't implement that perfectly). In the case of landscapes, you can also set the horizon in the lower third - that depends on the respective situation.

Another way to use the golden ratio is through portraits.



Since we like to look at faces, it makes sense to put them in the right or left upper third - because we mostly look there first. In addition, the brightly lit eye was placed where the two lines meet. In the case of portraits, you can also position the person slightly to the right or left in the case of a wide-angle portrait, for example, below.



Why the Whole Thing?

The third rule is based on a theory that we find that objects placed in the center of a picture are boring. To avoid this and to give pictures a special kick, the "rule with the grid" gives. This can then help you compose your photo, not to place things in the middle, but to sit a little further to the right, left, up or down.

My Opinion on the Third Rule

I myself use the third rule particularly often and now I don't need to think about it anymore. It's just in there. When I understood this principle for the first time, it was much easier for me to take appealing photos. Today, I use the rule very consciously and I also like to take it out of myself to obviously break the principle. Because I believe that the third rule should be an aid, but never a rule.

Practical Tips for You

If you have never thought about the third rule, try to cover your image imaginatively with your next shootings. Place the objects that are important for your picture where the points meet. Be it a person, a ball, an apple - everything you want to capture. Orient yourself with landscape pictures on the upper and on the lower line. If you like, you can still put your object in the middle with an extra photo and then decide on the computer which solution you like best. The decision is entirely up to you and even in this case, there is no right or wrong.

CHAPTER 8

Use the Dimmer Button

When browsing through various photo forums, you often come across this question. "Dimming button? What's this? I once read something in my camera manual, but I don't understand anything! What should this key bring? And where is it then? "If you feel the same today or you don't yet know what you can do with the dimmer button - just walk in.

Before I throw any crooked sentence to your head, a brief outline of the aperture - after all, the word is in the "dimming button", so that will probably have something to do with it.

If you look into the SLR through your viewfinder, an image will appear. And that is - regardless of the exposure time - always the same brightness. It does not matter which aperture is set, because SLR cameras use a so-called "open aperture measurement". It always gives you the brightest possible viewfinder image- always and at any time.

But the Whole Thing Has a Slight Disadvantage

If you look through the viewfinder, you will always see the image in which the depth of field corresponds to the largest aperture. Not understood? Try it out: Take the camera, set it to 50mm or higher and focus on the front tip with the largest possible aperture (e.g. $f / 2.8$). Take a picture. Now adjust the aperture by one step (e.g. $f / 3.5$). If you now pull the trigger again, your shot photo will be more in focus than at $f / 2.8$ - that's logical. But you do not see this difference in your viewfinder image - the same area always remains in focus/out of focus.

And now finally the dimmer button comes into play. Incidentally, this is also called "depth of field test button." With this, you can check at any time how the different apertures affect your picture.

Good - But Where is the Dimmer Button?

On most Canon SLR cameras, the button is located below the lens release button, on the Nikon D80 attached below the lens, on the D200 you can find it here. Here is a picture of a Canon EOS 350D.



If you take a picture next time and want to know exactly which areas are now in focus with your chosen aperture, then use the dimmer button. You will notice that (depending on the aperture set), your viewfinder image not only shows the correct depth of field but also gets a little darker. That has to do with the fact that you can then see the picture with the so-called "work screen." The aperture does not change when you take pictures, but when you look through it, the depth of field. Finally, it should be noted that certain Nikon models, unfortunately, do not have a dimmer button.

CHAPTER 9

Understand the Automatic Exposure Controls

Automatic exposure controls are a very cool thing. As can already be seen in the wording, they can help you to find the best possible exposure for your object. "Shutter priority! Yes, I have heard that before or what was that again? "If you ask yourself this question, I invite you to read on here. I will try to explain to you as simply as possible what it is all about.



Since different camera manufacturers sometimes have different names for the automatic exposure controls, if necessary, use the operating instructions. I hope that this is not a problem for photographers who take pictures with other manufacturers.

Basis

Normally you have to set the ISO, exposure time and aperture yourself when taking pictures of your camera in order to correctly expose an object (an external exposure meter is required for this). Since this can be cumbersome at times, digital DSLRs have automatic exposure controls that

(like a kind of assistant) take care of the correct setting of aperture and exposure time. The exposure meter is in the camera.

Since each camera manufacturer has its own programs, we concentrate on the most important ones, which have the most cameras and which are usually identified with a capital letter (P, M, etc.). I will now present this to you using the example of a Canon EOS 350D. The name will appear in brackets on Nikon cameras.

M (M): Manual



This program does not set anything at all. You have to set the shutter speed and aperture yourself.

Av (A): aperture priority



This automatic allows you to set the aperture fixed. The camera's exposure meter sets the exposure time.

Tv (S): exposure priority



Here you set the exposure time and the camera takes care of the aperture, which will have an effect on the depth of field. Do not use for macro recordings, since you usually want to have full control over the depth of field.

P (P): fully automatic



The camera sets the aperture and shutter speed. In dark light conditions, it will choose the largest aperture that is possible.

My Preferences

I have defined certain areas for myself in which I use the programs. For long exposures, I always use "M " because all other programs at maximum stop exposure for 30 seconds. I like to use Av for portraits outdoors, in the studio I stay with "M " because I want to control everything. To be honest, I have never used "Tv" and "P". Because P controls everything and I just can't work with that.

Your Preferences

The various automatic exposure controls should make it easier for you to take pictures. In principle, it doesn't matter which of the above functions suits you best. There are no better or worse automatic exposure controls. It is important that you first feel comfortable. To find out, I recommend you just play around with the different automatics and then stay with one for now.

I also recommend that you check out all programs in various genres (landscape photography, portrait photography, etc.). You will then very quickly notice which automation suits which genre best. After all, this is the best way to learn how to use the automatic exposure control.

PART 3: Take Photos on Site

CHAPTER 10

Important Times of Day for Photography

There are some important times of day for photographers. The rule is: don't rush but still be quick. Because a sunset lasts less than two hours and the blue hour is more of a smooth transition than you could set an alarm clock after.

Dawn/Sunrise

Usually, the time you just turn around in bed and go on sleeping for four hours. Disciplined photographers, on the other hand, are rewarded with an extraordinary lighting mood. Heavy ground fog and golden colors are the ultimate recipes for brilliant landscape shots.

Blazing midday sun from 12 p.m. to 2 p.m.

Actually, this time of day is only interesting if the sky is really bright blue and is only occasionally covered by a few fluffy clouds. With a polarizing filter, polarizing can continue until you drop. The advantages are strong colors, especially through the use of a polarizing filter and short exposure times through lush light. The disadvantages are hard drop shadows from the sun at the zenith (light from above), no romantic mood.

You can use this time of day to take photos indoors (museums, interior design, churches). A lot of light falls through the windows and may allow short exposure times to be used. Also ideal for attending events (e.g. sports such as horse shows, etc.). Once again, short exposure times are the keyword, especially in sports photography.

Afternoon/Sunset Light

This is usually the time of day for outdoor portraits. The sun is now lower and emphasizes the skin color with the warm light. By the way, a cloudy sky is the best diffuser you can imagine. This is even more important with macro shots. As soon as the sun slides a little lower, everything sinks in

warm red-orange tones. It doesn't matter whether the reflection of the sun on the glittering lake or the beach promenade, the light is the secret weapon for a great atmosphere.

Blue Hour

One speaks of it when the last rays of the sun illuminate the sky and the onset of absolute darkness is imminent. The sky is not yet completely black, but deep blue. To what extent always depends a little on the weather. The time of day also varies, somewhat later in summer and vice versa in winter. Most people use this time of day to take HDR pictures (neon signs stand out against the sky) or take night shots (a little mood light is retained). Tripod and self-timer are mandatory.

If you still want to take pictures at night and have not done so at the blue hour, you can venture out again in the middle of the night. The night is ideal for classic night shots, but also for star and/or moon photography. Better pack some warm clothes, maybe some tea and gloves, it can cool surprisingly drastically at night.

Rainy Weather

Time to stuff the batteries into the charger? Time to post process/sort? Time to be in the forum? No! It is particularly important to use the floor. So puddles, reflections created by the water, drop macros, raindrops on the window, etc. Water reflections, in particular, can be used very well, for example, if neon signs are reflected or shimmer in them. With drop macros, it can be very interesting to simply bring a little light into play. Be it the built-in flash or the desk lamp that is quickly erected in the garden.

Rainy weather naturally does not only include rain. Heaven shattered by storms is one of them. So interesting, mostly threatening sky games with black clouds and spectacular light.

Cloudy Sky

Macro shots can be taken quite well with cloudy skies. No annoying, hard shadow and more or less uniform light. If you are currently on a city break and absolutely want to capture a few architectural outpourings, then you

should make sure to include as little gray sky as possible in the picture. Sometimes you can save yourself in such cases with b/w processing. Usually, just changing the angle of view is enough. Going beyond exceptional perspectives or more in detail can help.

CHAPTER 11

Taking Photos with a Kick: the Low-Angle View

You went with a small group to take pictures and you have just reached your first location. After 5 minutes of shooting, you notice something unusual. A photo buddy always lies on the floor, sometimes with a tripod, sometimes without. Then he crouches again and tries to hold the camera down as far as possible while pulling the trigger. "What is he doing there? That looks strange ".... are thoughts that are buzzing through your head.



What your colleague is doing looks a bit strange at first. But it is not completely useless and in this chapter, I would like to explain to you why. The whole thing is called "photography from a frog's view". We move the camera to the lowest possible position - the point of view of a frog.

A Little Uncomfortable, but worth it

Camera out, pull the trigger - that would be the easiest. But in order to find exceptional angles, you sometimes have to overcome yourself to adopt uncomfortable postures. Especially when it comes to the frog's angle, you

may get dirty. But I can promise you one thing: it's worth it. The frog angle is one of the most dramatic angles you can choose.

People look Bigger and More Powerful

If you want to portray a person stronger or simply taller, then it makes sense to choose the frog angle. If you photograph a woman from above, she looks smaller and weaker but bigger and stronger from below. In portraits, it is often enough to crouch to achieve this effect. With these photos, however, I was also on the floor.



Clouds Look more Dramatic

For a good landscape, there is sometimes nothing better than quick, dark clouds. In order to capture the drama of the clouds in their entirety, the frog's angle can be more effective than many other methods. Do not be afraid to get a little dirty. Therefore, don't put on the best clothes from the outset when you need to go outside again. By the way: with a wide-angle lens, clouds look even bigger from a frog's angle.



Trees Settle from the Ground

If we are already in the landscape: If you are photographing individual trees again (e.g. at a sunrise), then pay attention to how they look from a frog's angle. The treetop is often below the horizon when you take photos from standing. Sometimes it is enough to crouch a little to free the tree from the background and thus assign more importance.



Structures on the Floor Appear More Dominant

Streets and fields sometimes have quirks, patterns or structures, which we like to overlook. In addition, sometimes we don't even know how to catch them. The frog angle is exactly what you need. I would like to recommend that you pay attention to the aperture. Because depending on which area you want to have in focus, a large aperture can be an advantage or disadvantage. In this photo, I took a f/9 photo from a frog's angle to ensure that it was sufficiently sharp even further back.



Cars Look More Interesting

I have never enjoyed it myself, but the frog angle is extremely popular with car photography. Just pay attention to which position the photographer could have taken for a promotional photo with a car. In most cases (especially in sporty cars), a low shot position is chosen to make the car look even more dominant and sporty.

My Way to Simple Image Creation

There was a phase in my development with the camera that changed my photography significantly. Kind of a "moment it clicks," a leap of thought, kind of like that. As you can see, it is not easy for me to find words about this, since it is not a clearly defined point or even a date - rather a development. And yet I dare to look for words to describe this development. Here and now. Here we go.

When I started taking a closer look at photography in 2005, I felt like Alice in Wonderland. Everywhere I looked, super horny photos jumped out at me and I was overwhelmed by their emotional impact on me. Plump

landscapes, personal portraits of people and crisp macro shots fascinated me day after day.

When I then picked up the camera myself, I didn't find my photos great, but I was still a little proud. And if they weren't quite so nice, it was the turn of the gimp. I took the photos (rather badly than right) much better. At least that's what I thought.

At the same time, I started reading biographies and tips from the "really big" (as I classified them at the time) on the Internet and in books. At some point, I encountered a sentence that went something like this:

"Photography has a lot to do with excluding things from the picture. "

That sentence sounded kind of wise, but I still didn't really know what to do with it. Well, I just kept going and now and then these words came to mind. At the same time, I felt like making pictures more minimalist, just taking pictures. I started a little experiment:

Take pictures only of what you really want in the picture - leave everything else aside.

Well, it sounds like I read the sentence in the morning and clicked it at noon. But that's not true. Everything I write about is a development, a process that is still ongoing today. But now in the text.

As I said, I started to focus more and more on the main thing. When I photographed a tree, I tried to exclude all other elements that could interfere. A passing car, electrical lines or even houses standing around had nothing to do with my photos. Just the sky, the field and beautifully obvious: the tree.

It was a lot of work, I can tell you. Because how does that work? Move! I lay down on the floor, tried it from further away, very close, another lens, at night - all sorts of ideas to take only the bare essentials were tested.

Today I know what that was: I learned to compose.

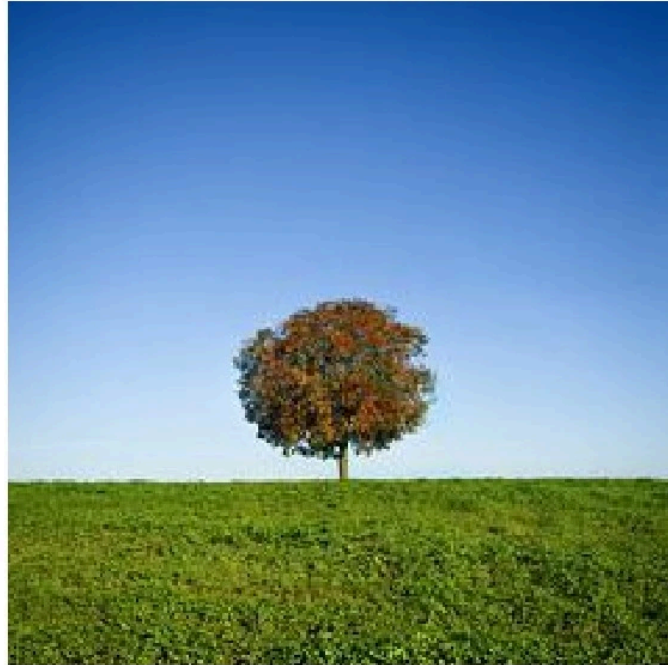
I wanted to have it like this:

- Arrive
- Camera out

- Pull the trigger
- Going home
- Great photo

(It never actually works that way).

More like this:



- Get out every day, try, try
- Exclude disruptive elements
- That important things become important
- Fall on the snout
- Make mistakes
- Dodge
- Too much in there again
- Do not give up
- That is exhausting
- Welding
- Cold
- Unpleasant

It was particularly exhausting on site. Once I found a job, I sometimes stayed there for 1-2 hours just to find a composition that was good. Good was measured (first of all) by whether the important things could be seen and the unimportant things not.



If you take pictures of yourself, you don't even notice it - but today, I can say that my pictures got better step by step. I was not spared the work and I had to keep trying to take photos - but bit by bit, my pictures began to take shape - and also to please other people better.

Today I love to take minimalist photographs.

One thing has to be said here: it doesn't always fit. It is not a magic tool that can be extended to all areas of photography. Beauty lies in the simple - but also (or especially) in the complex. It is difficult for me to photograph complex things like a crowd, city shots or trees myself using this principle.

I would also like to add that "simply taking pictures" is not a magic formula or even a rule, which I follow with great care. More of a tendency, a direction, a way of doing photography. I do believe that this type can help many people - but not others. We are all different and there are people who love to photograph complex, confused and networked things. Because they like things better, both have their charm.

8 Tips for Successful Long Exposures

1. ***Always use a tripod*** . Take your focal length times 2 and you have your maximum exposure time from your hand in hundredths of a second ($20\text{mm} \times 2 = 1 / 40\text{s}$).
2. ***Stick to your lowest possible ISO*** (Mostly ISO 100). The higher your ISO, the more you will notice image noise later on the computer. Expose therefore 10x longer.
3. ***If possible, switch on the mirror lock-up*** . Canon offers this special function from the EOS 350D. This means that the mirror opens in front of the shutter and does not trigger any shake on the tripod.
4. ***Use a cable release*** . Taking long exposures by hand usually results in blurred images.
5. ***B or Bulb*** . This setting, which can usually be found in DSLR cameras, means that you yourself determine how long an exposure should last. If you have this opportunity, use it! For Canon models, it can be selected in "M" mode. You scroll the exposure times longer and longer until you reach B. Now, you can either keep your finger on the release button for as long as you want or you can use the cable release. The latter is logically the better decision.
6. ***Choose apertures from 10-X*** . Taking pictures at night - when it comes to image sharpness can become a bigger dilemma than you suspect. That's why I advise fades from 10 to the maximum. This naturally results in longer exposure times, but also much sharper images.
7. ***Sensor cleanliness plays a major role in this context*** . The smaller you set your aperture, the clearer points on your sensor become visible. Especially with long exposures, you should have a clear view.
8. ***Be on site on time*** . An hour before sunrise and sunset, you should be ready for the shoot, know how you want to take pictures. The most interesting lighting qualities emerge at this time. You shouldn't miss this.

Why the Tripod Should be Your Constant Companion

Tripods are bulky and heavy. For one or the other, they are often another object that turns photography in nature into an act of strength. You quickly ask yourself whether this effort is really worthwhile. I have summarized 6

reasons to illuminate this problem from another side and to encourage you again to have the tripod with you as a constant companion.

1. Evening light

As the darkness increases, it becomes increasingly difficult to take photos from your hand. The luminosity of the sun decreases rapidly in the last moments before sunset and when you check the picture, you will find that sharpness is no longer guaranteed without a tripod. The few minutes before and after sunset are usually the most beautiful and it is a shame to find out that the tripod is at home. Reaching into the menu to increase ISO values is fatal, as this means that crucial image quality is lost.



2. Hard light

Very few photographers take a tripod on a sunny afternoon. Why? Because you believe that there is now enough light here and you will certainly not blur a single picture, even at aperture 22. I know this habit too well from myself and can say from my own experience that this is not always, but it is a fallacy in some cases. Because a tripod not only has the advantage that image blurring can be avoided, in full sunshine, important areas of nature

are fully illuminated and yet shadows are created, which are often dark and detailed in comparison. If you want to do a multiple exposure now, this is not impossible out of hand, but it is associated with subtle deviations of the individual exposures. A tripod is recommended, even at noon at 2 p.m. when the sun is beating down.

3. Night photography

Actually clear, isn't it? Well, I also took photos at 11 p.m. with ISO 3200 and $f/2.8$. The results were really ugly. You can create many artistic effects with these settings, but not serious landscape photos. If we are talking about star trail shots or water exposures, we don't even need to unpack the camera without a tripod. The ever popular highway shots with long, red and white lines would look adventurous from the hand. Here, I have already used the top edge of the bridge grid as a base, a method that I would strongly advise against. Because if your camera survives the fall on the highway (which is more than unlikely), it will still be difficult to fish it out without even going on it).



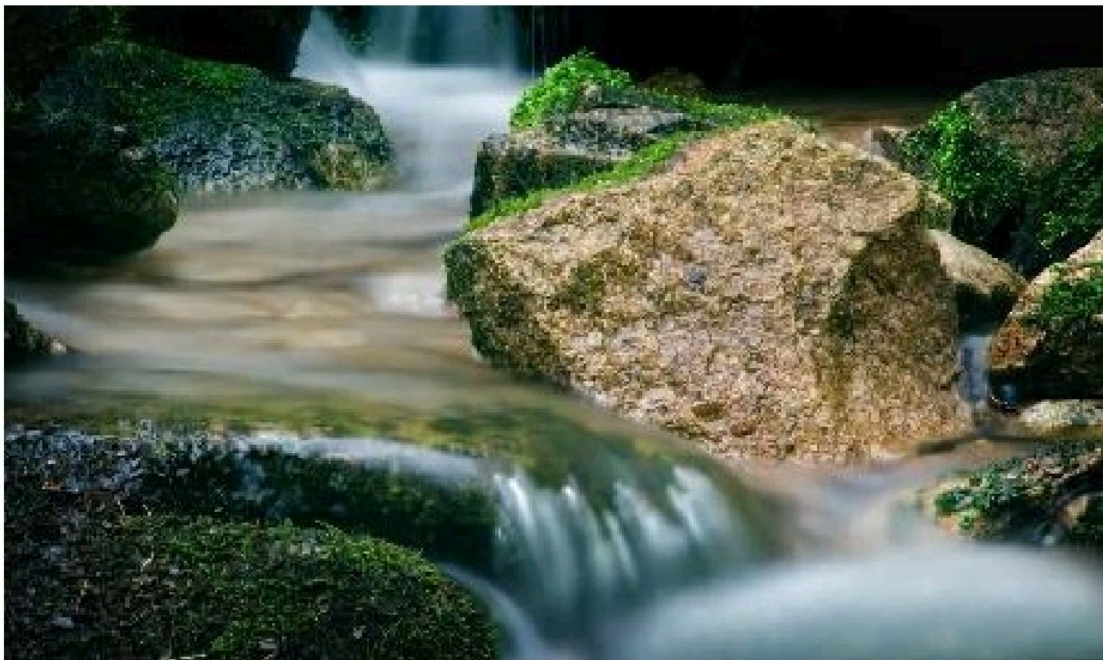
4. Take pictures with the gray filter

Depending on the extension factor of the filter, you will be forced to set longer exposure times. With this, you compensate for the darkness of the filter and can also blur passing clouds during the day. Out of hand? No

chance. A glance at the LCD will be enough to grab the tripod immediately. Gray filter and tripods are married. The gray filter is the loyalty that does not take a picture without the tripod, the tripod, on the other hand, can also take pictures without a filter.

5. Take pictures with the telephoto lens

If the tripod is still in the car, you are spoiled for choice: high ISO values (image noise) or wide apertures (loss of depth of field). Since landscape shots are on average at $f/8-11$ and the photographer does not want to do without sharpness, a tripod definitely has the nose ahead.



6. Architecture - interior shots

If we are already on the subject, I would like to add this point. Since most public buildings cannot be photographed without permission, you have obtained them and are now standing in a huge complex full of interesting lines and places that want to be photographed. Most of the time, buildings are bright enough to see enough and to move safely. However, this is often not enough for the short exposure times. If finally, the weather is playing a trick on you and clouds are covering the sunlight entering from outside, a tripod is gold. In addition, indoor shots in many cases require apertures from 9.0 and longer exposure times can therefore be expected anyway.

Conclusion

Technological convergence has led digital cameras to mobile phones and other devices such as tablets, increasing the number of users of photography exponentially and each time new models improve optical quality and image resolution. The photographer's task must be rethought and restructured. Digital photography has created a revolution of the photographic medium. Images are increasingly displayed on screens than on paper.

Currently, digital cameras also allow you to take videos, usually in resolutions from 320×240 to 1920×1080 pixels and between 12 and 60 frames per second, sometimes with sound (usually monophonic) in the case of the most complete models. These videos are reaching such a high level of quality that many professionals are using SLR cameras instead of video cameras.