# Retro Cameras


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## The Collector's Guide to Vintage Film Photography

John Wade

With over 550 illustrations

Thames & Hudson



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# Introduction

There were two types of camera buyer in the days before digital: photographers and collectors.

Photographers bought cameras, obviously, to take pictures. Collectors bought cameras because they were interested in their place in the history of photography, or simply because they considered them to be beautiful objects in their own right – objects to be admired and polished, but rarely to be used.

As the digital age dawned, photographers began to make the move to the new cameras, even though initially many agreed that this new-fangled method of photography would never catch on. In a remarkably short time, however, digital cameras became more sophisticated. They soon dominated the market and finally superseded film cameras completely for both amateur and professional photographers.

Cameras from the era of the last days of film photography were left in a kind of limbo. Photographers saw these cameras as primitive compared to the latest digital models and collectors considered them to be too modern to be of historic interest. No one wanted them.

But then a new generation began buying film cameras. They were photographers who had grown up in the digital age or in the last days of film photography when cameras had developed super-sophisticated fully-auto metering systems and advanced auto-focus functions. Interestingly, these new buyers ignored the fully automatic models from the end of the film era and were attracted more to manual single-lens reflexes (SLRs), or those that had some fairly basic form of automation. Autofocus too was shunned. They sought basic camera craft and found it with early manual SLRs such as Prakticas, Zeniths (or Zenits) and Pentaxes.

Once hooked, many of this new generation of photographers moved on to the better-specified SLRs of the late 1960s, 1970s and early 1980s – the big five names were Canon, Minolta, Nikon, Olympus and Pentax. Others went back and took an interest in the rangefinder cameras of the 1950s or earlier, with names such as Leica and Contax. Some took the leap into medium-format photography with cameras from manufacturers that included Hasselblad, Mamiya and Bronica.


Early digital cameras such as these from Fujifilm, Sony and Samsung offered low resolution at high prices.

Many retro photographers begin with manual SLRs such as this Zenit-B, which was made in the 1960s.



The Halina 35X does not have exposure automation or a rangefinder, but provides an easy entry into basic 35 mm film photography.

At about the same time, instant film for Polaroid cameras was made again by independent manufacturers and a renewed interest in instant photography began. The really ambitious film photographers diversified into specialized equipment with cameras for panoramic, stereo and subminiature photography. Retro accessories also became popular.

There was a new challenge for born-again film users. Brought up in the era of auto-everything cameras, many had no real knowledge of what the camera was actually doing to adapt its workings to their picture-taking needs. They soon discovered that it all came down to two factors: the way shutter speeds were juggled with apertures and, without the advantages of autofocus, they had to learn the correct way to focus a lens. It was time to go back to basics. This is what this book is all about.

After discussing some of the often forgotten basics, each section deals with a type of camera and how to use it, aiming at the photographer contemplating using a manual or semi-automatic film camera for the first time. The cameras listed are all practical propositions for a retro photographer with a reasonable budget. Each one has been carefully chosen as a typical example of a camera from its era. A comprehensive glossary at the end of the book gives definitions of terms that might be unfamiliar to photographers in the digital age.

An author's note: most retro cameras were made with a choice of lenses, either fixed or interchangeable. The specifications quoted throughout this book refer only to the actual cameras and lenses described and illustrated in each section.


An inexpensive twin-lens reflex such as the Chinese Seagull (left), or perhaps an older 120 roll-film folding camera such as the Voigtländer Bessa 66, can provide an economical way into medium-format photography.


Russian cameras such as this Fed 2 from the 1950s can provide an introduction to 35 mm rangefinder photography.

# Value and Rarity

The price of a retro or classic camera is not always easy to determine. Often it depends on a camera's rarity or how interesting it is to collectors. There are, however, anomalies to consider.

For example, most Leica cameras are of great interest to collectors because of their place in history and the quality of their engineering. This makes them expensive. Most models, though, were made by the thousand and, for those who know where to look, they can still be found in abundance. Equally, the first Kodak Instamatic is a significant photographic landmark. Unlike the Leica, however, collectors see it as no more than a worthless snapshot camera. This means it can be bought very cheaply. So here are two cameras, both landmark examples, which are easy to find, but are at very different ends of the price spectrum.

The increase in the use of retro cameras by the new generation of film users, as opposed to cameras bought by collectors for their historic interest, is another factor that must be considered when valuing a camera.

For these reasons, it is impractical to give accurate prices here for every camera described, particularly since such prices will inevitably fluctuate during the shelf life of the book. Instead, a five-star value rating has been devised, which you will find on the relevant page for each camera. Here's how to read it:

| | |
|---|---|
| ✹✺✺✺✺ | Cheap |
| ✹✹✺✺✺ | Inexpensive |
| ✹✹✹✺✺ | Moderately priced |
| ✹✹✹✹✺ | Relatively expensive |
| ✹✹✹✹✹ | Very expensive |



The Leica M3 and Kodak Instamatic 50: two landmark cameras from opposite ends of the price range.

SYNCHRO-COMPUR

500 250 100 50 25 10 5 2 1 B

B 10 25 50 100 250 500

# The Basics

# Back to Basics

To get good results when using a retro camera, you need to understand the functions of shutter speeds, apertures and focusing. Each does its own job and is interrelated.

For a picture to look natural – not too dark and not too light – it needs to be correctly exposed. This means controlling how much light is transmitted through the lens and onto the film. Shutter speeds and apertures are used for this purpose. The aperture controls the amount of light let through the lens, while the shutter controls the length of time that set amount of light is allowed to reach the film.

The most common types of shutter are leaf and focal plane. With the former, an iris opens and closes to allow light to reach the film for a specific amount of time. With the latter, two blinds are used, one following the other across the focal plane, with the timed exposure controlled by the speed of the blinds and width of the gap between them. Shutter speeds are measured in seconds and fractions of a second.


Shutter speeds are usually set on a camera's top plate dial. (Canon AE-1 shutter-priority camera)


Leaf shutter in the body of a Voigtländer Prominent camera.

The focal-plane shutter in the body of an Olympus OM-1 camera.


Apertures are usually set on a ring around the lens. (Pentax ME Super aperture-priority camera)


The difference between apertures of f/16 and f/1.4 when set on a Nikkor lens.


Focusing is normally carried out with a collar surrounding the lens barrel. (Minolta XD-7 camera)


The aperture traditionally takes the form of an iris that opens and closes to control the amount of light allowed through the lens. Apertures are measured in f-stops: the higher the f-stop number, the smaller the aperture.

Each setting on the aperture or shutter-speed scale is half or double its neighbour, making it possible to set a range of different combinations that, in effect, give the same exposure. For example, a shutter speed of 1/125 second at an aperture of f/11 gives the same exposure as 1/250 second at f/8 because, as the shutter speed is halved, the amount of light through the aperture is doubled. Likewise, 1/125 second at f/11 is equivalent to 1/60 second at f/16 and so on.

Shutter speeds control the way you capture movement. A fast speed will freeze movement, while a slow speed will blur it. If you want a moving subject to appear sharp, then the faster it is moving, the faster the required shutter speed. If you want to be more creative, and blur the action of a moving subject, then go for a slower shutter speed. Using the right shutter speed also helps compensate for shake when hand-holding a camera.

Apertures control depth of field. This is the area of acceptable sharpness in an image either side of the spot where you actually focus the lens. Small apertures provide a deep depth of field, which means everything from the foreground to infinity can be kept in focus. Wide apertures reduce depth of field so that you can isolate a sharp subject against a blurred background.

Focusing is the third function. Whether you are doing this manually, with estimated distances set on a scale around the lens, or with the aid of a rangefinder built into the camera, the principle is the same: focus the lens on the most important part of the subject.

A fast shutter speed stops the action. (Canon F-1 35 mm SLR, 1/500 second at f/5.6)

A small aperture and a wide-angle lens contribute to maximum depth of field. (Canon F-1 35 mm SLR, 20 mm focal length at f/16)

A slow shutter speed can be used to blur movement as you move the camera to follow the subject. (Canon AE-1 35 mm SLR, 1/15 second at f/16)

Keep in mind, however, that the closer you get to the subject, the shallower the depth of field. If you are shooting a wide-open landscape, where the nearest subject is a reasonable distance from the camera, a medium-sized aperture of around f/5.6 or smaller will be sufficient to keep everything in focus. If you move in closer to the main subject, then the background will start to fall out of focus. You need a small aperture to maintain focus, which means you require a slower shutter speed to compensate for this.

This is not as complicated as it sounds. Basic retro camera use is about practising until setting the correct shutter speed/aperture/focus distance for any subject becomes second nature. It means prioritizing the most important aspect of your photograph and then compromising to make sure you have selected the best settings for that subject. Mastering shutter speeds, apertures and focusing in this way is at the heart of retro camera usage.

A long focal length and wide aperture result in a very narrow depth of field. (Canon F-1 35 mm SLR, 200 mm macro lens at f/4)

# Formats and Focal Lengths

The most popular retro camera format is 35 mm, which uses film in cassettes. As each exposure is made, the film is drawn out of the cassette one frame at a time and wound onto a take-up spool. At the end of the roll, it is wound back again into its cassette.

The second most popular is the 120 size roll film. This is rolled onto spindles and attached to backing paper with some extra at each end to protect the film from light during loading and unloading. The backing paper has numbers on it, which can be seen through a red window on the back of the camera, to indicate how far each frame needs to be wound between exposures.

The standard full-frame 35 mm format is 24 × 36 mm.

Today's popular film sizes, left to right: 120, 35 mm and 127.


The third most popular film that is still available today is the 127 size, which is smaller than 120, but is used in the same way.

Large-format sheet film, which comes in individual sheets that must be pre-loaded into a film holder, is occasionally of interest to the retro photographer.

Each film type offers different image formats according to the camera. The smaller the format, the more images you can shoot on a single roll or sheet of film. Here are the most popular formats:

| | |
|---|---|
| 35 mm full frame (36 exposures): | 24 × 36 mm |
| 35 mm half-frame (72 exposures): | 18 × 24 mm |
| 35 mm panoramic (21 exposures): | 24 × 58 mm |
| 35 mm panoramic (12 exposures): | 24 × 105 mm |
| 120 (8 exposures): | 6 × 9 cm |
| 120 (10 exposures): | 6 × 7 cm |
| 120 (12 exposures): | 6 × 6 cm |
| 120 (16 exposures): | 4.5 × 6 cm |
| 127 (8 exposures): | 4 × 6.5 cm |
| 127 (12 exposures): | 4 × 4 cm |
| 127 (16 exposures): | 3 × 4 cm |
| Minox film (up to 36 exposures): | 8 × 11 mm |
| Sheet film (1 exposure) | 10 × 12.7 cm |

The 120 size offers a variety of formats, including 6 × 9 cm, 6 × 7 cm, 6 × 6 cm and 4.5 × 6 cm.

Lenses are identified by their focal lengths: the distance between the centre of a lens and its sharply defined image when the subject is at infinity. The lens that is usually sold with a camera is a standard lens, which gives a natural view, similar to that seen with the human eye. Lenses with longer focal lengths are telephotos, designed to magnify and bring subjects that are far away closer to the camera. Lenses with shorter focal lengths are wide angles, which open up the image to include more details of the subject each side, as well as top and bottom of the viewfinder image, and therefore of the picture.

The way focal lengths are designated varies according to the format of the image on the film. The focal length of a standard lens is approximately equal to the diagonal measurement across the format it serves. For a standard 35 mm image of 24 × 36 mm, this is a little over 43 mm, which most camera manufacturers round up to 50 mm.

A standard lens offers a field of view similar to that seen with the human eye. (90 mm lens on 6 × 7 cm format)

With a medium-format image, measuring 6 × 6 cm, you end up with a standard lens of around 85 mm. When used with their appropriate format, both lenses will give approximately the same view of the subject. But if you put a 50 mm standard lens from a 35 mm camera onto a medium-format camera then it becomes a wide-angle lens. Likewise, if you put an 85 mm standard lens from a medium-format camera on a 35 mm one, it will turn into a medium telephoto.

Different focal lengths are used primarily to manage magnification, or the size you require the subject to appear on film. They can also be used to control perspective: this is the apparent distance between foreground objects and those in the background. A standard focal length records perspective much as you see it with your eyes. If you switch to longer focal lengths then the background appears to advance on the foreground, bunching everything up. Go for a wider-than-standard focal length and the background appears to recede, separating itself more from the foreground.

Focal lengths also play a role in controlling depth of field. Wide-angle lenses give a deep depth of field that is useful for landscapes where you want focus from the foreground all the way into the distance. Telephoto lenses reduce depth of field, making them useful for isolating a subject such as a portrait against a blurred background.

Finally, be aware that long focal lengths exaggerate camera shake. So the longer the focal length in use, the faster the shutter speed required to keep everything shake-free.

Minox colour negative film is still available for sub-miniature photography.

Sheet film used to come in many sizes, but 4 × 5 inch is the format that has survived.

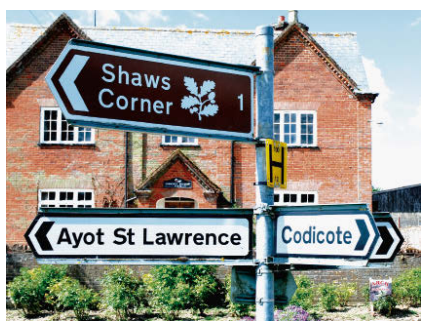
A super-wide-angle lens was needed here to capture the full diameter of a rainbow on a standard 35 mm frame. (16 mm lens on a 35 mm SLR)


A telephoto lens can be used to record details of distant subjects. Here you can see the effects of using a 28 mm lens (above left) and a 400 mm lens (above right) on a 35 mm format from the same camera position.






These photographs show how focal length affects magnification. The same subject is recorded from the same distance on a 35 mm camera with the following focal lengths: top, left to right, 28 mm, 50 mm and 105 mm, and above, left to right, 200 mm, 400 mm and 800 mm.




How focal lengths affect perspective. The pictures were shot at wide, standard and telephoto focal lengths, progressively moving the camera further from the subject as the focal length was increased.

Voigtländer
Anastigmat Skopar 1:3,5 F=7,5cm. № 8657246. Voigtländer
COMPUR

# The Cameras

# 35 mm Single-Lens Reflexes

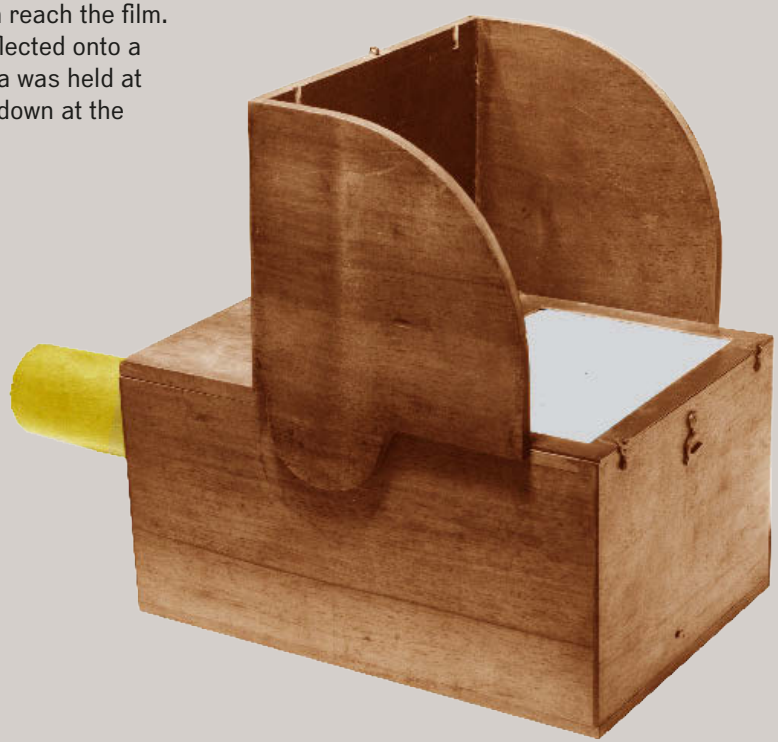
The single-lens reflex (SLR) design is older than photography itself. It dates back to the camera obscura, which was a device used by artists in pre-photographic times to help with composition and perspective. One design was a box with a lens on the front and the image was reflected via a mirror to a screen on top. This, in short, is the basic design of the SLR.

Thomas Sutton was credited with the invention of the photographic SLR. He patented the design in 1861, at a time when photographic images were made on glass plates. Later cameras were designed for different sizes of roll film and, in 1936, the first 35 mm SLR reached the market. It was made by Ihagee in Germany and called the Kine Exakta.

The SLR design places a mirror at an angle between the lens and the film to reflect the image up to a screen above. Once focused, the mirror is moved out of the light path, so that the image from the lens can reach the film. In early 35 mm SLRs, with the image reflected onto a screen on the top of the body, the camera was held at waist level and the photographer looked down at the viewfinder, which showed an image that was laterally reversed. In 1948 a camera called the Contax S became the first 35 mm SLR to use an eye-level viewfinder, incorporating a pentaprism that corrected the reversed image.

Subsequently, the eye-level 35 mm SLR became the most popular style of camera for professional and amateur photographers alike.

Early 35 mm SLRs were mostly made in Germany. Board of Trade restrictions following the Second World War prevented them from being imported into the UK until the late 1950s and, in the aftermath of the war, they were not always popular elsewhere in the world either. Nevertheless, they are worth seeking out today. Japanese SLRs are the better choice for cameras made after 1960.



The camera obscura, from the days before photography, heralded the design of the single-lens reflex.

Steve McCurry, *Taj and Train*, Agra, India, 1983
© Steve McCurry/Magnum Photos


The German Kine Exakta was the first 35 mm SLR.

## BUYERS' TIPS

Choose between totally manual cameras (inexpensive today) and those with some form of metering (more expensive).

If the camera has a meter, check that it works.

Run through the shutter speeds to make sure that the camera isn't stuck on one speed.

Look through the lens and avoid cloudy elements, signs of fungus or heavy scratches. A few light scratches on the front element won't affect the picture quality too much.

Go for Japanese SLRs made after 1960. The top makes are Canon, Minolta, Nikon, Olympus and Pentax, but consider also Ricoh, Konica, Fujica and Topcon.

Top German names from before the Second World War, and into the 1950s, include Zeiss Ikon, Ihagee, Exakta and Voigtländer.

Beware of ex-professional cameras that might have had more use than normal.


The Contax S was the first 35 mm SLR with an eye-level pentaprism viewfinder, which set the style for many years to come.