PENTAX KP

Everything you need to know...
and then some

Edition One

PENTAX *KP*

Foreword and Table of contents

Foreword and Table of contents

I am pleased that you choose the ***PENTAX KP – Everything you need to know...and then some*** e-book. As a PENTAX enthusiast, I have taken photographs with PENTAX cameras since I was a teenager. My first serious camera was a PENTAX Spotmatic, a 35mm film format camera, purchased used when I was still in Junior High. Many, many years later, we have the ***PENTAX KP***, an APS-C DSLR. It is one of the best value in the DSLR market today. It is also one of the most affordable in its class. Although PENTAX is now owned by Ricoh, the core values of the brand remains an innovative brand.

In 2003, PENTAX introduced its first marketable DSLR, the *ist-D. I was excited.

Everything changed again in 2006 when PENTAX introduced the ***K10D***. In my opinion, the ***K10D*** was a breakthrough. It had the capabilities of professional DSLRs with the price of entry-level DSLRs. It had some unique features found nowhere else, at any price.

Fast forward to 2017, the core values haven't changed, but the cameras have improved exponentially.
The ***KP*** has a 24.3 effective megapixels CMOS sensor without anti-aliasing filter, a 100% pentaprism view-finder, a 27 point AF system in which 25 are cross-type, pixel shift resolution, built-in Wi-Fi, Vary-angle LCD monitor screen, and more. Again, it has some an impressive combination of features not found elsewhere at this price, as well as a host of unique capabilities not found in competing DSLRs

This book is not about my biases toward PENTAX. It is about the photographer in you and the information you will need when using the ***KP***. The book is not an extended PENTAX user's manual; It complements the PENTAX user's manual but explains in an unassuming way, how to use this advanced DSLR. It contains techniques, photographs, illustrations, shortcuts, tips, examples and practical information applicable to the ***KP*** as well as other DSLRs in general.

Yvon Bourque

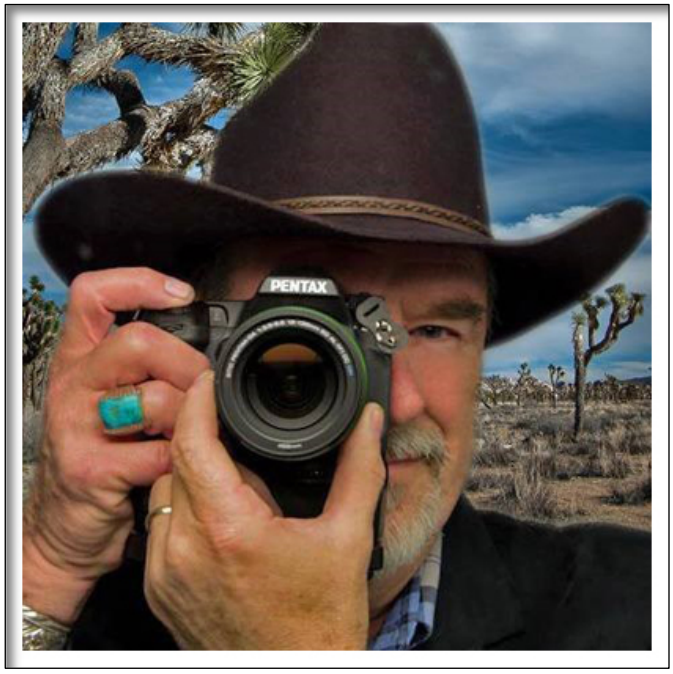
I always appreciate comments from my readers. You can email me directly at: ***brqyvn@gmail.com***

PENTAX *KP*

Everything you need to know…
and then some.

About me:

Back when most of my classmates were dealing with growing up, I was nurturing a serious enthusiasm for photography. Son of a Montreal carpenter, I enrolled in photography courses, soaked up theory, bought my first PENTAX, shot rolls of film, and learned how to develop and print. All this before leaving junior high school. I had many dreams and like many aspiring young photographers, I dreamed of getting assignments from National Geographic and traveling the world over.



Decades later, the road has led me into other directions. With the responsibilities of an engineering career and family, my plans were altered, but only slightly. The enthusiasm of the young boy and the love of photography are stronger than ever. I never abandoned my photography dreams. One of my biggest frustrations was that I never had enough time for more.

I have used all types of photographic formats, but now, I use PENTAX Digital SLR cameras exclusively. ″Technology is awesome. The freedom to unleash one's creativity has never been greater. ″

My work has given me the opportunity to travel. My photography career never took-off as I had dreamed, but as a second career, I spent countless hours during the past decades capturing not only the beauty of this land, but other Nations as well. I have won numerous awards, written articles and books on my beloved subject, and sold my work throughout the places I lived.

Where does an assiduous hobbyist go from here? Like all other areas of our modern life, photography is now digital. As an artist, I am fascinated with all of the possibilities. I recently retired and finally replaced my engineering career shingle for one stating Yvon Bourque, Author and Photographer. "With determination, everything is possible."

Foreword

This e-book will be of interest to all users of the **PENTAX *KP*.** No matter what your experience level is, you will find something valuable for you in this book.

Just a few decades ago, most amateur and professional photographers were using film based cameras for their picture taking. Within the film cameras, several formats were used. The general public and a good number of professionals used the 35mm format. A select few preferred using medium and large format cameras mainly because of the size of the negatives. Larger negatives gave better image quality, better colors and amazing enlargements. Film cameras had evolved to very sophisticated instruments and took great pictures. It's no wonder that almost every family owned a 35mm camera. It was good then, but now, they are almost obsolete.

When the first digital cameras started to appear, the quality was less than desirable, but the potential was certainly there. For several years, many photography magazines were debating whether or not the digital cameras would ever replace film based cameras. Over time, the quality has so improved, that today, digital cameras exceed the quality of film based cameras. Of course, we are comparing the 35mm and medium format film cameras with the new breed of Digital Single Lens Reflex (DSLR) cameras. It has taken many years to get where we are today, but digital is definitely here to stay. Some of you probably never used a film camera before.

It wasn't all that long ago when a top DSLR with a sensor in the 2-megapixel range was costing the consumers nearly five thousand dollars or more. Hey! PENTAX were to introduce the MZ-D at $7,000.00 in 2002. For a while, as soon as you had dished out thousands of dollars for a top-of-the-line DSLR, it was replaced within months with a new and improved model. The pixel race was on.

The market, as this book is written, has stabilized some, although still growing, and the norm in a non-professional DSLR is now around 20 to 25 megapixels, and 25 megapixels and above for most professional DSLR cameras. The ***KP*** is a good indicator with its 24.3 effective megapixels. All are enough to produce very good enlargements up to about 16″ x 20″ and beyond. One advantage of the Pentax brand is that you can use any of the previous twenty-five millions-plus 35mm format lenses. PENTAX still use the smaller sized sensor (APS-C, about 24mm x 16mm) on some of its current line, and the image circle is smaller than the Full Frame sensor. An APS-C 200mm lens has an angle of view comparable to a 300mm telephoto when using an

APS-C DSLR. We know that a good Full Frame 300mm telephoto lens is very expensive and an APS-C 200mm (300mm angle of view) is likely cheaper. Basically, the APS-C lenses have a smaller image circle.

Unless you want to print your pictures billboard size at 300dpi resolution, the current CMOS sensor will be more than sufficient to produce stunning pictures and enlargements that were only dreamed of a few years ago. The CMOS sensors use less power and produce very little noise at higher ISO.

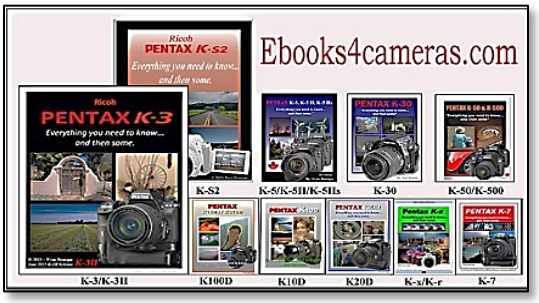
In the past few years, we have seen many brand names in the camera field disappear. Some acquisitions and mergers took place and some companies just abandoned the competitive digital photography market altogether.

In the past decade, two companies appear to have dominated the market; and indeed still do. There is no doubt that they manufacture good products, but the brand loyalty and superior products perception may have played an important role in their success.

With Ricoh introducing the **PENTAX *KP*** the gap between PENTAX and these two giants is narrower and there is no doubt that the PENTAX brand will be, once again, taking a greater share of the market with excellent products. PENTAX took a while before producing its first Digital Single Lens Reflex (DSLR). Some changes have happened. PENTAX is not new to changing the photographic world. PENTAX pioneered the Single Lens Reflex (SLR) camera in 1952 with the introduction of the Asahiflex I camera. In 1954, the Asahiflex II was introduced with the first instant mirror return. In 1964, PENTAX did it again by introducing its PENTAX Spotmatic camera featuring the first through-the-lens (TTL) metering system in a PENTAX camera. A version of the PENTAX TTL system is now found in virtually all 35mm SLR cameras and applied to the design of DSLRs as well. Many of us learned photography by using the ever popular PENTAX K1000.

The new **PENTAX *KP*** is aimed at amateur and professional photographers but can certainly be used by anyone. It's a camera that will help expand your photographic skills. It can be as easy to operate as a point and shoot camera, but it also has all of the professional features that you will demand as your experience grows. With the incorporation of the Wi-Fi capabilities, the weather resistant construction and the articulating screen, PENTAX is leaving the competition behind. All PENTAX lenses ever made will work with the ***KP.*** It is often said that the glass is the most important factor in taking great photographs. There are thousands of reasons to choose a PENTAX for your digital photography endeavors.

Check our PENTAX Blog, "**Pentaxdslrs.blogspot.com**"; we post articles about PENTAX products and photography in general. We also have a website showcasing our e-books. You can download free samples or purchase an e-book for your PENTAX DSLR.



As you read this e-book, refer to the nomenclature in Chapter 1 often until you are thoroughly familiar with all parts of your camera. Navigate through menus of the camera with the four-way controller shown here and illustrated in this book as ▲ for up, ▼ for down, ◄ for left and ► for right. The same buttons (Direct keys) are also used to access the Sensitivity ▲, the Drive Mode ►, the White Balance ▼, and the Flash Mode ◄. The **OK** button is in the center.

The e-book is structured as an 8-1/2" x 11"format and is mirrored so that the margins are wider in the center for printing and binding. You can print this e-book, as is.

Indicates special notes or comment.

Brown… Indicates an outside link when internet is available.

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TABLE OF CONTENTS

FOREWORD and Table of Contents

This book is organized in the following way:

- **Foreword and Table of contents**

- **Chapter 1 "Know your *KP*"** is dedicated to the general specifications of the ***KP*** and the review of the many newest functions of the camera in general.

- **Chapter 2 "How to use your *KP*"** explains the multiple functions of the ***KP***, and includes many pictures and illustrations. It clarifies the use of the camera's functions from screen menus to actual buttons and switches. There are some simple icons on the camera Mode Dial, but the various modes make it more like a Pro Camera. The advantage of this camera is that you can tailor its operability to your liking or photographic skills. The three basic shooting elements; Aperture, Shutter Speed and the Sensitivity (ISO) are all adjustable with the ***KP*** in ways that will make the competition rethink their approach. It will not be long before other manufacturers try to imitate the ***KP.***

- **Chapter 3 "Processing your *KP* Images"** is a brief review on how to manipulate your images within the camera as well as with a computer. This topic alone is worthy of a book by itself, and there are indeed many books on Digital Imaging readily available. The PENTAX "Silkypix" software and other digital imaging software such as Photoshop®, Lightroom®, and Elements®, as well as Apple's Photo are briefly visited. The possibilities are endless and are only limited by your ability or desire to manipulate and post-process your images.

- **Chapter 4 "The PENTAX System"** is dedicated to the PENTAX System. PENTAX is truly the only manufacturer with 100% backward compatibility. It includes all lenses ever manufactured by PENTAX. It can use APS-C, 35mm and medium format lenses. There are about twenty-five million+ genuine PENTAX lenses out there. There are probably that many more manufactured by companies such as Tamron ™, Sigma ™, Tokina ™ and other brands. Currently available accessories are also covered and explained in this chapter.

- **Chapter 5 "Photography Techniques"** is full of technical material and example with pictures, along with some suggestions on composition.

- **Chapter 6 "HD Video recording"** is dedicated to the HD video capabilities of the ***KP***. This new generation of DSLRs with still pictures and HD video ca-

pabilities is changing the digital photography landscape. It opens up new possibilities. It is going to be very popular for documenting and photojournalistic approach to your undertakings. The ***KP*** has good video capabilities.

- ***"*Addendum*"*** is comprised of Special Features, additional ***KP*** functions, last minute changes, upgrades to software or firmware and any revisions added after the initial release.

- ***"*Appendix*"*** contains a glossary of Digital Photography commonly used terms.

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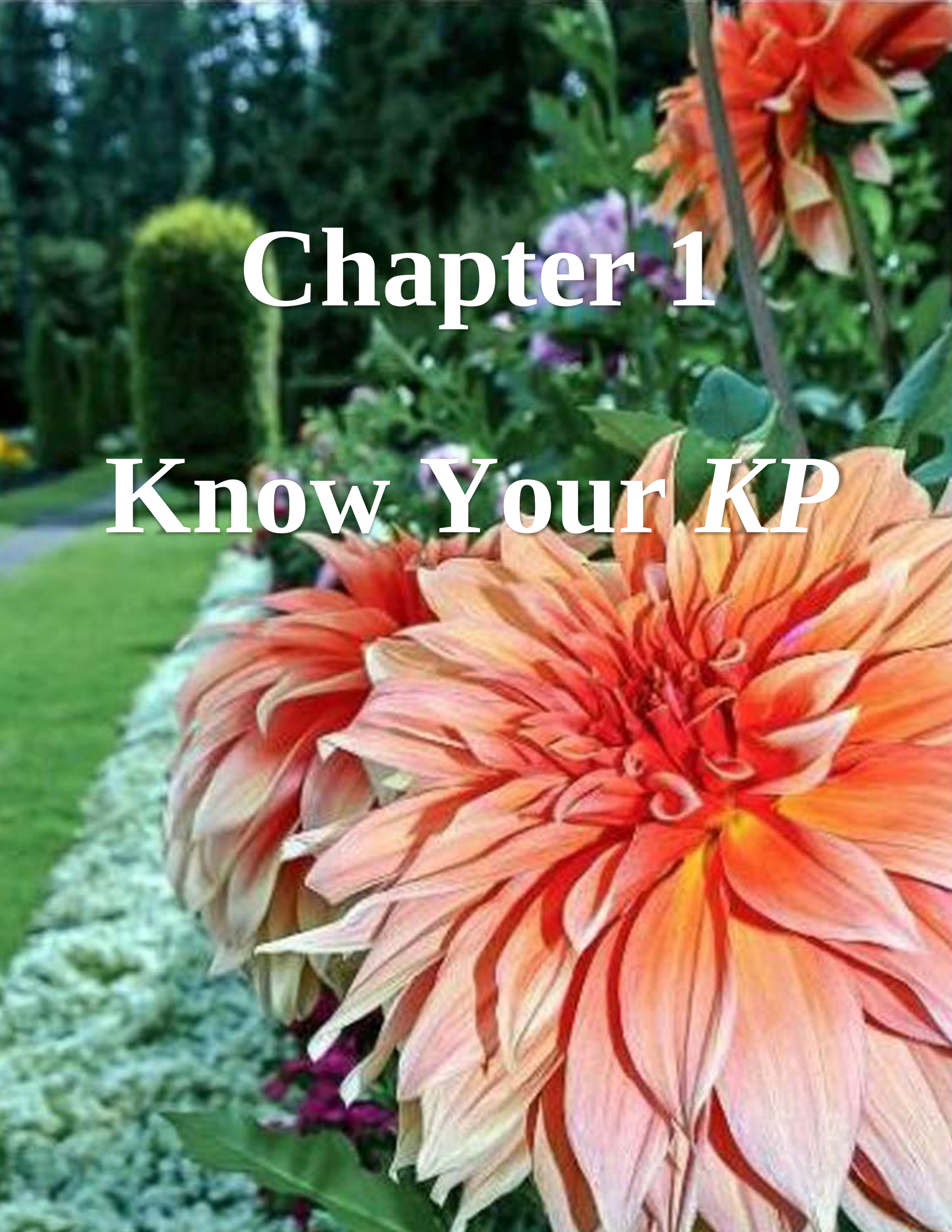


Chapter 1

Know Your *KP*

Chapter 2
How to use your
KP

The following pages show the various options that can be set through the screen based menus. Don't worry if it is a little overwhelming, everything is covered in detail somewhere in this book. You can jump to the details by clicking on a section.

REC Mode Menus

*1 Available as a control panel item.
*2 Available as a function of the function dial.
*3 The function appears only in U1 to U5 modes.

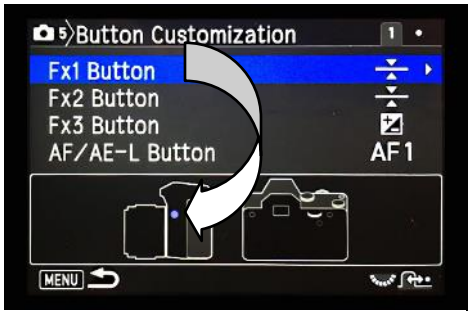
Page 1

1	Custom Image *1 *2		Sets the image finishing tone such as color and contrast before shooting an image.	Bright
	AF with Viewfinder	AF Mode *1 *2	Selects the autofocus mode for shooting with the viewfinder.	**AF.S**
		AF Active Area *1 *2	Selects the area to adjust the focus for shooting with the viewfinder.	Auto (27 AF Points)
		AF.S Setting	Sets the action priority for when the autofocus mode is set to **AF.S** and SHUTTER is fully pressed.	Focus-priority
		1st Frame Action in AF.C	Sets the action priority for the first frame when the autofocus mode is set to **AF.C** and SHUTTER is fully pressed.	Auto
		Action in AF.C Cont.	Sets the action priority during Continuous Shooting when the autofocus mode is set to **AF.C**.	Auto
		Hold AF Status	Maintains the focus for a certain amount of time when the subject happens to move out of the selected focusing area after being focused.	Low
	AF with Live View	AF Active Area *1 *2	Selects the area to adjust the focus for shooting with Live View.	Face Detection
		Focus Peaking *1 *2	Emphasizes the outline and contrast of the subject in focus and makes it easier to check the focus.	Off
		AF.S Setting	Sets the action priority for when SHUTTER is fully pressed.	Focus-priority
	AF Assist Light *1		Illuminates the assist light when autofocusing in dark locations.	On
	AE Metering *1		Selects the part of the sensor to use for measuring brightness and determining the exposure.	Multi-segment
	ISO AUTO Setting	ISO Range (Maximum) *1	Sets the upper limit value for ISO AUTO.	ISO 6400
		ISO Range (Minimum)	Sets the lower limit value for ISO AUTO.	ISO 100
		ISO Sensitivity Options *1	Sets whether to set the minimum shutter speed automatically or manually.	AUTO
		Minimum Shutter Speed	Selects the shutter speed option or sets the minimum shutter speed.	Std.
1	Program Line *1 *2		Selects the Program Line setting.	Std.
	Exposure Mode *3	Exposure Mode	Temporarily changes the exposure mode when the mode dial is set to one of the modes from U1 to U5.	**P**
		Program Line	Selects the Program Line setting when the mode dial is set to one of the modes from U1 to U5.	Std.

On camera, mechanical devices for functions and settings.

Well, the ***KP***, as mentioned above, has many analog buttons, dials, wheels and switches, but the reality is…they trigger digital circuitries.

Image	Device	What is does
	Main Switch	This switch turns the camera to On or Off.
	Mode Dial	The Mode Dial lets you change the shooting mode. The modes are imprinted on top of the dial. The mode dial lock in the center is pushed down to turn the mode dial.
	Function Dial	The Function Dial works together with the Setting Dial. Turn the Function Dial to access a function imprinted on the top of the dial. The Function Dial is customizable in Rec Menus page 5
	Setting Dial	The Setting Dial works together with the Function Dial. Once you have chosen a function from turning the Function Dial, turn the Setting Dial to adjust the corresponding setting values. The Setting Dial is customizable in Rec Menus page 5
	Capture Mode Switch	Toggles between capturing still pictures, Live View and making movies. The switch is squeezed in between the camera top surface and the Function Dial.
	Front e-Dial	Changes selected value. Also used to select an image. Changes a menu directory when a menu is displayed. In Playback mode, it is used to select different images. 



Button Location

A handy diagram shows the location of the button being customized or used on the camera.

The possible customizations are:

- **EV Compensation**
- **ISO Sensitivity**
- **Preview**
- **AE-L AE Lock**
- **Change AF Area**
- **One Push File Format**
- **Electronic Level**
- **Wi-Fi -** *(Fx1 only)*
- **Night Vision LCD Display –** *(Fx1 only)*
- **Operation Control Lock**

	Setting	Function
Fx1 Button Fx2 Button Fx3 Button	EV Compensation	Sets the exposure compensation value (assigned to Fx3 by default).
	Sensitivity	Sets the ISO sensitivity.
	Preview	Displays the preview image to check the composition, exposure, and focus before shooting.
	AE Lock	Locks the exposure settings.
	Change AF Area	Switches the function of the arrow keys to AF area change mode or direct key operation mode.
	One Push File Format	Temporarily changes the file format (assigned to Fx1 by default).
	Electronic Level	Turns the Electronic Level display for the viewfinder and Live View on or off (assigned to Fx2 by default).
	Wi-Fi *1	Turns the Wi-Fi™ function on or off.
	Night Vision LCD Display *1	Turns the Night Vision LCD Display feature on or off.
	Operation Control Lock	Enables or disables the Operation Control Lock feature.

AF/ AE-L Button Customization

	AF AE-L Button	The rear AF button is an alternative to pressing the shutter release halfway. It can be programmed in Rec. Menus page 5 to be active while the Shutter release halfway is also operative, or while the shutter release halfway is completely disabled or while the shutter release halfway is disabled if the AF Button is pressed. In Playback Menu, it can save the last JPEG image to RAW format.

	Setting	Function
AF/AE-L Button	Enable AF1	Autofocus is performed when AF/AE-L is pressed.
	Enable AF2	Autofocus is performed when AF/AE-L is pressed. Half press of SHUTTER is disabled.
	Cancel AF	While AF/AE-L is pressed, half press of SHUTTER is disabled.
	AE Lock	Locks the exposure settings.

The Auto Focusing can be achieved with the shutter release pressed halfway or with the dedicated AF Mode button on the back of the camera. There are three settings.

- **Enable AF1** – In AF1, AF is performed when the AF/AE-L button is pressed.

- **Enable AF2** – In AF2, AF with shutter release button is disabled so AF is performed with the AF/AE-L button

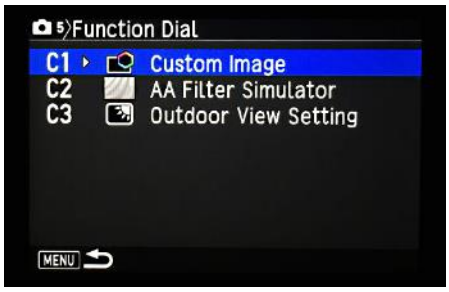
- ~~**AE**~~ **Cancel AF** – **AF** using the shutter release halfway is disabled while the AF button is pressed. In other words, it lets you choose which AF method to use on the fly.

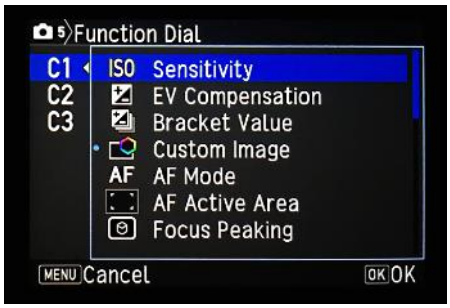
- **AE-L AE Lock** – Locks the exposure value when the AF/AE-L button is pressed.

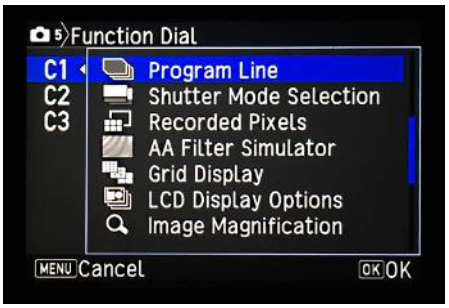
Function Dial Customization

	Function Dial	The Function Dial works together with the Setting Dial. Turn the Function Dial to access a function imprinted on the top of the dial.

Some functions (Customization) can be assigned to C1, C2 and C3 on the Function Dial. This is customizable again in the Rec. menu's page 5. The factory preset for C1 is Custom Image, C2 is AA Filter Simulator, and C3 is Outdoor View Setting. All listed functions below are assignable.







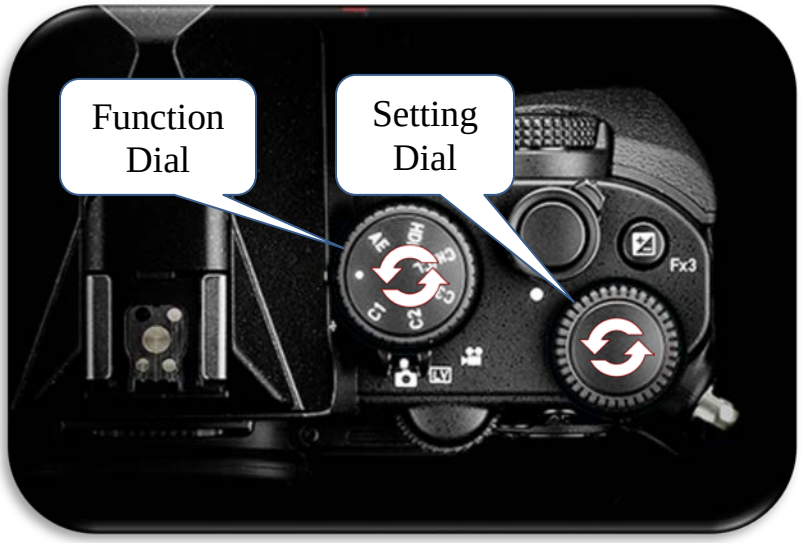
Setting	Function
Sensitivity	Changes the ISO sensitivity.
EV Compensation	Changes the exposure compensation value.
Bracket Value	Changes the bracket value for Bracketing.
Custom Image	Changes the image finishing tone for Custom Image (assigned to C1 by default).
AF Mode	Changes the autofocus mode.
AF Active Area	Changes the focusing area selection mode.

Setting	Function
Focus Peaking	Changes the Focus Peaking setting.
Program Line	Changes the Program Line setting.
Shutter Mode Selection	Switches between the mechanical shutter and the electronic shutter.
Recorded Pixels	Changes the number of recorded pixels of an image or movie.
AA Filter Simulator	Changes the capture type of AA Filter Simulator (assigned to C2 by default).

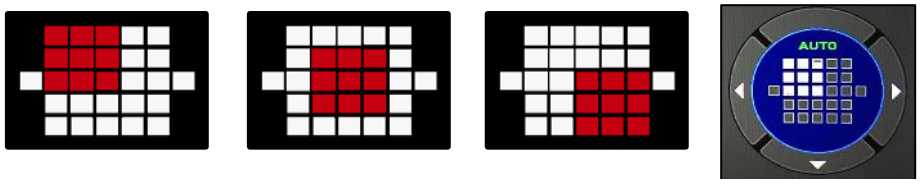
Setting	Function
Grid Display	Changes the type of the grid lines displayed during Live View or playback.
LCD Display Options	Changes the type of information displayed during shooting or playback.
Image Magnification	Magnifies the image when shooting with Live View or during playback.
Outdoor View Setting	Changes the brightness of the monitor (assigned to C3 by default).

You can also customize or assign different functions using the Function Dial. Rotate the Function Dial to one of the six selections., and adjust its parameters by turning the Setting Dial.

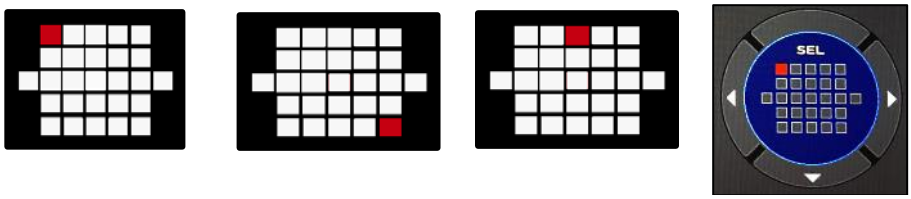
This camera is unbelievably versatile. You can really set it up to your own preferences. We're not done just yet. We can still customize or program the front and rear e-dials.



AUTO 9 It uses a 9-point base and automatically tries to identify your subject. The 9 AF Points can be moved within the 27 AF Points matrix with the four-way controller, but only the 9 Points are being used at one time.

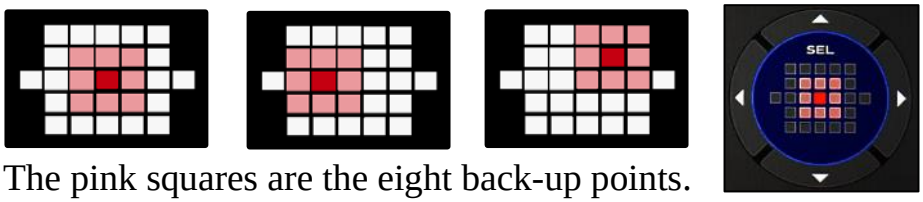


SEL Selects the focusing area to the user designated point, anywhere within the 27-point matrix.



SEL S Sets the focusing area to the user selected point within the 27-point matrix. If the subject moves out of the selected focusing area after focusing is achieved, 8 peripheral points are used as back-up points.

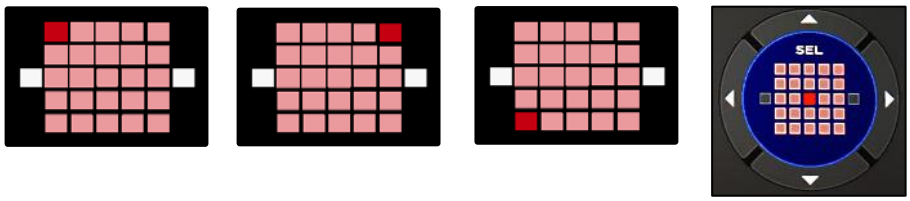
✶Available only in **AF.C** mode.



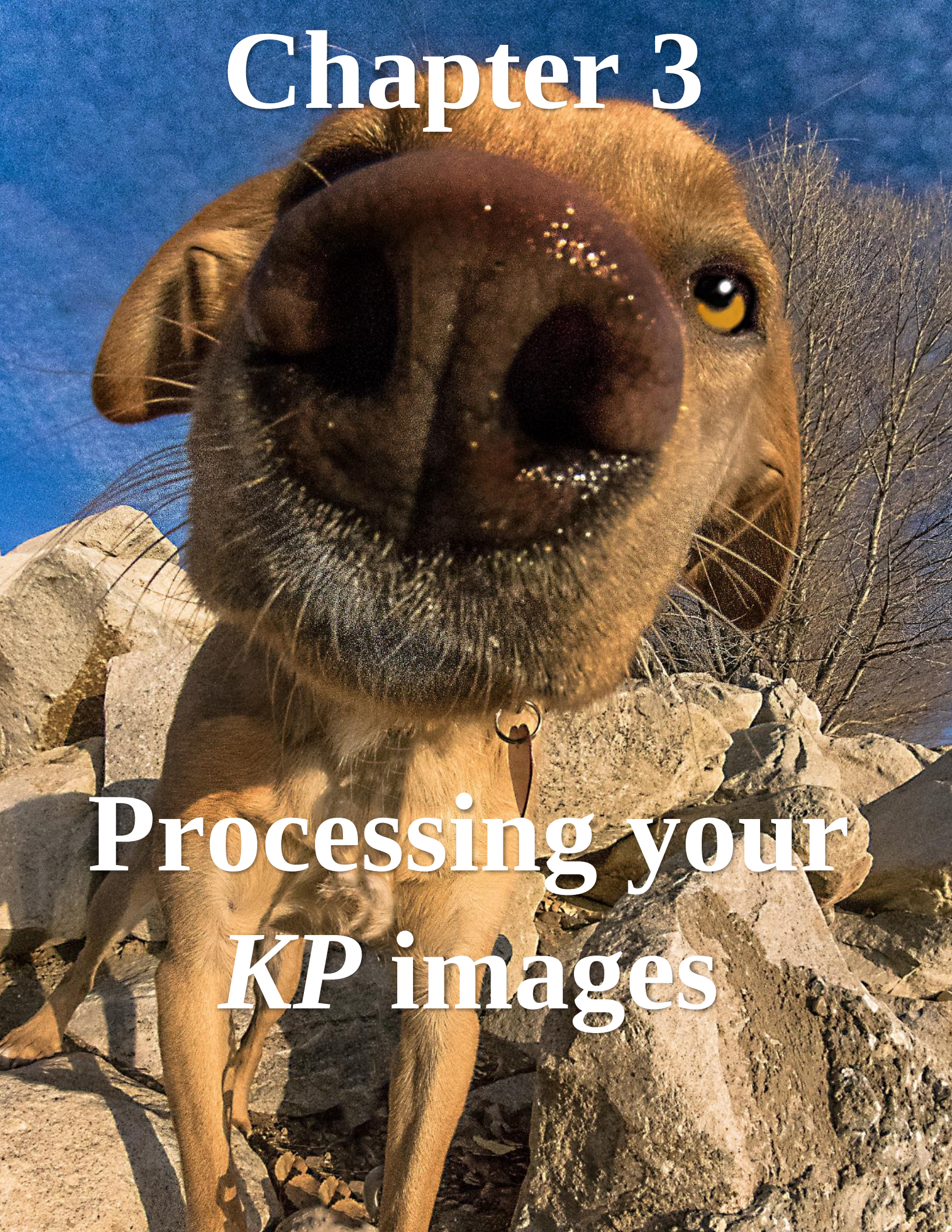
The pink squares are the eight back-up points.

SEL M Sets the focusing area to the user selected point from the 27-point matrix. If the subject moves out of the selected focusing area after focusing is achieved, 24 peripheral points are used as back-up points.

✶Available only in **AF.C** mode.



The pink squares are the twenty-four back-up points.



Chapter 3

Processing your *KP* images

In-Camera Image Processing

RAW and **JPEG** images can be processed and manipulated in-camera. This allows you to develop your images without the use of a computer.

Editing Images *(Already captured images)*

Make sure that you have images recorded on the memory card. Press the Playback button ▶ to activate the Playback screen. Using the four-way controller ◄►, navigate to the image you want to edit until it is displayed on the LCD monitor. Press the four-way controller ▼ down. The camera displays the Playback mode palette.

The Playback mode palette is one powerful feature. Working without a computer or external software, you can perform the following enhancements and modifications to one image or to multiple images.

Image Rotation	Rotate your image(s)
Digital Filter	Add various digital filter effects to your images
Color Moiré Correction	Eliminates Moiré
Resize	Change the number of recorded pixels or quality
Cropping	Crop you image to your desired taste
Protect	Protect image(s) from being erased
Slideshow	Play the images sequentially as a slide presentation
Save as Manual WB	Copy the White Balance from one image as manual WB
Save Cross Processing	Saves Cross Processing as favorite
RAW development	Convert RAW image(s) to JPEG or TIFF format
Movie Edit	Divides movie or extract segment

Image Rotation

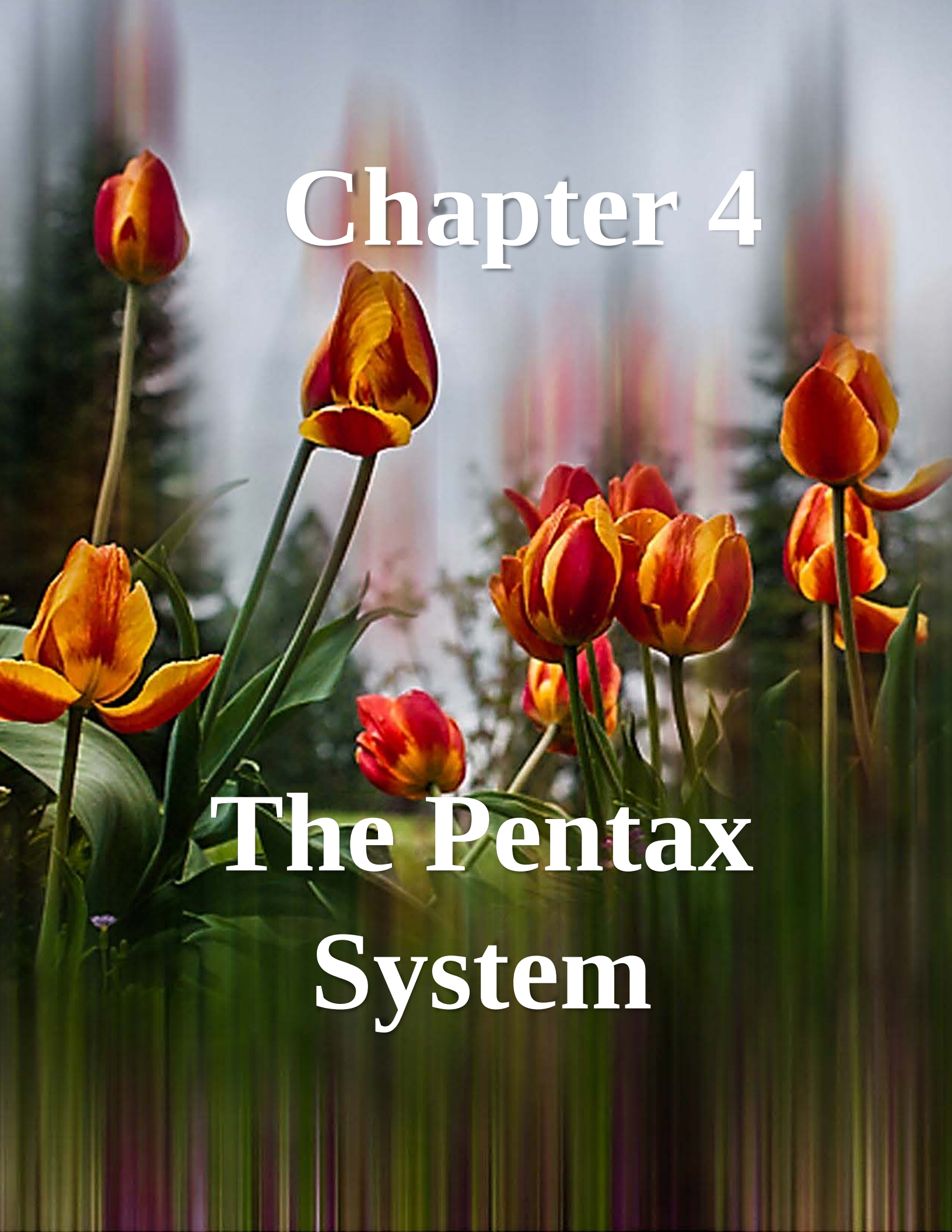
Navigate through the options to your desired effect. Press the OK button once the green box surrounds what action you want to take. In this first example, we have chosen to rotate an image.

Image can be rotated in increments of 90 degrees.

Digital Filter *Digital filters can only be saved as JPEG files.*

The following filters effects are all a matter of taste and I suggest you play around and find the ones you like best. I like the in-camera filters for a quick manipulation of a JPEG image to send immediately over the Internet. If you want to manipulate your images, the results can be more professional looking when using software like the Adobe series of Digital Imaging programs. Furthermore, a desktop computer will likely have more crunching power than the mini-computer in your camera. That said, it's amazing to me that you can process your images, in-camera, all without the use of a computer. You can also bring the memory card, with the filters applied to some images, to a Kiosk for printing your images. Costco, for example, can process your digital images (files) instantly.

Base image with filter effects on the following page.



Chapter 4

The Pentax System

Lenses

Lens Compatibility

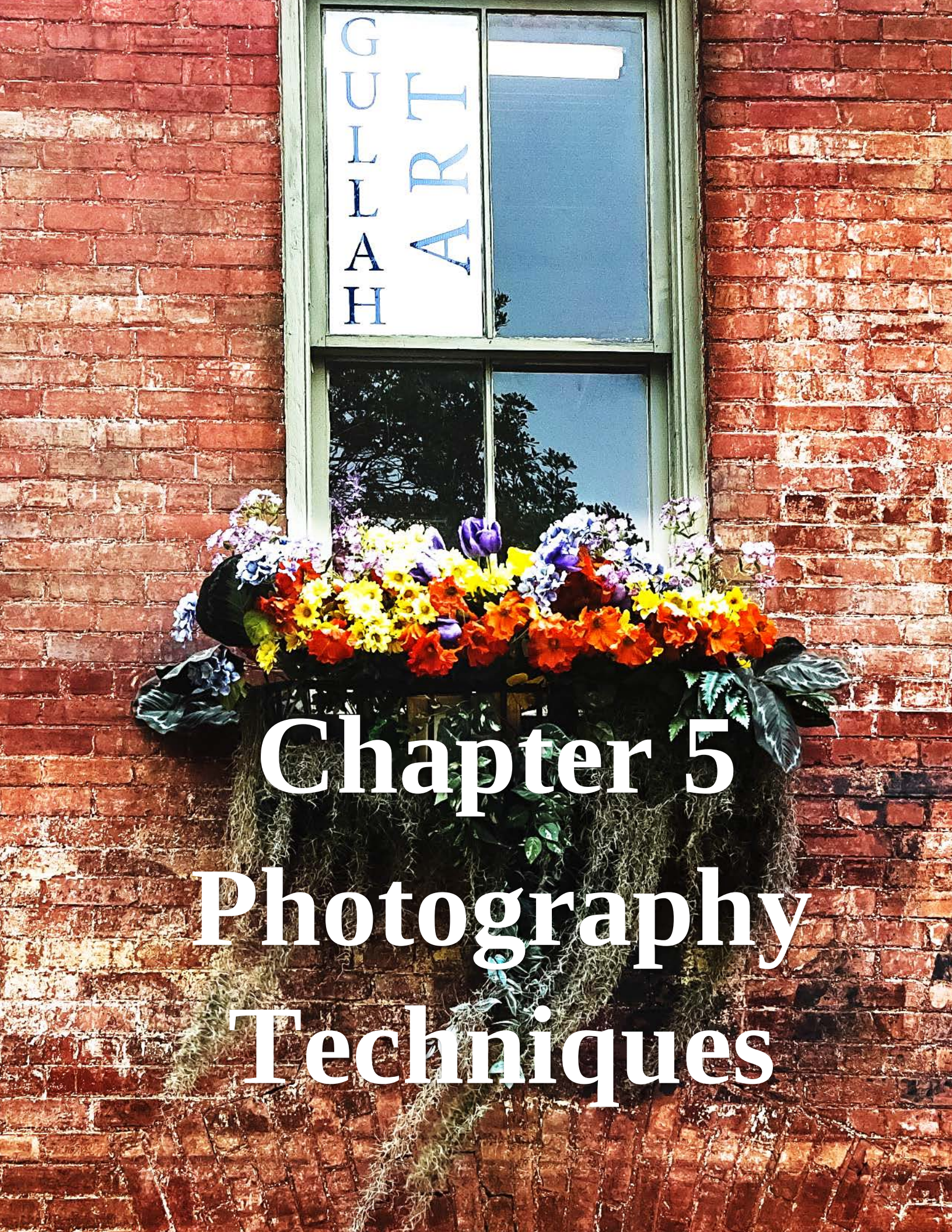
Worldwide, millions of Pentax lenses are available. Let's look at the lens mounts produced by Pentax over the years, and see what functions are still usable when using them on your ***KP.*** The current lens mount is a version of the original Pentax K-mount. The K mount has undergone several developments over the years as new functionalities were added.

M42 screw-mount: The original screw mount standardized in the U.S. by Pentax. Lenses with the M42 screw-mount can be used on the ***KP*** with adapters and with some limited compatibility.

K mount (1975): The original K mount is a simple bayonet connection with three tabs, introduced with the K series of cameras.

K_F mount (1981): This was Pentax's first attempt at an autofocus system.

K_A mount (1983): It allows the lens aperture to be set by the body.



Chapter 5 Photography Techniques

Although this book is intented to be used with the ***Pentax KP***, there are some basic photography techniques we should touch upon. Keep in mind that this chapter will not make you a Professional Photographer by itself. Like all other skills we learn, practice is what makes us excel in any of our undertakings. There are many books about photo techniques on the market that you can get to further learn the craft and art of photography. For years, Kodak has regularly published photography books targeted to the beginners all the way on up to the professional photographers.

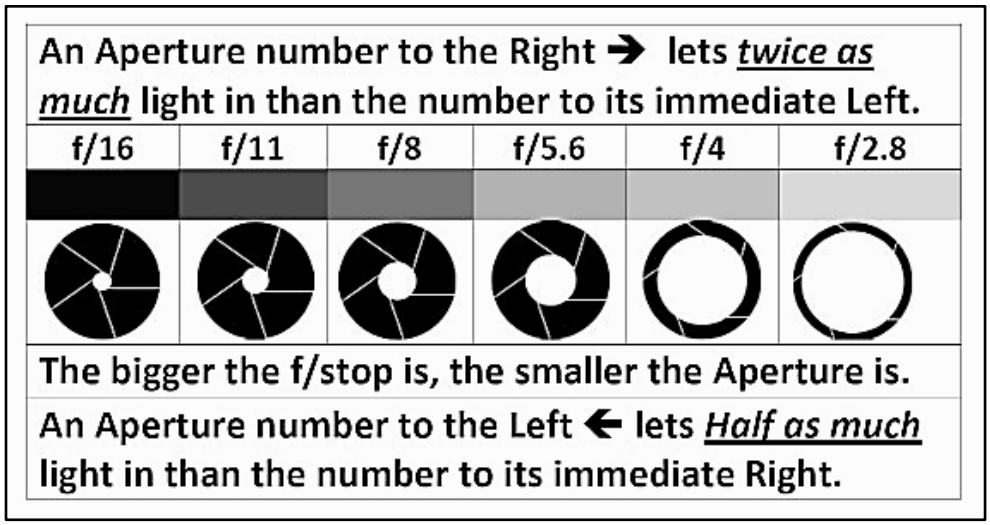
Photography, is about light. It's about light reaching a media, film or digital sensor, and turning the results into an image that we can see, on a computer screen for example, or printed on paper.

Other than the actual lighting conditions of a scene, there are three major factors that directly affect how the light reaches the recording media. The Aperture (*lens opening*), the shutter speed (*the speed at which the shutter opens and closes*) and the media sensitivity also known as ISO number *(the amount of light recorded on the media for a given exposure)*. Too much light reaching the media, and the image becomes washed out. Too little light reaching the media, and the image becomes too dark.

This is to say that the balance between these three settings must be just right. Technically speaking, a large aperture will let a lot of light in, and therefore the shutter speed and/or the recording media will need to be adjusted accordingly. Let's assume for a moment that the sensitivity is set at ISO 200 and cannot be changed. We now have to balance the aperture and shutter speed to get the correct amount of light in. Again, assuming that an aperture of *f/*4 at a shutter speed of 1/125th of a second would be adequate, the same results could be achieved with an aperture of *f/*5.6 at a shutter speed of 1/60th of a second. In other words, increasing the aperture by one *f/*stop and decrease the shutter speed by one step, the same amount of light would reach the film or sensor. The difference between the two is the composition (depth of field or clarity of moving subjects). Since we are dealing with digital single lens reflex (***DSLR***) cameras, from now on lets use the word "sensor" for the media.

Apeture scale explained

The aperture, being the lens diaghphram opening, allows more or less light pass through the lens. The *f/number (aperture opening)* is proportional to the ratio between the lens focal length and aperture diameter, which is proportional to the square root of the aperture area. Big lingo, but what does it mean for you? Well, lenses are usually marked with the *f/numbers* ranging from the largest aperture to the smallest aperture. For example, a typical lens could have an aperture range of *f/16 to f/2.8*. The lens would be marked as follow : *f/16, f/11, f/8, f/5.6, f/4, f/2.8*. In this example, the largest aperture would be *f/2.8* while the smallest would be *f/16*. Have you noticed something a little unexpected here? The larger the number is, the smaller the aperture is. You need to remember that. Furthermore, each *(f-stop)* number to the right lets twice the amount of light in as the *(f-stop)* number to its left and each *(f-stop)* number to the left lets half the light in as the *(f-stop)* number to its right. For example, *f/4* lets twice as much light in as *f/5.6* but only one half the light of *f/2.8*, and so on. One unit of increment in aperture is called a stop.



An ***f***/stop number to the right lets **twice as much** light in than the number to its left.
f/16 / ***f/11*** / ***f/8*** / ***f/5.6*** / ***f/4*** / ***f/2.8***
An ***f***/stop number to the left lets **half as much** light in than the number to its right.

The f-number is a geometric progression based on changes in the size of the lens aperture, as it is opened and closed. As the scale rises, each number is multiplied by a factor of 1.4. The standard numbers for Calibration are f/1.0, f/1.4, f/2, f/2.8, f/4, f/5.6, f/8, f/11, f/16, f/22, f/32, etc. Each change results in a doubling or halving of the amount of light transmitted by the lens to the film or sensor plane.

Chapter 6

Movie Recording

The ***KP*** can capture beautiful, true-to-life movie clips in up to FullHD proportions (1920x1080 pixels) at a frame rate of 24p, 25p, 30p and 50i , 60i frames per second. It also records in HD (1280 x720) at 50p and 60p. Interval shooting can also produce 4K movies.

*Remember that the **KP** is primarily a still image camera. If your intentions are to produce professional video clips or full length movies, this camera is probably not the best choice. However, it takes great video compared to smart phones and amateur video cameras with their small sensors. A complete e-book could be written on movie making. For that reason, this chapter explains the video functionality of the **KP** but does not go into details on movie making skills. Perhaps this could be a separate e-book, someday, for all Pentax DSLRs.*

The movies are recorded in MPEG-4AVC/H.264 (MOV)

The numbers (24p, 25p, 30p, 50p and 60p) represent how many times the video frame is displayed per second. The letters p indicates that the video frame is displayed using progressive format.

- *The 24p video frame rate is closer to that of film in theatrical motion pictures.*
- *The video frame rates 50i and 60i are recommended for normal recording.*
- *The 25p video frame rate is used in countries outside of the United States and Canada.*
- *The 50p video frame rate has double information per unit time. This is great for creating slow motion clips.*

Progressive video content displays both the even and odd scan lines (the entire video frame) at the same time.

The ***KP*** also provides greater possibilities in visual presentation in movies, especially through the application of custom images and digital filters. With its large image sensor, with performance rivaling professional video cameras, high-performance imaging engine, and a wide selection of acclaimed Pentax interchangeable lenses, you can easily capture unique, eye-catching movie clips.

Movie recording

Pentax is getting better at movie recording. Not only does the ***KP*** record in FULL HD at all frames-per-seconds, the camera can record sound from the built-in stereo microphone. An external stereo microphone can also be used. You wouldn't want to record any serious movie with the onboard microphone, as the camera focus and audible noise would also be recorded. The file format is MPEG-4 AVC/H.264. Motion JPEG (AVI) is what the camera records internally only.

I was astonished with the first video clip I produced using the ***KP*** and the kit lens. You can really control the depth of field, compared to results achieved with most dedicated video cameras with their small sensors.

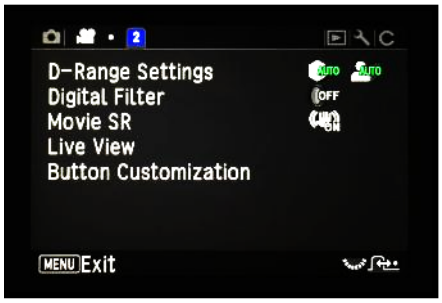
Once you experience the video capability of this camera, you'll want to use it, but remember that it will not give the results of a professional Video-Cam.

The ***KP*** has a stereo built-in mic and also accepts an external mic.

Settings for Movie Recording

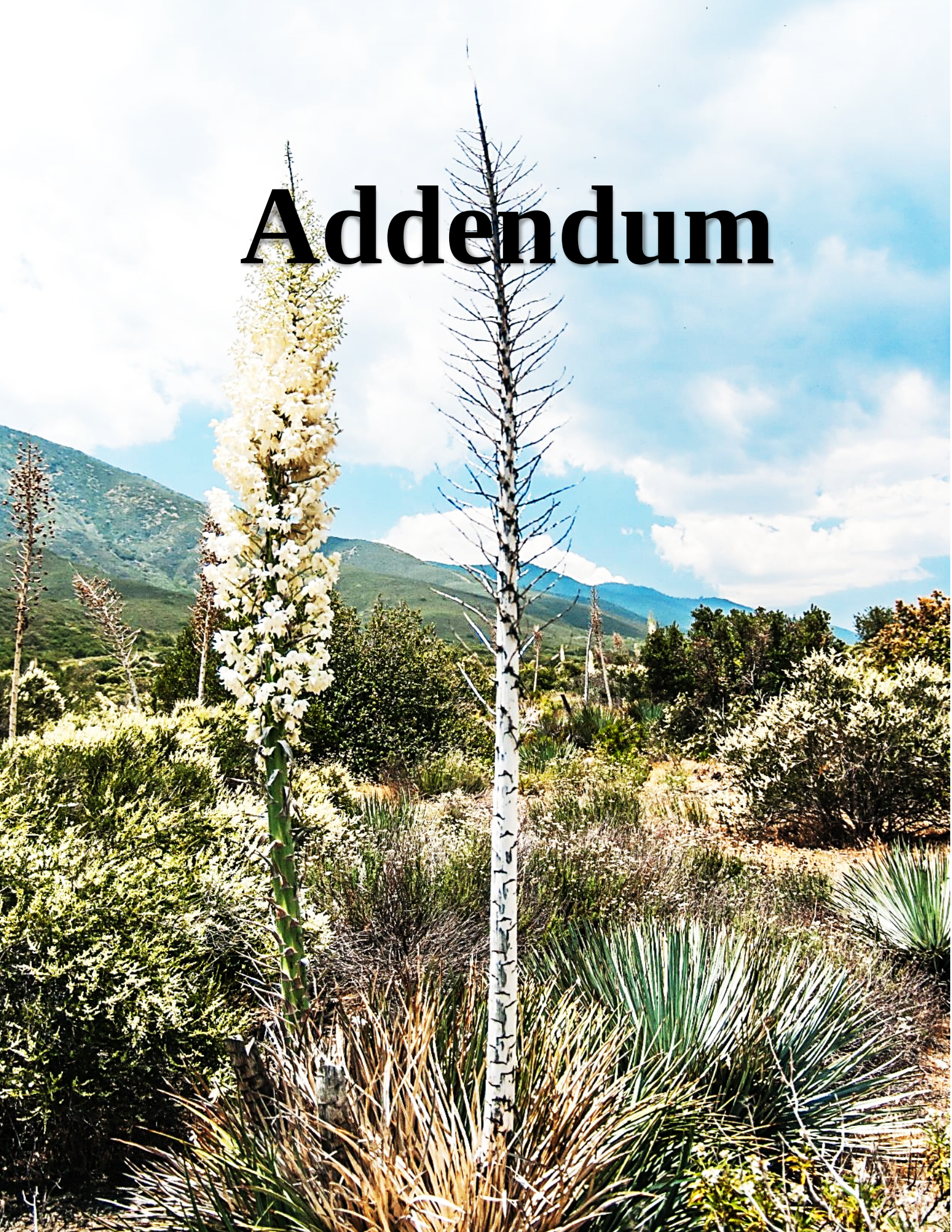
Press the MENU button and use the four-way controller to navigate to the Movie Menu.

The settings for Movie Recording is occupying two pages.



We are going down through all options in the next few pages.

Addendum



Night Vision LCD Display

When shooting at night, it is sometimes difficult to adjust your vision from dark to bright (Shooting stars and night sky). This function changed the LCD screen color to red.

Indicator Lamps

You can set whether the self-timer lamp will blink during the countdown when sing the self-timer.

GPS LED Indication

Sets whether to light up the indicator lamps on the GPS unit when it is attached to the camera.

Set-up Menus page 3

USB Connection

Sets the USB connection mode when connecting to a computer with with a commercially available USB cable.

PTP	Allows you to perform tethered shooting by operating the camera with a computer.
MSC (default setting)	Allows you to copy the data on the memory card to a computer by making the computer recognize the camera as a removable disk.


NO PARKING
ON
SIDEWALK
$200
FINE
NO STOPPING
ANYTIME
FIRE
LANE

Appendix