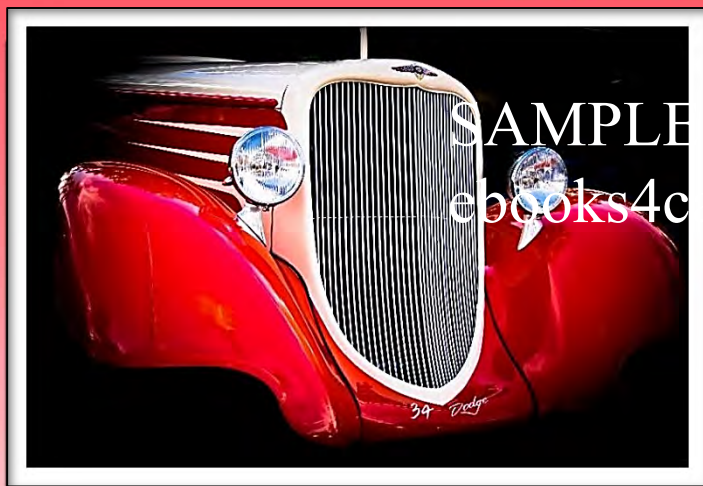


Ricoh *Pentax K-1*

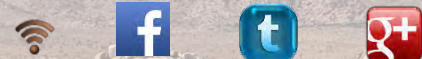
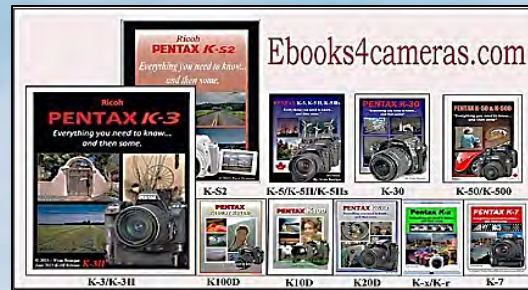
Everything you need to know...
and then some



The new **PENTAX K-1** is aimed at advanced 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, but it also has all of the professional features that you will demand as your experience grows. With the GPS incorporation, the Wi-Fi capabilities, the weather resistant construction and the new articulating screen, PENTAX is leaving the competition behind. All PENTAX lenses ever made will work with the K-1. 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 needs.

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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 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 Drive modes ▲, the Custom image ▶, Custom Fx2 ▼, and the White Balance ◀. The OK button is in the center.

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

Note Indicates special notes or comment.

⊞ Brown... Indicates an outside link when internet is available.

⊞ Blue Indicates a link within the e-book





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 *This extra space is reserved for future revisions. Pentax usually introduce an updated version of their camera about every year, and a totally new model about every two years.*

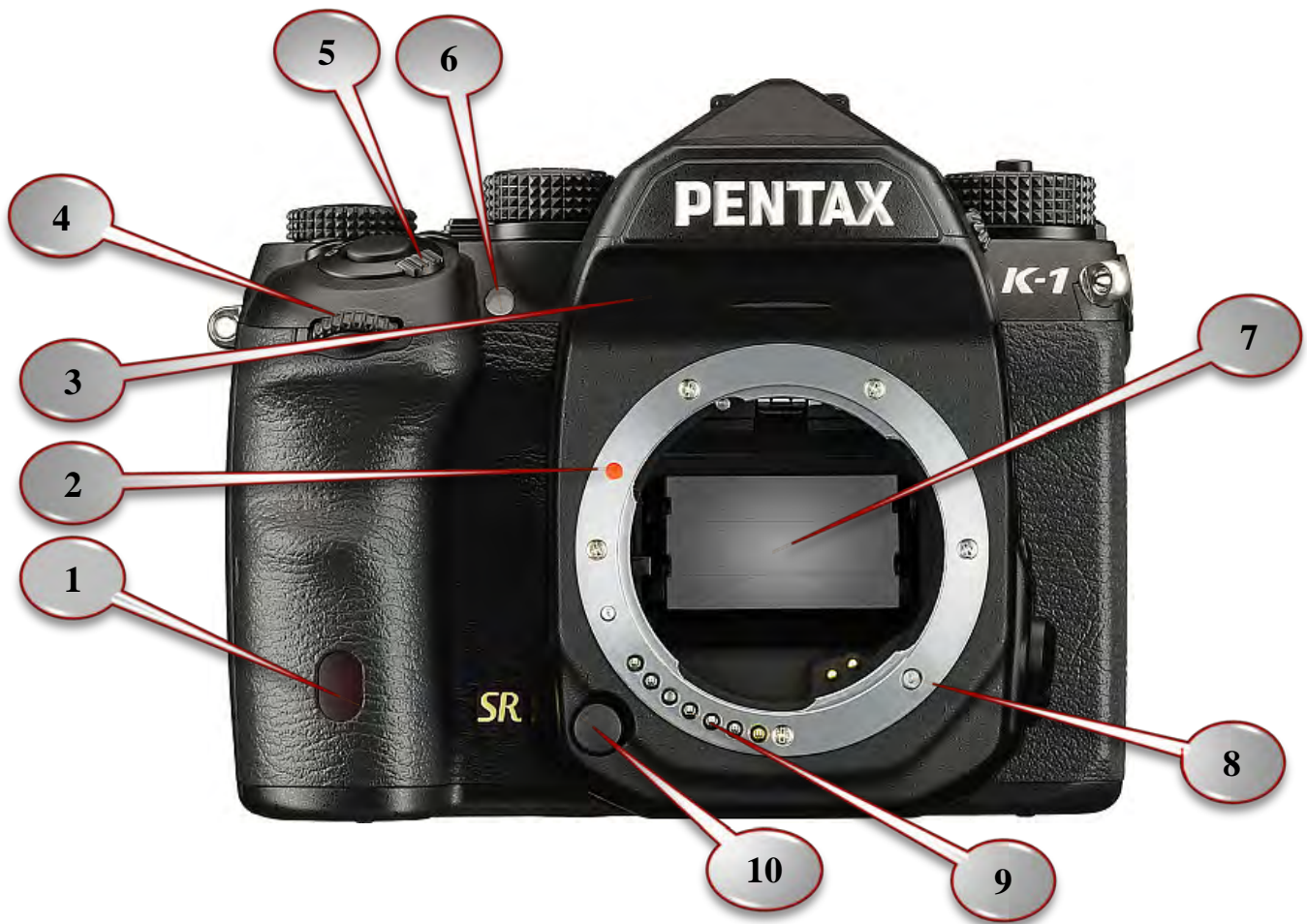
• Firmware Revision Version 1.10	

Chapter 1



Know Your *K-1*

Nomenclature



1. Self-timer lamp	Blinks for self-timer. Serves as remote control receiver.
2. Lens mount index	Reference point to install lenses.
3. LED light	Light to see lens mount in dark area
4. Front e-dial	Changes set values. (Customizable)
5. Main switch	Move to turn camera on/ off and to see preview. (Customizable)
6. AF Assist Light	Lights up when AF is difficult to attain in darker scenes.
7. Mirror	Mirror lifts up during exposure. The sensor is under.
8. AF coupler	Handles the AF drive between the lens and the camera.
9. Lens info contacts	Exchanges info between the lens and the camera for exposure.
10. Lens unlock button	Press to remove or install a lens.

PENTAX K-1 Specifications

Model Description

Type	TTL autofocus, auto-exposure SLR digital-still camera
Lens Mount	<ul style="list-style-type: none"> • PENTAX KAF2 bayonet mount (AF coupler, lens information contacts, • K-mount with power contacts)
Compatible Lens	<ul style="list-style-type: none"> • KAF3, KAF2 (power zoom compatible), KAF, KA mount lens

Image Capture Unit

Image Sensor	<ul style="list-style-type: none"> • Primary color filter, CMOS. Size: 35.9 x 24.0 (mm)
Effective Pixels	<ul style="list-style-type: none"> • Approx. 36.40 megapixels
Total Pixels	<ul style="list-style-type: none"> • Approx. 36.77 megapixels
Dust Removal	<ul style="list-style-type: none"> • Image sensor cleaning using ultrasonic vibrations "DR II"
Sensitivity (Standard output)	<ul style="list-style-type: none"> • ISO AUTO/100 to 204800 (EV steps can be set to 1EV, 1/2EV or 1/3EV)
Image Stabilizer	<ul style="list-style-type: none"> • Sensor-shift shake reduction (SR II: Shake Reduction) (5-axis)
AA Filter Simulator	<ul style="list-style-type: none"> • Moiré reduction using SR unit. OFF/Type1/Type2/Bracket (3 images)

File Formats

File format	<ul style="list-style-type: none"> • RAW (PEF/DNG), JPEG (Exif 2.3), DCF2.0 compliant
Recorded Pixels	<p>[35mm Full Frame]</p> <ul style="list-style-type: none"> • JPEG: L(36M:7360x4912), M(22M:5760x3840), S(12M:4224x2816), XS(2M:1920x1280) • RAW: (36M:7360x4912) <p>[APS-C size]</p> <ul style="list-style-type: none"> • JPEG: L(15M:4800x3200), M(12M:4224x2816), S(8M:3456x2304), XS(2M:1920x1280) • RAW: (15M:4800x3200)

- The *K-1* has a GPS/Electronic Compass/Astro Tracer, a Pentax unique feature.

The GPS feature records shooting location, facing direction, date and time into the image data. Electronic Compass records the shooting direction, and Astro Tracer combines these features with the SR II

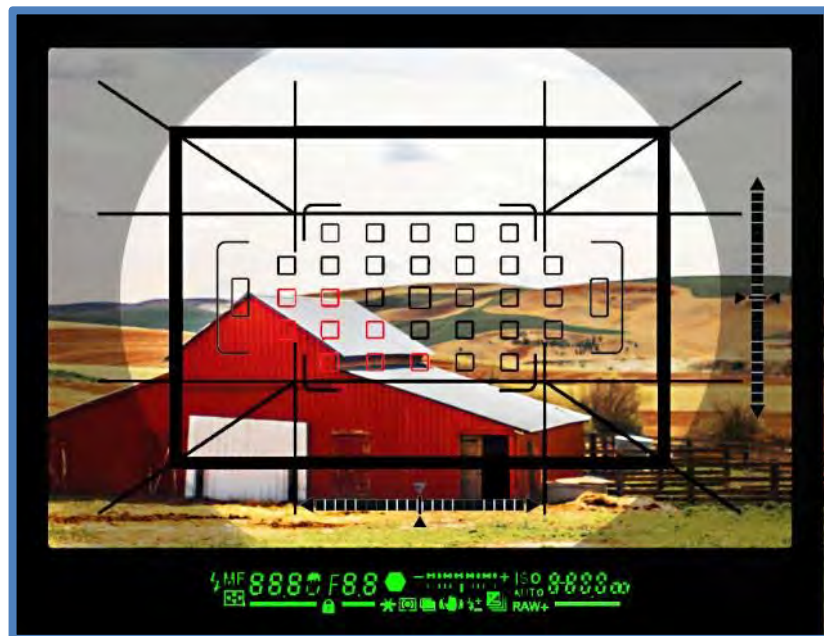
shake reduction to capture rock-steady images of celestial objects in the night sky without streaking or blurring during long exposures.



- You can use all APS-C lenses on the Full Frame *K-1*.

The *K-1* features an APS-C Crop Mode that allows it to accommodate all Pentax lenses developed for the APS-C sensor.

The image pixel count will change but for the APS-C. The image will be cropped to 15MP. For crops between APS-C and Full Frame, the pixel count will be resized accordingly. The sensor is big and a 15MP file is still going to give you pretty good image quality anyway.



Chapter 2



How to use your *K-1*

The images and sketches have not been compressed, and the clarity of the entire e-book is stunning. Your tablet or smartphone will look like everything is in 3-D.

Shooting Info Display Selection Screen

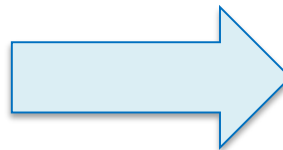
Pressing the INFO button again brings a screen similar to the image on the left. This example was when I was shooting in (P) mode. Use the four-way controller to navigate horizontally ◀▶. From left to right, the first box allows all of the shooting information to be displayed on the Status Screen. The second box allows the electronic level to be displayed and operational. The third box turns the information on the Status Screen off, and finally the fourth box shows the latitude, longitude, altitude and time.



Note To recap, while in the “standby mode” (camera ready to shoot), pressing the INFO button toggles between the **Control Panel**, the **Info Display** and the **Standby Mode**.



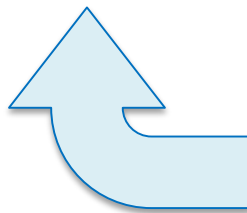
Standby Mode



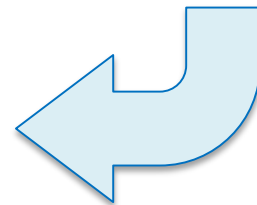
INFO

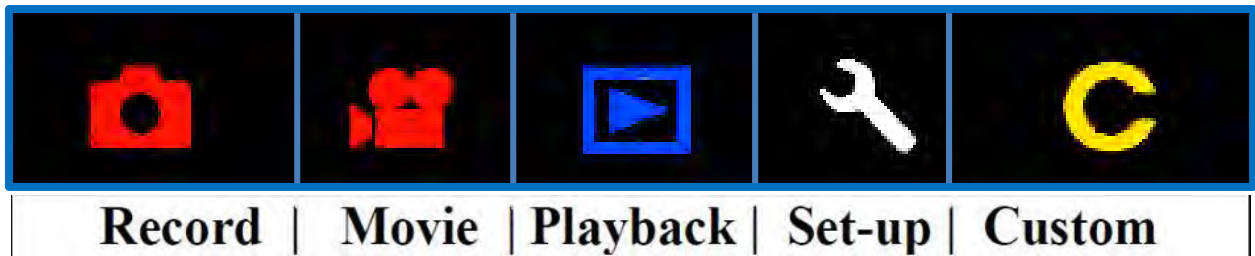


Control Panel

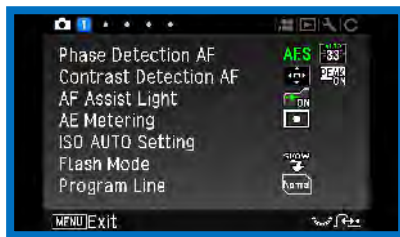


INFO Display

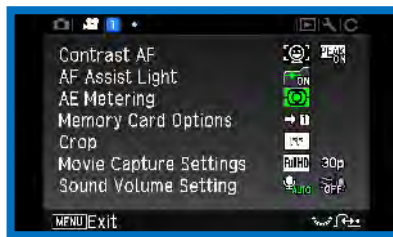




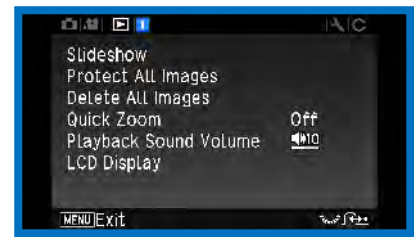
The Menus



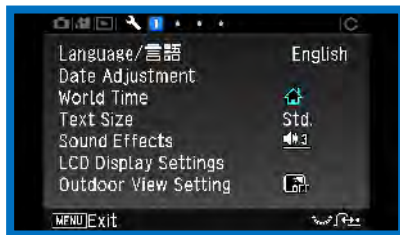
Rec. Mode Menus



Movie Menus

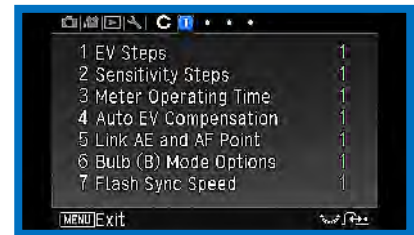


Playback Menu



Set-up Menu

- Top Left: **Rec. Mode Menus**
- Above: **Movie Menus**
- Top Right: **Playback Menu**
- Left: **Set-up Menus**
- Right: **Custom Setting Menus**



Custom Setting Menus

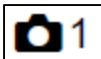
Let's spend some time reviewing and understanding how this camera operates. The camera can be customized to your own preferences or shooting style. The same function can be set in many places. It's up to you to set the camera operability to your preference. You can apply 26 custom settings to your camera via the **Custom Setting Menu**. In addition, there are other screen accessible menus. They are the **Rec. Mode Menu**, the **Movie menu**, the **Playback menu** and the **Set-up menu**. That is not counting the dozens of settings accessible directly through buttons, switches and dials, all located on the camera body and easy to reach. Some options are also available through the **Status Screen** and the **Control Panel** screen. As you get acquainted with all the menus and the camera mounted controls, you will become a better photographer.

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 details somewhere in this book. You can jump to the details by clicking on a section.


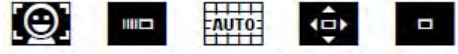

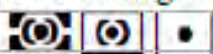


Menus Table







Note It is my opinion that the Pentax manual has an incomplete Menus list. It is a little ambiguous and the available range of settings are only accessible by linking to other pages. The following table has all the information needed in one place. It has links to real-time examples. It is a good way to learn the Menus.

Note



REC Mode Menus, page 1













Category	Section	Description Available Choices	Default
Phase Detection AF	AF Mode *	Selects AF method (Viewfinder shooting). (AF.S Single or AF.C Continuous)	AF. S
	AF Active Area *	Selects the area for focusing (Viewfinder shooting).  AUTO/33 AF Points Zone Select Select Expanded area AF(S) (M) (L) Spot	AUTO/33AF points
	AF.S Settings	Sets AF to a Focus priority or a Shutter release priority. (Focus or Shutter release priority)	Focus priority
	1 st frame action in AF.C	Sets action priority for the first frame. (AUTO, Focus or Shutter release priority)	AUTO
	Action in AF.C	Sets action priority for continuous shooting. (AUTO, Focus or FPS priority)	AUTO
	Hold AF Status	Maintains focus when a subject is moving (tracking) (Off, Low, Medium, High)	Low
Contrast AF	Contrast AF *	Selects AF method (Live View shooting).  (Face Detection Tracking AUTO Multiple AF Points Spot)	Face Detection
<div>  <div> <p>The e-book is interactive. It has links to almost everything within the e-book and outside Internet links.</p> </div> </div>			
	AF assist light *	Assist light for AUTO-focusing in dark areas. (Set to On or Off)	On
	AE Metering *	Measure brightness and determine proper exposure. 	Multi Segment
	ISO Setting *	Sets the ISO speed	200
	Flash Mode *	Selects the flash mode	On
	Program Line *	Select the Program Line 	Normal
			

Exposure Mode	Exposure Mode ★★	Temporarily changes exposure mode if U1-U5 is selected. (P) (Sv) (Tv) (Av) (Tav) (M) (B) (X)	P
	Program Line ★★	Select the Program Line when U1-U5 is selected.      	Normal

★ Available as a function in the Control Panel

★★ The Function appears only when the mode dial is set to **U1-U5**

2 Rec. Mode Menus, page 2

Category Section		Description Available Choices	Default
	Memory Card Options ★	Sets the recording method when two memory cards used.     Sequential Both RAW/JPEG	Sequential
	Crop ★	Sets angle of view for taking picture.   	AUTO
Image Capture Settings	File Format ★	Sets the file format for images. JPEG RAW RAW+	JPEG
	JPEG Recording Pixels ★	Sets the recording JPEG size.    	
	JPEG Quality ★	Sets the JPEG quality. ★★★★ ★★ ★ Best Better Good	★★★★
	RAW File Format	Sets the RAW file format PEF (Pentax format) DNG (Adobe format)	PEF
	Color Space	Sets the color space sRGB AdobeRGB with a wider range of colors	sRGB
D-Range Setting	Highlight Correction ★	Prevents overexposure. On or Off	AUTO
	Shadow Correction ★	Prevents underexposure On or Off	AUTO
Noise Reduction	Slow Shutter Speed NR ★	Reduces noise when shooting at a slow shutter speed. On or Off	AUTO
	High-ISO NR ★	Reduces noise when shooting at high ISO sensitivity. On or Off	AUTO

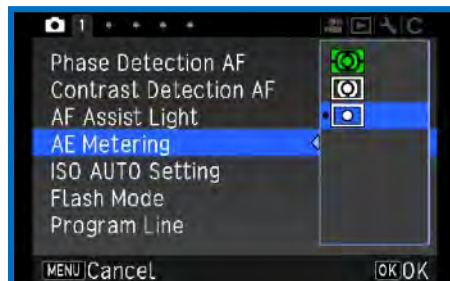
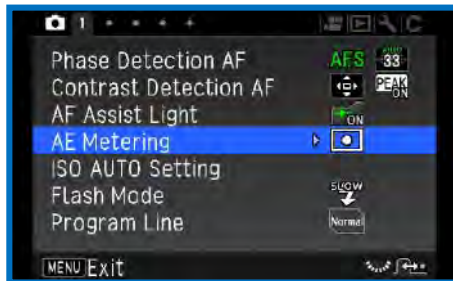
On camera mechanical devices for functions and settings.

Well, the *K-1*, as mentioned above, has many buttons, dials, wheels and switches. Here is the list and their functions.

Image	Device	What is does
	Main Switch	<p>This switch turns the camera to On or Off.</p> <p> The Preview iris is for checking the Depth of Field. It can be set to Optical or Digital Preview.</p>
	Mode Dial	<p>The Mode Dial lets you change the shooting mode. The modes are imprinted on top of the dial. The mode dial release lever locks the dial from turning accidentally. The mode dial lock in the center is pushed down to turn the mode dial.</p>
	GPS Button	<p>The GPS button activates the in-camera GPS or Global Positioning System. It allows identification of locations anywhere on earth. It activates Astrotracer in order to track and capture celestial bodies. It adjusts the camera date and time using GPS satellites. A light is illuminated right beside the GPS button when the GPS is activated. The GPS light can be set to Off, Low or High in the Set-up Menus, page 2.</p> <p> </p>
	Function Dial	<p>The Function Dial works together with the Setting Dial. Turn the Function Dial to access a function imprinted on the top of the dial. They are ● Disable +/- Exposure compensation ISO CH/CL Continuous or single shooting Bracketing HDR Grid Shake Reduction Crop Wi-Fi </p>
	Setting Dial	<p>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.</p>
	Capture Mode Switch	<p>Toggles between capturing still pictures and making movies. The switch is squeezed in between the camera's top surface and the Function Dial.</p>

Metering System

The *K-1* features the Real Time Scene Analysis System featuring an 86,000 pixel RGB light-metering sensor for accurate exposure. It can analyze the portion of the image, based on Spot, Center-Weighted or Multi-Segment metering. Selecting the metering method is available through the REC. Mode Menus, page 1. The multi-segment method is used when the scene is about equally lighted and your subject is all over the viewfinder, such as landscape photographs. No special emphasis is given to any part of the picture, except if the AE is linked to the AF (see next page). The center-




weighted is used when your subject dominates the center portion of the screen, such as a portrait. The spot metering is most often used

when the center of the scene is not equally lighted as the rest of the scene. Use spot metering when a subject is located in front of a bright light (for example, a person standing in front of a bright sunlit window). Spot metering on the subject will make it properly exposed. Often, fill-in flash is also used in this situation.




Sample Image



 Multi-Segments Metering

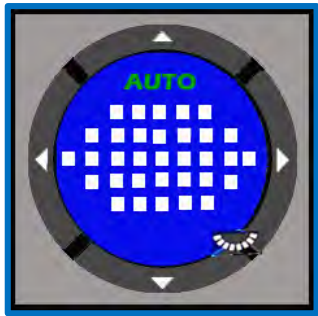


 Center-Weighted Metering

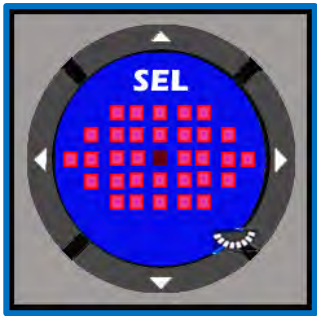


 Spot Metering

How to Select AF point(s)







Auto AF points are accessible in AF.S. and AF.C.



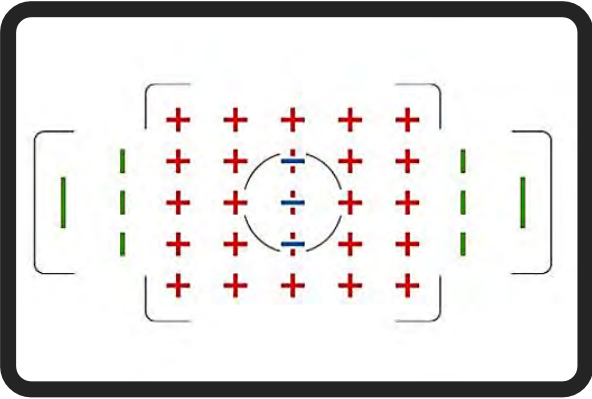
SEL points are accessible in AF.C only.

After selecting an AF active area as shown in the previous page, you can change the matrix size in Auto and SEL within the 33-point matrix. Press the AF Mode button and rotate the rear e-dial to select the number of points. Use the ◀ ▶ ▲ ▼ to move the selected points within the matrix.

	Press the AF Mode and while keeping it pressed, change the number of points with the rear e-dial. <i>The SEL are only available in AF.C.</i>
	Switches the function of the four-way controller's arrow keys to the AF Point change mode. It's the direct key operation mode.
	Changes the location of the AF Point within the matrix. <i>(Not available for Auto 33 and Spot)</i>
	Returns the AF Point to the center.






Note Note that the AF point is fixed to the center when lenses other than the DA, DA*, D FA, FA J, FA, F, or A are used.

I thought that the AF Active area needed a little more explanation. The first sketch below shows the AF sensor matrix. The red crosses are the AF cross-point sensors, meaning that they focus on vertical or horizontal points. The three cross points that have the blue horizontal line, are designed to detect luminance flux of an f 2.8 lens for high-precision autofocus. When used with a shallow depth of field, the autofocus is significantly improved. The green AF points are vertical linear sensors and detect the sharpest horizontal points only.

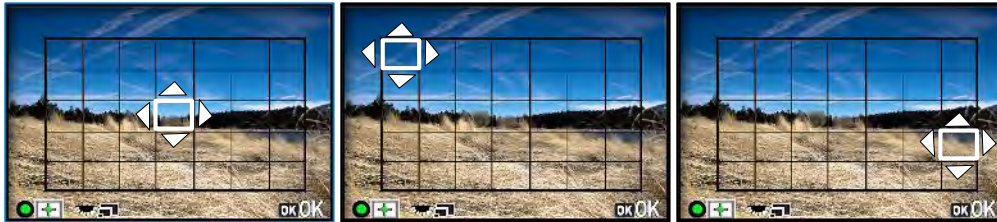


Multiple AF Points

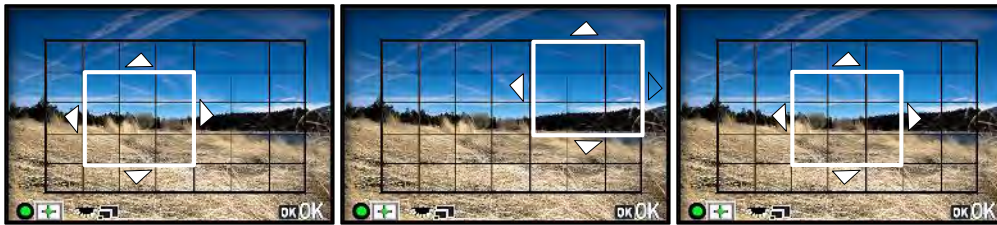


You choose an AF area and the camera automatically focuses within that area. The areas do not have to be centered and they can be moved to anywhere within the camera's full matrix. Press the Change AF point button. The four-way controller is used      to select the AF point. The read e-dial is used to select its size. The Green button is used to bring the AF point back to the center.

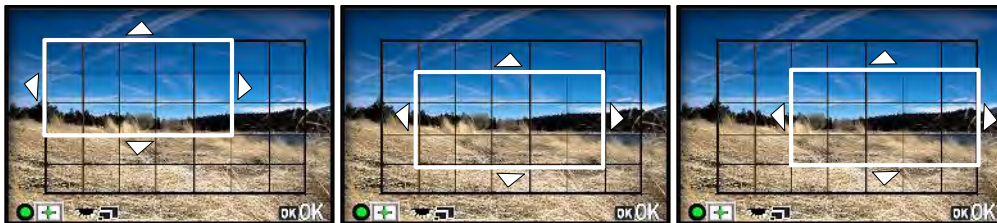
1 AF Point



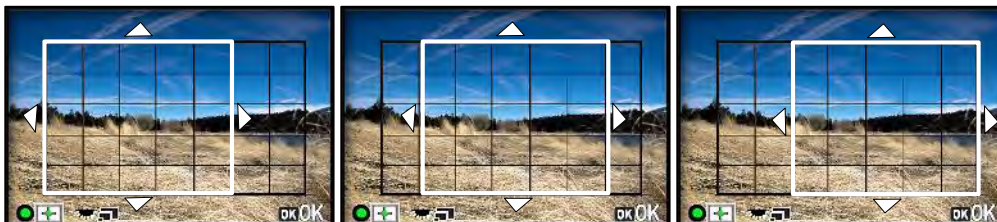
9 AF Point



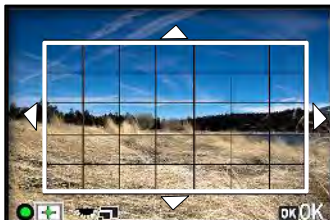
15 AF Points



25 AF Points



35 AF Points



Chapter 3






Processing your
K-1 images


In-Camera Image Processing

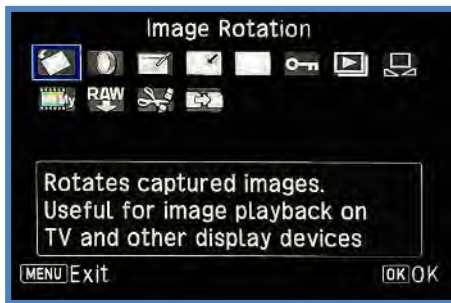
RAW and **JPEG** images can be processed and manipulated in-camera. This allows you to develop your images without the use of a computer.

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.



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

- * - Indicates that the effect is available for RAW files only.
- ** - Indicates that the effect is available for JPEG files only.

In-camera manipulated image examples:



Original Image



Water Color



Retro



Original Image



Bold Monochrome



Stacked Bold Monochrome and Water Color

Chapter 4



The Pentax System



PENTAX smc DA* 55mm f/1.4 SDM

- The Image circle is compatible with Full Frame sensor
- Standard
- Portrait, still life, low light photography, weddings



PENTAX smc DA* 200mm f/2.8 ED [IF] SDM

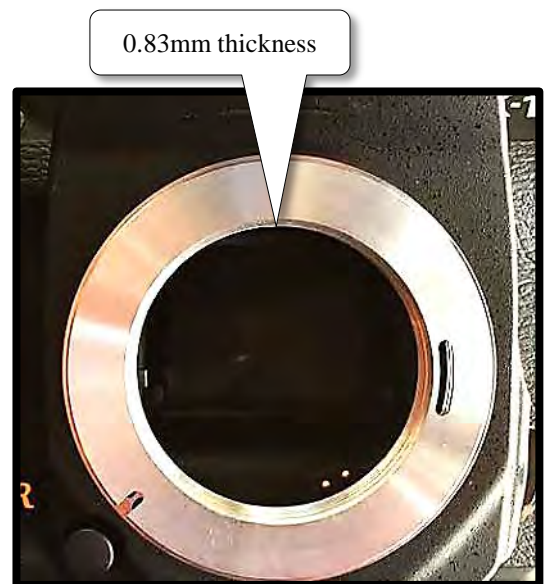
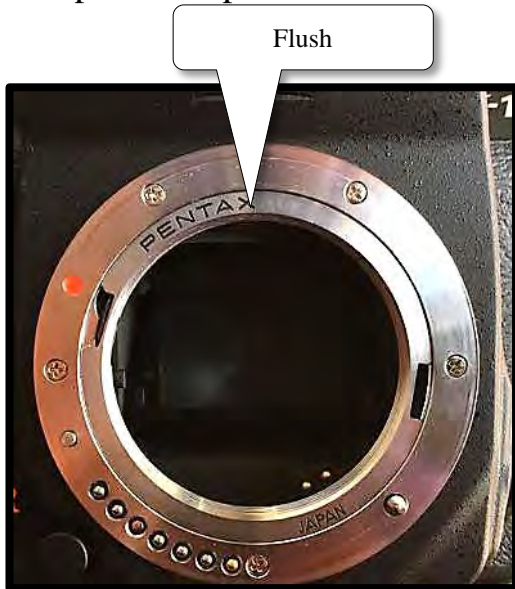
- The Image circle is compatible with Full Frame sensor
- Telephoto
- Wildlife, sports and long range shots

Other adapters are available on EBay as well. They do not mount flush with the camera and therefore, infinity focusing cannot be achieved. Since there is a small extension forward of the lens position, caused by the wider flange, it acts to some extent like an extension tube. It allows closer minimum focusing, but will not focus to infinity. This is not usually a great concern except when shooting landscape with far away scenes that must also be in focus with the closer subjects.



The installed adapter (left) has a flange that sits over the lens mount, acting like a very small extension tube because of the thickness of the flange (0.83mm). Infinity focus cannot be achieved. The Pentax genuine adapter fits flush with the lens mount, achieving infinity focus. The difference is small and it may not be of importance to you. In either case, the connectors

on the face of the camera mount are useless for manual screw mount (M42) lenses. The price comparison is around \$15.00 U.S. versus \$40.00 U.S.



As for the use of these M42 lenses, once you have an adapter, the procedures are similar as with the K-mount manual “M” lenses. These lenses will stop down as installed.

Chapter 5

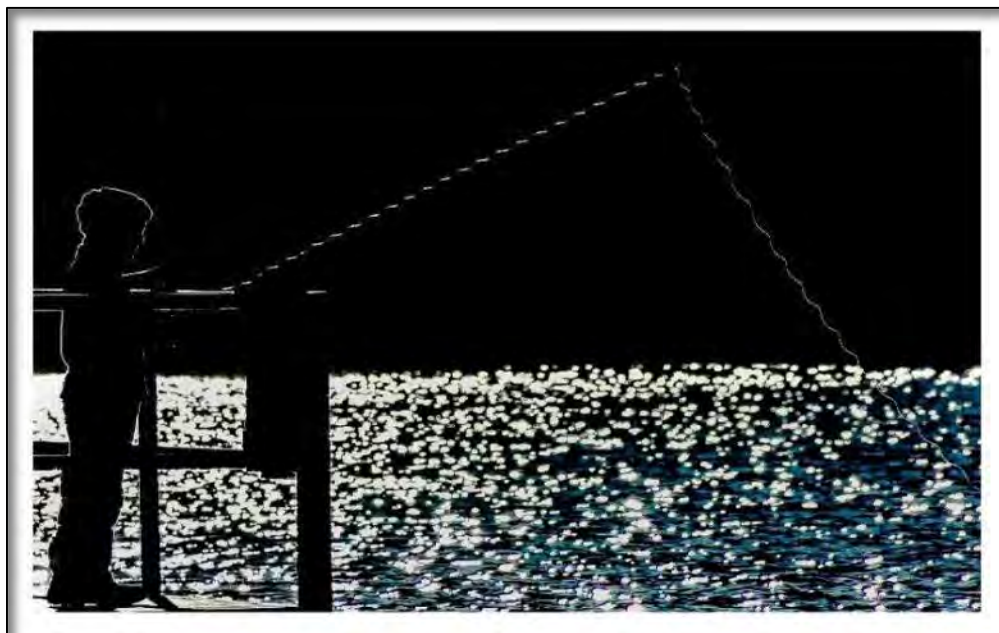


Photography Techniques

Star Stream

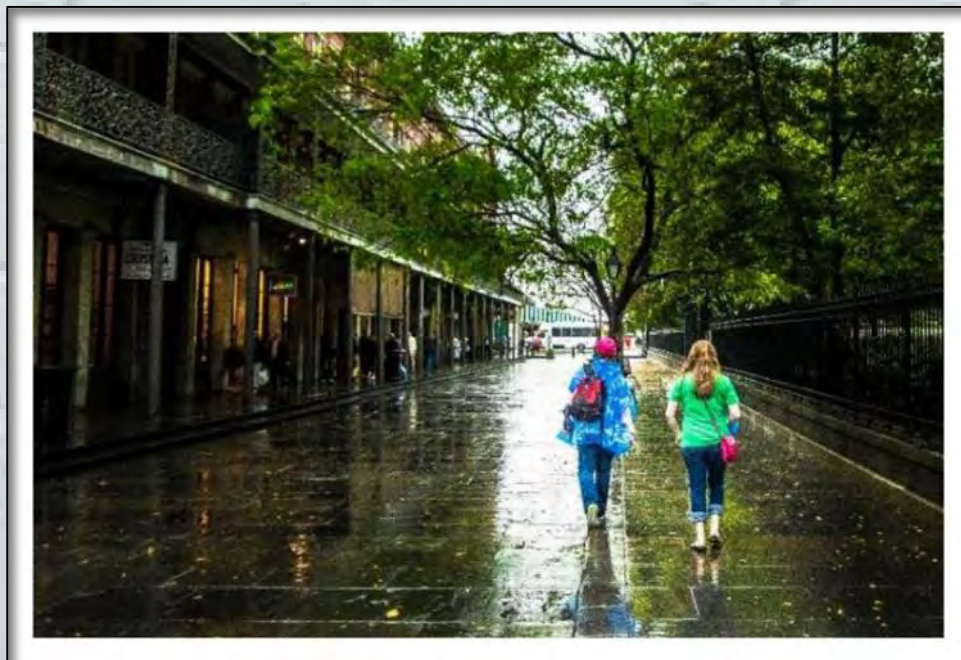


Silhouette and back lighting



Bad weather

Don't leave the camera inside because of bad weather. Bad weather can render beautiful pictures. Snowy and rainy days gives you unlimited opportunities.



Chapter 6



Movie Recording

D-Range Settings:

These two settings can be set to Auto or Off in Movie Mode. They are pertaining to the Dynamic Range and can alleviate the over or under exposed area of your movie.

Digital Filter:

Digital filters can be applied in movies.

The filters are:

Extract Color	Replace Color
Toy Camera	Retro
High Contrast	Shading
Invert Color	Unicolor Bold
Bold Monochrome	No Filter

 *The filters are the same filters that can be applied to Still Images.*

 *The filters are to be chosen before shooting your movie.*



Addendum



Addendum

If you would like to know what direction your camera is pointing toward, you can press the Info button twice, while in the Standby screen, and select Electronic Compass. Of course, this is assuming you are shooting through the viewfinder.



In the images above left shows the Info Display. Choosing the Electronic Compass will allow you to see the screen to the right while shooting through the viewfinder. You can see the coordinates, the date and the time. More importantly, you can see that the camera was pointing 28° North/North-East. This will be incorporated in the EXIF data. Think of adding an image on Google Map for example.



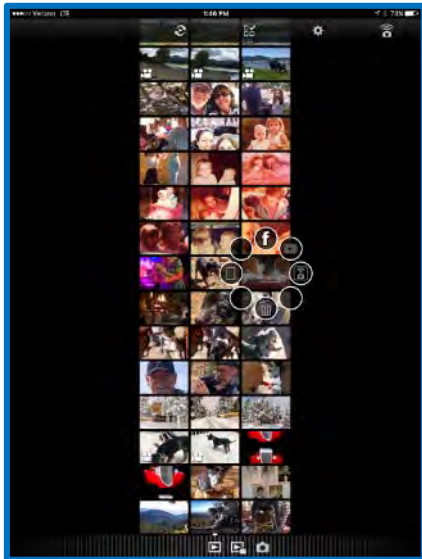
I took this simple picture of flowers with the GPS activated. Take a look at the EXIF data. It shows everything from settings to coordinates. It's pretty impressive.

Addendum

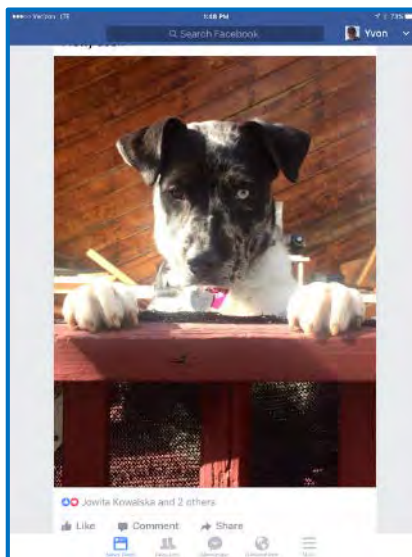
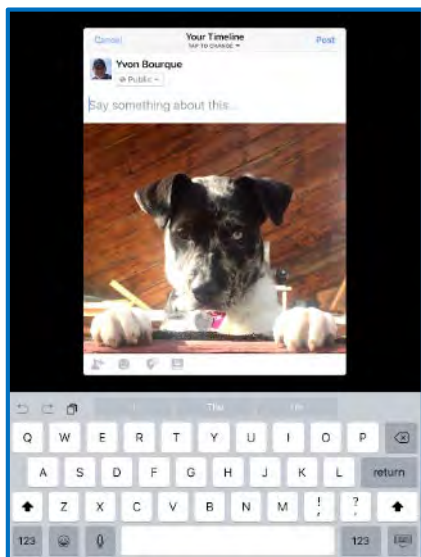
Facebook

Everybody is on Facebook, it seems. Let's start with uploading images and sharing them on Facebook.

All the images currently on your memory card are available. You can take a picture and it will be added. While in the Application, you can post to Facebook.



Chose the image you want to send by tapping on it and holding for a few seconds. The daisy wheel pops up. Press and hold the Facebook icon for a few seconds. When released, you will be transferred to Facebook.



Once in Facebook, do what you normally do.

Write something if you want and post. A few seconds later, your image taken with the *K-1* is on Facebook.

Appendix

