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PENTAX
6×7
SYSTEM

6×7



THE SUPER SLR!

A stampeding stallion . . . An athlete making a flying tackle
. . . A hummingbird darting from blossom to blossom . . .
A glamorous model posing atop a sand dune . . .

Regardless of the subject, photography with the Asahi Pentax 6x7 combines unmatched image quality with maximum handling ease. That's why we call it the "Super SLR." For it is a perfect balance of two picture-taking personalities. It's the large format camera guaranteeing the high-quality results and non-waste enlargements inherent in its 6x7 "ideal" negative format; and from its very inception it was designed to incorporate all of the outstanding features of a 35mm SLR—including well-positioned controls, precise eye-level operation, superb balance, smooth and steady shutter release, an electronic focal plane shutter, well-dampened mirror action and a host of other outstanding features. And, enhancing its versatility even more is a wide array of interchangeable lenses from ultra-wide to ultra-telephoto, fish-eye to macro, and also a full range of close-up accessories. Optional viewfinders permit the camera to be used at waist and ground levels, on vertical copy stands or on low-height tripods. A highly accurate TTL metering pentaprism finder is also available which provides full-aperture readings with automatic diaphragm lenses. In addition, there's an assortment of focusing screens with varied alignment patterns for a wide variety of studio, architectural and other applications.

But, these are not the only reasons we call the Pentax 6x7 the "Super SLR." It would be hard to overlook its rugged body and durable construction. Photographers really appreciate its capacity to take the day-in, day-out battering of studio work and yet render unwavering performance on location in a scorching desert one moment, or on a freezing mountain top the next.

There's yet one more superlative which can be applied to the "Super SLR"—the quality of its 6x7 lenses, acclaimed the world over for their brilliance and clarity. Like the camera, these also have been designed along 35mm SLR lines, featuring a bayonet mount for quick changes, and automatic diaphragm action on all models up to 500mm telephoto. Moreover, as the only large format lenses treated with Super-Multi-Coating, the 6x7 lenses retain their crisp sharpness and dramatic contrast even in the harshest lighting conditions.

That about sums up the Pentax 6x7, except for one thing—the 6x7 Marine, a highly sophisticated underwater housing which lets you take the Pentax 6x7 even to the bottom of the ocean . . .

It all adds up to "The Super SLR." The Super Camera . . . The Super Lenses . . . The Super System!



NOT A FORMAT DESIGNED TO MATCH THE CAMERA, BUT A CAMERA DESIGNED TO MATCH THE FORMAT

With the advent of roll film, box-shaped cameras were designed to accommodate it. But, whether inexpensive plastic box cameras or deluxe twin lens and single lens reflexes, they were too awkward to be held both horizontally and vertically; consequently, the film format was designed as a square. This way, no matter how the camera was held, the result was the same. Later, when attempts were made to extend the format size of roll film to 6x7, the box was enlarged, but not redesigned to permit holding the camera sideways; it was decided to rotate the film instead.

Both of the above examples may be considered as designing the format to match the camera. Or reworded, placing the cart before the horse.

But, the solutions created more problems than they solved. Although the original square format design eliminated the need to hold the camera sideways, it created a large waste, as negatives required cropping to create a rectangular picture. The rotating back design eliminated the problem of negative waste, but added significant bulk and weight, thereby restricting the use of the camera.



THE PENTAX ANSWER

When the engineers at Asahi Optical Company set out to design the Pentax 6x7, they started from the right premise: they chose the 6x7 format because it is only slightly larger than the 6x6 square format, but offers a full 50% more usable area. And it enlarges to all standard paper sizes without cropping. That's why it is referred to as the ideal format—"It eliminates the problem of negative waste."

Furthermore, as the 6x7 negative is merely 21% larger than the square format, the engineers were able to make it almost as small as cameras using the smaller negative, but designed it exactly like a 35mm SLR. Thus, it offered superb balance and far excelled the box-shaped cameras in handling ease. And while the box cameras were designed principally for waist-level viewing or use with a tripod and later adapted for eye-level use, the Pentax 6x7 was designed for both hand-holding and eye-level viewing from the very beginning. Its easy handling and rapid response to action facilitates concentration on the image, eliminating the cumbersome operation associated with box-shaped cameras. It's also sealed off from dirt and can be used anywhere—on the ground, vertically on a copy stand, on low-height tripods, in the air . . . The Pentax engineers had the answer. From the very beginning they designed the "ideal camera to match the ideal format."

GIVES YOU 50% MORE USABLE NEGATIVE AREA THAN "SQUARE" FORMATS

The Asahi Pentax 6x7 gives a 55mm x 70mm negative — an effective area of 3,850 sq. mm. With the 6x7, you need enlarge the negative only 3.2 times for an 8x10 print. The typical 6x6 has a 56mm x 56mm size negative — with an *effective* area of only 2,508 sq. mm. This means the negative must be enlarged by 4 times to make an 8 x 10 print. There's less grain, sharper pictures, better color with the Asahi Pentax 6x7, the only ideal-format SLR with 35mm eye-level handling ease. A direct comparison of negative sizes can be deceptive, as illustrated on the right. A 6x7 negative has only 21% more area than a 6x6 negative. However, there is fully 50% (two square inches) more *usable* negative with the 6x7 format over the old 6x6 "square."

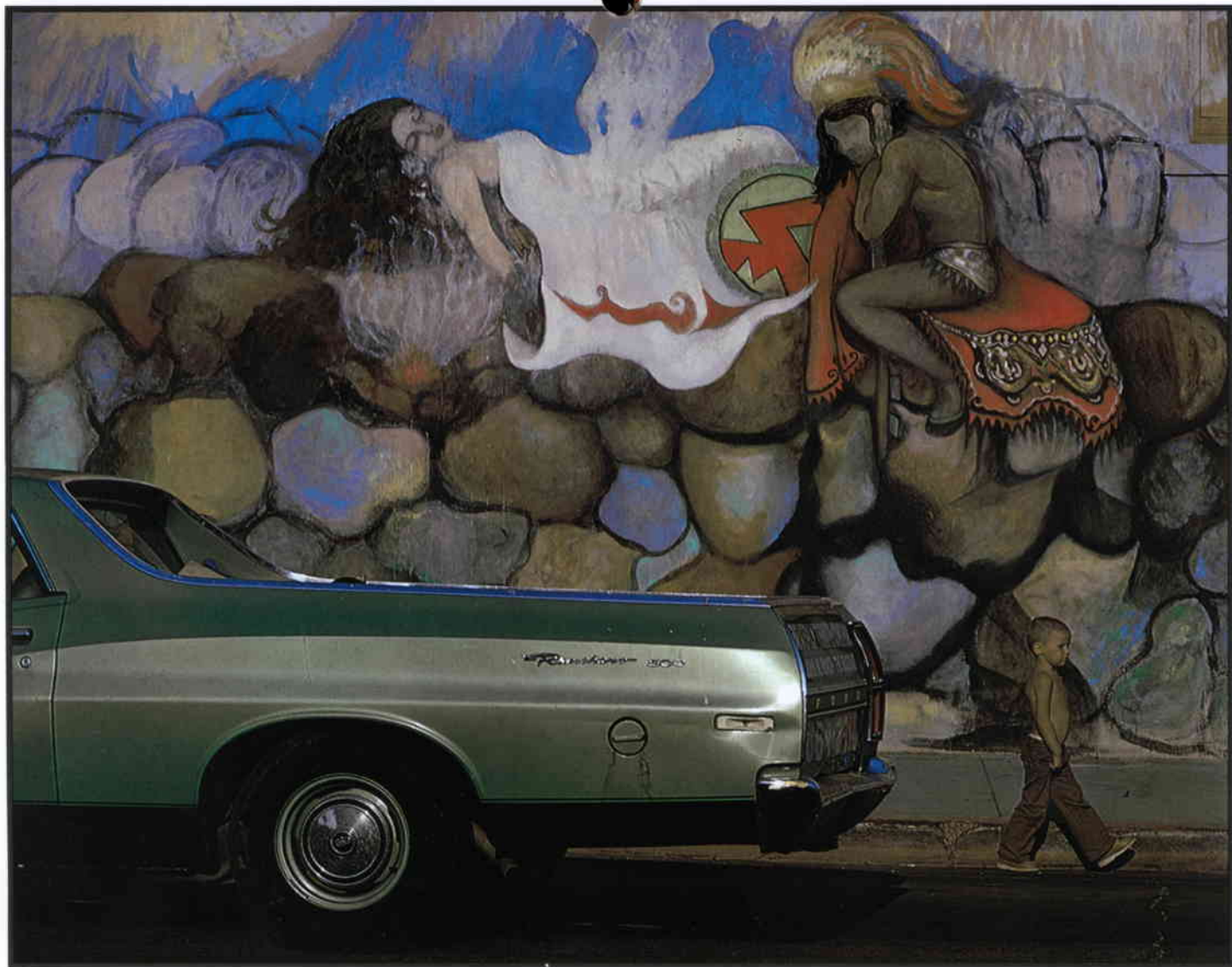
Actual 6 x 7 size—
fully usable image

Actual 6 x 6 size—
 $\frac{1}{2}$ as much usable image

8 x 10 Format



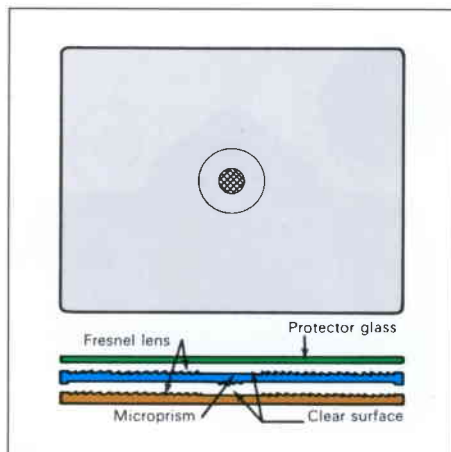
- With the 6x7 and its fully usable image format, you can compose either vertical or horizontal shots using the full edge-to-edge image area without having to "crop" in the viewfinder.



35mm SLR HANDLING

Oustanding Viewfinder

The viewfinder system of the Pentax 6x7 is more than you would expect from a high quality 35mm SLR. The image appears on a large, bright focusing screen which features a centrally located micropism spot for critical focusing. Because the finder produces a life-size image with the standard lens, the camera can be operated with both eyes opened for comfortable and easy viewing. And, in spite of the compact size of the interchangeable pentaprism, 90% of the taking image is visible on the focusing screen to assure accurate framing. Moreover, visibility can be increased to 100% merely by replacing the standard Pentaprism Finder with the Folding Focusing Hood, which offers waist-level viewing. The standard focusing screen can also be replaced with any of four other screens which are available at all Pentax service centers.



Quick-Change Lenses

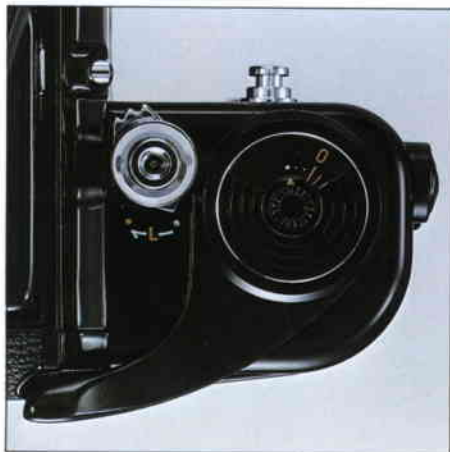
All SMC Takumar 6x7 lenses are designed to handle and function exactly like the very best 35mm SLR interchangeable lenses. Each Takumar lens instantly bayonets into place with a mere 57° twist, and each lens from fish-eye to 300mm telephoto is equipped with an automatic diaphragm. They are all easily focused with and cradled in the left hand. A single flick of the right forefinger on the Depth-of-Field Preview Lever of the lens closes the diaphragm to the taking aperture for direct viewing of the depth of field. And one more flick returns the lens to its maximum aperture for bright viewing. Additionally, depth-of-field, distance and aperture scales are clearly engraved for legibility; the focusing and aperture rings are strongly knurled to simplify manipulation.



35mm SLR HANDLING

Rapid-Wind Lever & Shutter Release Button

The film advance cranks on most large format cameras require either full 360° rotation or multiple strokes in order to advance the film one frame. However, the Pentax 6x7 enables you to advance the film and cock the shutter with a short 180° stroke of the Rapid-Wind Lever. This makes it possible to keep pace with the quickest action. Each time the film is advanced, the Exposure Counter also advances, indicating a maximum of 10 exposures for 120 film, or 20 exposures for 220 film. The Shutter Release Button is perfectly positioned for smooth operation and is equipped with a lock lever which prevents accidental release of the shutter. The lock lever also permits "time" exposures when used in conjunction with the "B" setting of the Shutter-Speed Dial.



Accurate Electronic Shutter

Unlike 35mm SLR's, most large format cameras have neither an electronic shutter nor a fast shutter speed of 1/1000 of a second. However, the Pentax 6x7 can hardly be considered an ordinary large format camera. Not only is it equipped with a precision electronic shutter, but each of its shutter speeds from 1/1000 to 1 second is electronically timed for matchless accuracy.

Precision performance is not the only concern of Pentax engineers—equal weight has also been given to human engineering. That's why the shutter speed dial is located within easy reach of the fingers of the left hand, and can be easily manipulated even when holding the camera at eye-level; it also rotates a full 360° for maximum operating convenience.



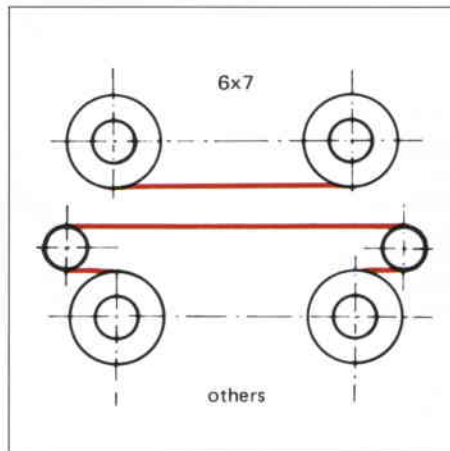
Large, Swing-Back Mirror

The large, reflex mirror of the 6x7 swings back and up, returning instantly after the exposure for uninterrupted viewing. There's no blackout and minimal vibration. Hidden in the walls of the mirror chamber is a damping device which effectively reduces mirror shock. And, thanks to the large dimensions of the mirror, a 100% of the taking image can be viewed when the Fine Focusing Hood is used for waist-level viewing. Moreover, for critical work, such as macro-photography and ultra-telephotography, the mirror can be locked in the up position to eliminate shock entirely.



Dependable Power Source

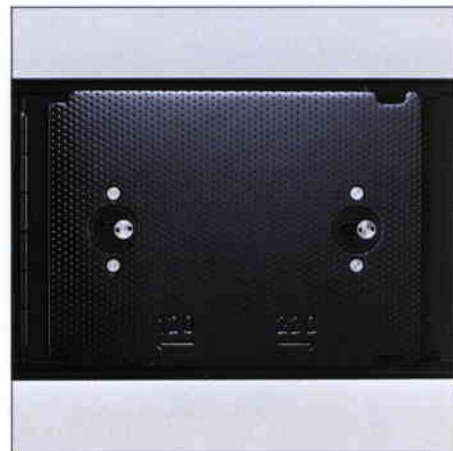
A single 6V silver oxide battery is all that is needed to power both the electronic shutter and the accessory full-aperture metering TTL Pentaprism Finder. Because silver oxide batteries offer higher voltage and greater stability at low temperatures than mercury batteries, they are an extremely dependable power source. You need not stop working at freezing temperatures either, as the accessory Remote Battery Cord makes it possible to operate the camera in frigid zones as well. At temperatures below zero degrees Centigrade (32° F), the battery can be kept warm in your pocket by removing it from the camera and placing it in the battery chamber at the end of the Remote Battery Cord. The opposite end of the cord has an electrical plug which inserts into the camera to power the shutter and TTL Pentaprism Finder.



Flatness of the Film Plane Assured

In addition to the camera lens, sharpness of the image on the negative depends heavily both upon the film transport method and adjustment of the film pressure plate. The unique film take-up system of the Pentax 6x7 features direct winding onto the take-up spool in accordance with the film's natural curve. And a slight horizontal movement of the film pressure plate instantly adjusts the plates's height to coincide with the type of film in use (120 or 220). Precisely the right amount of pressure is applied to hold the film gently but firmly against the guide rails for edge-to-edge sharpness. After adjustment is made, the numbers "120" or "220" appear in a window on the back cover for last minute checking.

These two factors (direct film wind and pressure plate adjustment) assure flatness of the film plane for optimum sharpness.



INTERCHANGEABLE FINDERS



Rigid Magnifying Hood

This deluxe waist-level type finder completely shields the focusing screen from ambient light for crisp, clear viewing. The 1.3X magnifier can be adjusted to the viewer's eyesight for maximum viewing comfort. The entire focusing screen is visible for a 100% view of the negative area.

Folding Focusing Hood

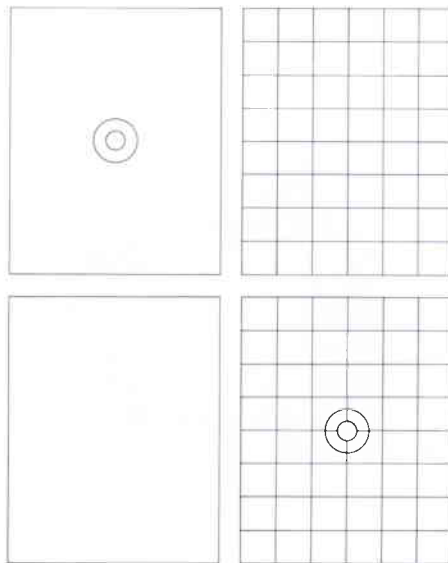
The ultra bright waist-level viewing offered by this compact folding finder is ideal for macrophotography and ultra-telephotography. It has a built-in 1.6X magnifier for critical focusing. The magnifier folds out of the way for full-screen focusing and composition. The Folding Focusing Hood simplifies low-angle shooting and shows 100% of the negative area on the screen.

Pentaprism Finder

This is the standard eye-level, pentaprism finder unit. Extremely compact, it provides large, bright viewing in spite of its size. It weighs only 460 grams and detaches instantly from the camera body for interchanging with the three other finder units. 90% of the taking image on the focusing screen can be seen through the finder eyepiece.

FOCUSING SCREENS

The 6x7 focusing screens are varied in design for a wide range of specialized applications requiring accurate alignment of image patterns such as in architectural photography, advertising and copy work. In addition to the standard focusing screen, others are available and can be installed at your nearest Pentax service center. Each of the focusing screens is equipped with a unique double Fresnel lens for exceptionally bright viewing and even illumination across the entire field. The standard screen features a mat field with central microprism spot, while the others are: mat with central split-image spot, all-mat, mat with crosslines, mat with crosslines and central microprism spot.



TTL PENTAPRISM FINDER



The Through-The-Lens Pentaprism Finder attaches to the camera in the same manner as the other viewing units and automatically couples to the shutter-speed dial and aperture for "zero-method" exposure control. The through-the-lens meter reads an average of the total light entering the camera no matter what lens is used. All readings are made with the lens wide open, as the meter is mechanically cross-coupled to the camera. No battery is necessary in the meter unit itself because it draws power from the battery already inserted in the camera body.

Behind this precision, through-the-lens meter are years of experience. It has been perfected in other Asahi Pentax cameras, and incorporates the upmost in technological sophistication.

Through-the-lens meter—CdS average metering either at full aperture or stopped-down aperture. Meter needle visible through the viewfinder window. Couples to both shutter-speed dial and diaphragm.

Measurement range—EV 2.5 - 19 (with ASA 100 film and f/2.4 - f/22 lens.)

Film speed and scale—ASA 12 - 3200.

Working range—Shutter speeds from 1 to 1/1000 sec. with ASA 100 film. Diaphragm settings from f/2 to f/22.

Power source and consumption—6V alkaline or silver oxide battery (Eveready #544) which also powers the shutter mechanism; 4mA.

Dimensions—Width 123mm (4.84") x Height 58mm (2.28") x Depth 89mm (3.5")

Weight—520 g (1 lb. 2 ozs.)

NOMENCLATURE AND SPECIFICATIONS



- 1 Rapid-wind lever
- 2 Exposure counter
- 3 Shutter button
- 4 Shutter lock lever
- 5 Push-button side locks
- 6 Depth-of-field scale
- 7 Distance scale
- 8 Aperture scale
- 9 Exposure counter control dial
- 10 Safety device release button
- 11 Depth-of-field preview lever
- 12 Mirror lock-up lever
- 13 Battery check lamp
(Shutter speed index)
- 14 Neck strap lug
- 15 Film spool retainer knobs
- 16 Pentaprism
- 17 Tripod socket
- 18 Battery housing cover
- 19 Shutter-speed dial
- 20 Bayonet lock
- 21 Battery check button
- 22 Eyepiece
- 23 120/220 film indicator
- 24 FP flash terminal
- 25 X flash terminal
- 26 Accessory alignment button
- 27 Back cover locking lever

Type	6 x 7 ideal-format single-lens reflex						
Film	120 roll-film (10 exposures) 220 roll-film (20 exposures)						
Picture Size	55mm x 70mm (2-1/4" x 2-3/4")						
Standard Lenses	SMC Takumar/6 x 7 105mm f/2.4 and SMC Pentax/6 x 7 90mm f/2.8 lenses.						
Minimum Focusing Distance	1 meter (3.3 ft.)						
Shutter	Electronically-timed, double-curtain focal plane shutter; X, B, 1-1/1000 sec.						
Power Source	6V alkaline or silver oxide battery (Eveready #544 or Mallory PX28)						
Battery Check	Push button with indicator lamp						
Viewfinder	Detachable pentaprism finder, microprism focusing screen; produces life-size image with standard lens						
Reflex Mirror	Swing-up-and-back instant return mirror with lock-up provision						
Film Transport	Rapid-wind lever (180° angle); self-cocking shutter						
Exposure Counter	Automatic reset exposure counter						
Lens Mount	Dual bayonet mounts: inner bayonet for 35mm - 300mm lenses; outer bayonet for 400mm - 1000mm lenses						
Flash Synchronization	FP and X terminals/electronic flash at 1/30 - 1 sec., B						
Exposure Meter	Accessory pentaprism with through-the-lens meter (TTL Pentaprism Finder) couples with shutter speed and aperture						
Dimensions	184mm (width) x 149mm (height) x 156mm (depth) (7.2" x 5.8" x 6.1")						
Weight	<table> <tr> <td>Body</td><td>1,290 grams (45.5 ozs.)</td></tr> <tr> <td>Standard lens</td><td>630 grams (22.2 ozs.)</td></tr> <tr> <td>Pentaprism housing</td><td>460 grams (16.2 ozs.)</td></tr> </table>	Body	1,290 grams (45.5 ozs.)	Standard lens	630 grams (22.2 ozs.)	Pentaprism housing	460 grams (16.2 ozs.)
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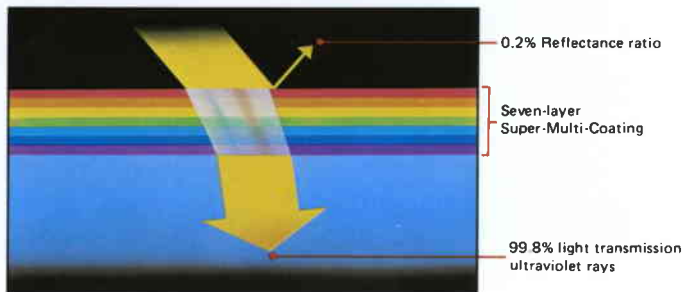
17 ADDITIONAL REASONS FOR SELECTING THE PENTAX 6x7

Any photographer knows that a precision SLR camera is only as good as its lenses. The 17 superb SMC Takumar and SMC Pentax 6x7 lenses thus give you 17 more substantial reasons for selecting the Pentax 6x7 camera.

While the majority of camera companies are camera manufacturers first and lens makers second, Asahi Optical began as a lens maker, and today is the world's only leading lens maker manufacturing a large format camera. This fact, combined with the company's advanced lens-making technology, assures owners of the Pentax 6x7 the following additional benefits.



- All fifteen 6x7 lenses are designed exclusively for the Pentax 6x7 camera and feature a precision bayonet mount which matches the camera perfectly. Each lens is as rugged and exact as the camera, providing years of reliable use.
- Asahi Optical's obsession with quality has made PENTAX a household word. All lenses bearing the names SMC Takumar and SMC Pentax are computer-generation optics designed in the Company's own engineering department, manufactured in its own factories, and tested in its own laboratories. Meticulous quality control over each step of the manufacturing process assures maximum optical performance with every lens in the line.
- And, because each 6x7 lens is made by Asahi Optical Company—and not subcontracted to others—you do not have to pay inflated prices. Each dollar you spend on a 6x7 interchangeable lens pays for quality, nothing more.
- Each 6x7 lens also features Super-Multi-Coating, Pentax's own unique 7-layer coating process which greatly reduces flare and squelches ghost images to deliver unexcelled image quality. SMC treated lenses transmit a remarkable 99.8% of the incident light to produce extra-bright images, offer higher resolution, better contrast, and also superb color balance and saturation.





● SMC FISH-EYE TAKUMAR 35mm f/4.5

35mm



● 6x7 WIDE-ANGLE LENSES

45mm



55mm



75mm

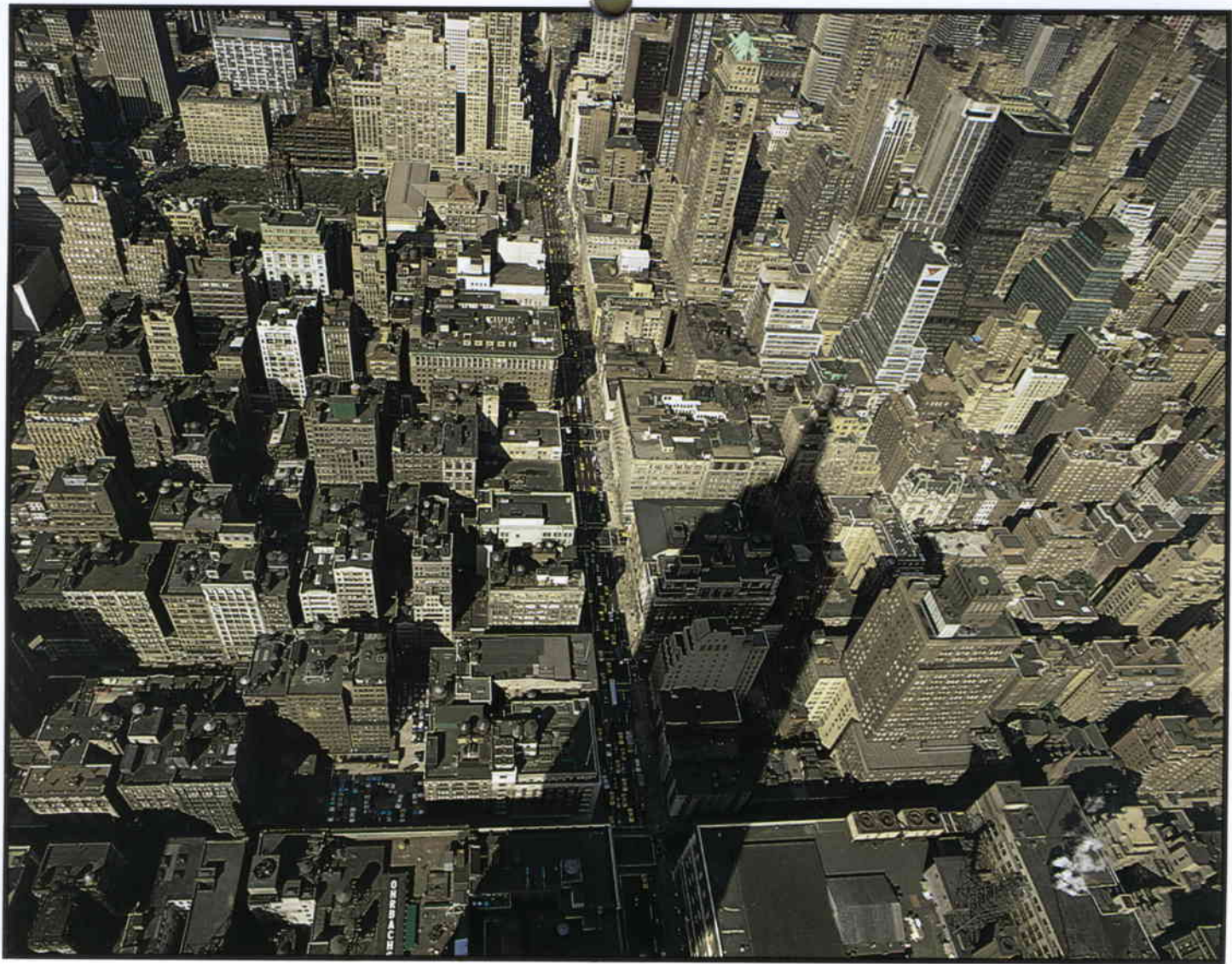


Just like the painter uses a wide array of brushes as tools to create his masterful effects, the photographer relies on a wide assortment of lenses as the tools for expressing his creativity.

One of the most exciting of the tools available to the photographer is the fish-eye lens. Pentax has the longest history of any lens maker in the manufacture of full-frame ("semi") fish-eye lenses and its experience accumulates in the Fish-Eye Takumar 35mm f/4.5 lens. In addition to its dynamic 180° fish-eye perspective which even makes it possible to curve straight lines, this highly versatile and precision optical instrument also offers incredible depth of field, close focusing down to 45cm and features four built-in filters.

In the ultra-wide angle range, the SMC Pentax 6x7 45mm f/4 is another highly versatile lens. This lightweight and compact model, which corresponds roughly to a 20mm - 24mm ultra-wide angle lens in the 35mm format and incorporates a floating element design, has been well corrected for aberrations and offers focusing down to 37cm.

The SMC Takumar 6x7 55mm f/4 and 75mm f/4.5 wide-angle lenses correspond to the 28mm and 35mm wide-angle focal lengths in the 35mm film format. Considering their retrofocus design, both lenses are relatively compact. Yet, absolutely no sacrifice in optical performance was made in order to reduce their physical dimensions. The extensive depth of field and close focusing capabilities of both aid greatly in the creation of highly dramatic effects. Furthermore, focusing is simplified by their comparatively large maximum apertures.



LEAF SHUTTER LENS FOR MULTIPLE EXPOSURES, FILL-IN FLASH SYNCHRONIZATION

● SMC TAKUMAR 90mm f/2.8

90mm



Photo by N. Tominaga

The 90mm f/2.8 SMC Takumar 6x7 Leaf Shutter Lens is a multi-functional lens that greatly increases the picture-taking versatility of the 6x7 camera. In addition to permitting use as a normal lens without cocking the built-in leaf shutter, it may be put to a variety of special uses when the leaf shutter is used. Shutter speed settings for the lens shutter run from 1/30 sec. to 1/500 sec. to enable high-speed flash synch—a must for outdoor portraits requiring fill-in flash and other special applications.

Moreover, the leaf shutter lens also permits easy and efficient multiple exposures, simply by locking the camera shutter open and freely tripping the lens shutter as often as desired without advancing the film. Special features include a built-in X flash terminal, cable release socket, shutter cocking lever and mode control lever.

Add new dimensions to your creativity with the 90mm Takumar Leaf Shutter Lens—another reason why we call the Pentax 6x7 “the Super SLR.”

● SMC PENTAX SHIFT 75mm f/4.5

75mm



Another highly versatile lens in the 6x7 system is the SMC Pentax 75mm shift lens. A problem constantly plaguing photographers, especially in architectural photography, is that of converging lines. The 75mm shift lens serves as a solution to the problem and a lot more. Equivalent to a 35mm wide-angle lens in the 35mm format, it features a 360° lens-barrel rotation and a maximum shift of 20mm in all directions enabling the photographer not only to correct converging lines, but allowing him the choice of not correcting or overcorrecting to achieve the most attractive and dynamic effect.

Moreover, this highly creative tool also permits creation of spectacular double-negative panoramics whereby two corrected photographs made with the shift lens are joined perfectly together, doubling the horizontal coverage or, in effect, creating a 6x14 format.

