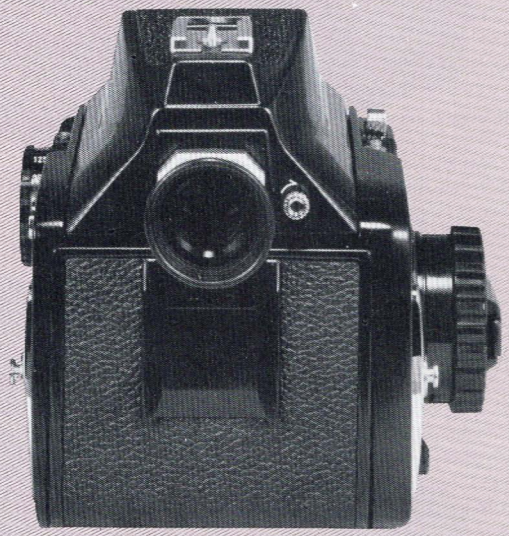
REPORT ON THE MAMIYA M645
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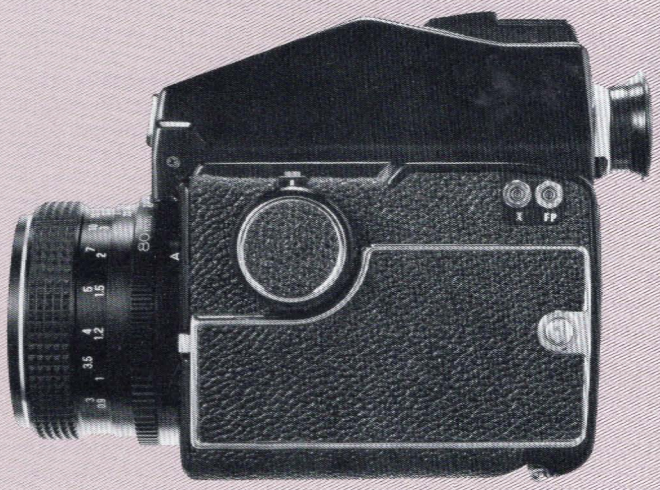
# MODERN PHOTOGRAPHY

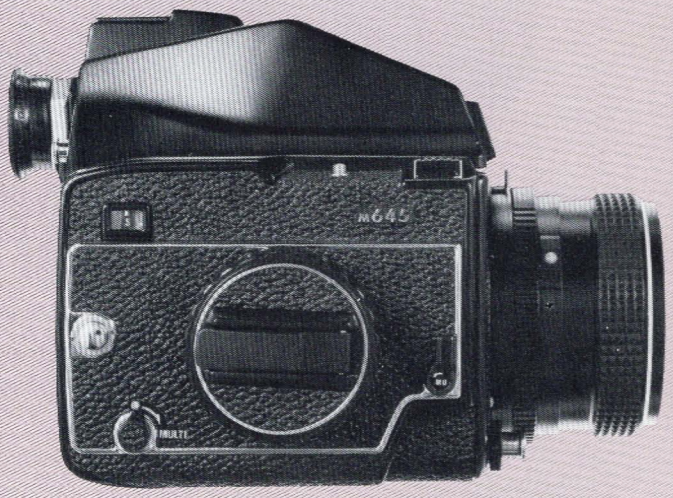
## Mamiya's New Compact Electronic Roll-Film SLR

SEPTEMBER 1975



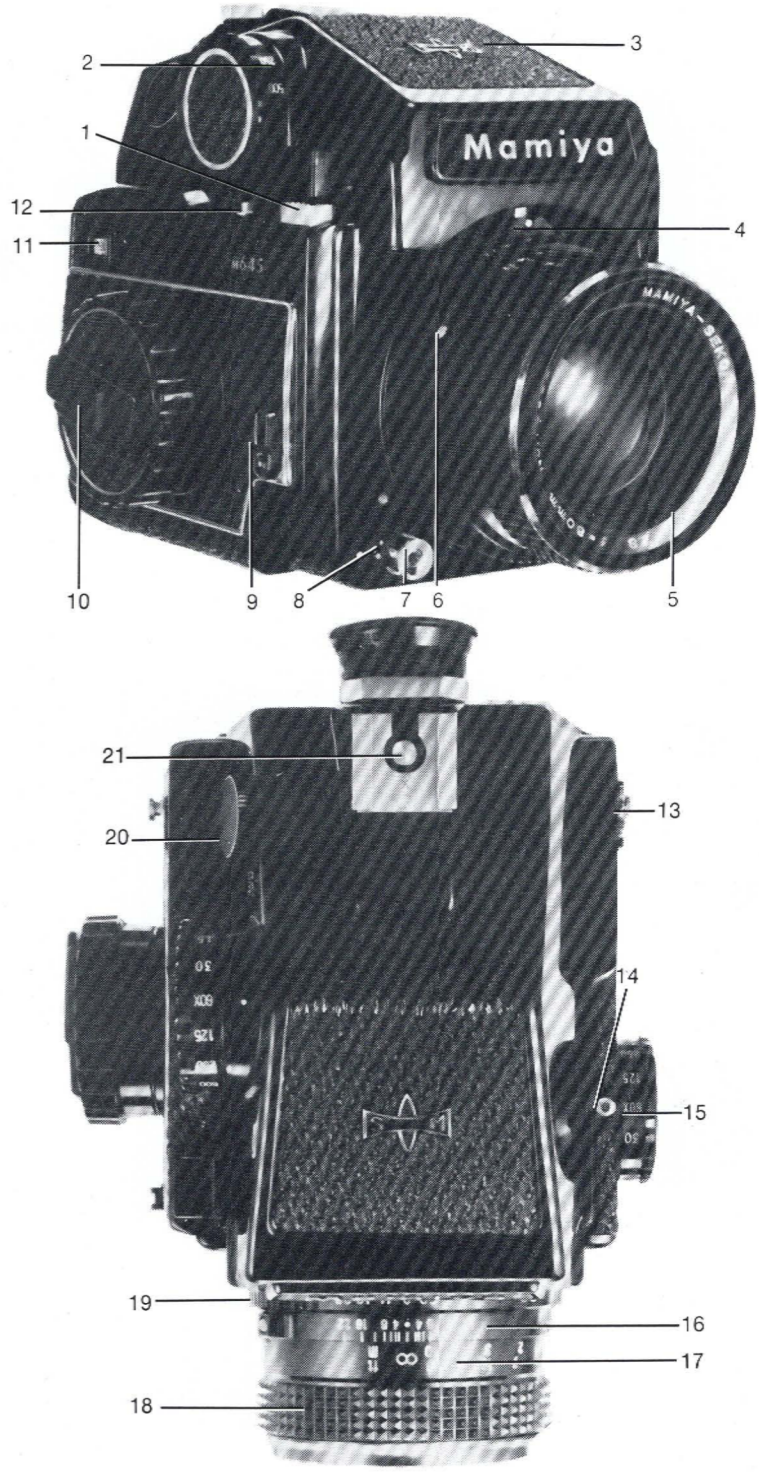





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# Mamiya Trims 2¼ Square Format to Come Up With Smallest Roll-Film SLR System Yet!




1. Upper shutter release. 2. Meter-prism shutter-speed dial. 3. Removable meter prism. 4. Meter coupling prong. 5. 80mm f/2.8 Mamiya/Sekor lens. 6. Lens-mounting alignment mark. 7. Lower shutter release. 8. Shutter-release lock ring. 9. Mirror-lock lever. 10. Folded film-wind crank. 11. Exposure-counter window. 12. Battery-check button. 13. PC flash terminals. 14. Battery-check lamp. 15. Body shutter-speed dial. 16. Depth-of-field scale. 17. Distance scale. 18. Knurled focusing ring. 19. Lens aperture ring. 20. Film-speed dial. 21. Hot shoe.

The trend toward compact camera design first exemplified among scale-focusing and rangefinder 35's has, in the past few years, encompassed 35mm SLR's as well. But while the dimensions and weights of many of the latest crop of 35mm SLR's have been shrinking dramatically, the medium-format roll-film SLR seems to have been progressing in the opposite direction, with larger and heavier 6x7's being introduced to compete with existing 2¼ x 2¼ (6x6 cm) standbys like the Hasselblad and Bronica. Perhaps that's not really too surprising, for the redoubtable Hasselblad 500 C/M is certainly a hard act to follow when constructing a compact 2¼ SLR. However, you *can* scale down the 2¼ SLR's chunky dimensions noticeably by trimming the film format a bit, and that's precisely what Mamiya has done to create their cleverly original new Mamiya M645, a remarkably petite medium-format SLR making 6x4.5 cm (nominally 2¼ x 1⅝ in.) images (which actually measure 5.6 x 4.2 cm) on universally-available 120 or 220 roll film.

In choosing to revive the "semi-120" format last seen in the Zeiss Super Ikonta A and Konica Pearl IV folding cameras of the 50's, Mamiya could have gone the "scaled-up 35mm" route taken by the Pentax 6x7 and the Norita, but they chose to be inspired by the Bronica instead. And so, like the Bronica EC, the Mamiya M645 incorporates an electronically-timed, vertical focal-plane shutter (8-1/500 sec. plus B.) in a squared-off body measuring only 4 x 4 x 6⅛ in. and weighing in at a light 2 lb. 15 oz. (1335 g) with the waist-level finder in place. There's also an optional electronically-coupled meter prism, much smaller but similar in concept to the one on the original Bronica EC, and an integral hinged body with replaceable film inserts (for 120 and 220 film) like the one found on the older, less expensive Bronica "C."

But while production economies have undoubtedly played a part in devising a camera designed to appeal to amateur photographers in search of better-than-35mm image quality (as well as pros seeking a handholdable 2¼ SLR to complement the Mamiya RB67's in their studios), the new M645 is anything but a stripped-down economy model. Indeed, it's an entirely new camera system based upon, but hardly confined to, the built-in advantages of the shorter 6 x 4.5 cm format, which include smaller, lighter, brighter-appearing pentaprisms, a single-turn (360°) film advance to get to the next frame, a shorter shutter-travel distance, and a smaller mirror with less camera-shake-inducing potential. Built upon these inherent pluses, the system goes on to include interchangeable finders and focusing screens, multiple-exposure provision, a fully-coupled meter prism with match-needle metering via LED's (light-emitting diodes) instead of a meter needle in the finder (like the Fujica

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## MAMIYA M645

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ST801) and, to start with, seven multi-coated meter-coupled lenses ranging from a 45mm f/2.8 to a 500mm f/5.6. And now for the details.

### Electronic Shutter

The Mamiya M645 utilizes a newly developed Mamiya Moving Coil Electronic Shutter which offers a selection of 14 shutter speeds (8-1/500 sec. plus B). Because of the moving coil system, battery consumption is said to be about one-tenth that of previous systems. What's more, battery consumption is the same at all shutter speeds. It may, therefore, be possible to use the shutter nearly 100,000 times on a single six-volt silver-oxide battery (assuming you're using a fresh battery at normal temperatures with the waist-level or pentaprism finder). At any rate, even if you shoot five rolls of 220 film a day for a year, that's "only" about 55,000 exposures, so the battery should easily last a year.

The shutter itself is constructed of rubberized cloth. It travels vertically across the narrow 1⅝-in. (4.5 cm) portion of the format. The X sync is at 1/60 sec. The shutter-speed dial has 15 click stops and freely rotates 360°. In addition to a click stop for each shutter speed, there is a click stop (marked by a red double circle) which is used in conjunction with the PD (metering) finder—more about this later.

The numerals on the shutter-speed dial are color-coded the following way: B, the click stop for the PD Finder, and 1/60 sec. (X sync) appear in red; 8, 4, 2 and 1 full sec. are in green; ½, ¼, ⅛ and 1/15 sec. are in orange; and 1/30, 1/125, 1/250 and 1/500 sec. are in white.

Since the Mamiya M645 doesn't have any mechanical shutter speeds, the design of the battery chamber is important. Fortunately, the chamber is very well-thought-out, incorporating a hinged spring-loaded cover which opens and closes in an instant without any fooling with coins or slots.

### Interchangeable Finders

There's a choice of three finders: waist-level, ordinary pentaprism, and the PD Prism Finder (which has the built-in metering system previously mentioned). The finders are removed in an instant by pushing and turning the finder release button—but they're held in place with a double lock.

The PD Prism Finder is one of the features that make the M645 exciting, so let's talk about it. The metering system of the M645 is, for practical purposes, identical to the one found in the Fujica ST801! Here's how it works. When you remove the waist-level finder, you'll notice that there are electrical contacts on the upper portion of the camera body; two contacts on the right-hand side for the hot shoe and two contacts on the left-hand side which connect the PD Prism Finder to the electronic shutter built into the camera body. After you attach the PD Finder to the M645's body, you then set the camera body shutter-speed dial to the special PD click stop, which activates the shutter-speed dial built into the accessory prism finder. The lens diaphragm is coupled to the PD Finder using the same type of coupling lug found on Nikon lenses which couple to the Photomic Finder. Thus there is complete coupling, and the system is as convenient to use as the system on any match-needle 35mm SLR. The PD Finder is not monstrous either; it's barely larger than the standard pentaprism finder. Dimensions and weight of the camera with the PD Finder attached are 4 x 5 x 6⅛ in. (99.3 x 124.7 x 154 mm) and 3 lb. 10.7 oz. (1,665 g). These figures make the M645 the smallest, lightest roll-film SLR in production.

How is the metering system similar to that of the Fujica ST801? Well, the finder uses two silicon cells for open-aperture, center-weighted readings. And the finder does away with the moving needle by employing seven LED's. The correct exposure is indicated by the central green LED, while the remaining six red LED's can be used as the perfect exposure-compensation system; it's possible to compensate exposure by up to ±3 stops. The metering system encompasses a very broad range: EV 0-18 (1 sec. at f/2.8 to 1/500 sec. at f/22 with ASA 100 film). There is a separate meter-on switch on the left-hand side of the finder. When you push in and release the switch, an LED in the finder lights up, and you can then adjust the camera according to the lighting conditions. But, after 5 sec. elapse, the metering system automatically turns off to eliminate unnecessary battery consumption. The meter also handles a broad ASA 25-6400 film-speed range.

Whether you prefer to set the shutter speed first and then adjust the diaphragm (shutter-speed priority), or vice versa, the Mamiya M645 metering system is a snap to use. The only way the metering system can be improved is by adding an automatic-exposure (AE) finder to the system. Theoretically, it is possible to add just such a finder to the M645 without modification of the camera body, thereby transforming it to a fully automatic-exposure SLR of the aperture-priority type. Since it's possible, we wouldn't be surprised if such an accessory appeared in the not-too-distant future.

Interestingly, the eyepiece on both prism finders is the same size as that found on the Mamiya DSX, which is of the "universal-size" type shared by Mamiya, Yashica, Pentax, Canon and Minolta. Therefore, right-angle finders, eyecups, eyeglass correction lenses, etc. from any of these cameras can generally be used on the M645.

With either prism finder in place, the ground-glass viewing image is bright with the standard f/2.8 lens, and accurate focusing is easily accomplished. Focusing screen units are a cinch to interchange; they just snap in and out. In addition to the standard focusing screen which comes with a microprism spot, there are three other screens available: all matte, rangefinder spot and "checkerboard" (for multiple-exposure work requiring perfect registration).

### Multiple-Exposure Provision

There is a small multiple-exposure lever behind the film-advance knob which works in the following manner: 1) Turn the film-advance lever once to transport the film and cock the shutter for the first frame of the multiple-exposure sequence. 2) Move the multiple-exposure lever from the normal position to the "multi" position *before taking the first exposure*. 3) Take the first exposure. 4) Turn the film-advance crank again to recock the shutter (neither film nor

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exposure counter will move). 5) Take the next exposure. 6) Repeat steps 4 and 5 as often as desired. 7) After completing the multiple-exposure sequence, don't forget to return the multiple-exposure lever to the "normal" position. Although you should experience no trouble manipulating the multiple-exposure lever, it is too small for comfort. There appears to be no logical reason to account for its diminutive size.

### Hot Shoe

Both prism finders are crowned with hot shoes which don't have built-in circuit breakers, so care should be exercised when working with off-camera flash. Of course, Mamiya provides a protective plastic cover to slide into the hot shoe on just such occasions, but such a solution, though common, is hardly foolproof. However, Mamiya did take the trouble to install a different type of circuit breaker under both prism finders. So, if you accidentally were to remove a prism finder with a flash unit still connected to the hot shoe with the "juice" turned on, there would be no possibility of getting a shock. Instead, a small white, spring-loaded switch pops out, opening the circuit and making a shock impossible.

### Shutter-Release Button

In the Mamiya (TLR) tradition, the M645 comes with two shutter-release buttons: one on the top and one on the lower portion of the right side of the camera. The two release buttons really come in handy when shooting verticals with this horizontally-arrayed camera, as there's always a release button at your fingertips. The lower release button is equipped with a lock ring, which simultaneously locks the upper release button as well.

### Mirror Lock

In front of the film-advance knob there's an easy-to-use mirror-lock lever. Just push it down and the mirror locks in the up position. Since it works independently, the mirror can be locked before or after cocking the shutter or taking a picture.

### Film Inserts

There are separate film inserts for 120 and 220 roll film. Once you load the inserts, you just snap them into the camera. Both are well-made, and particular care has been taken to keep the film plane absolutely flat, both in the design of the film insert and the camera body. The 120 film insert provides 15 exposures per roll, and the 220, 30 exposures.

### Lenses

The lenses, like the camera itself, are lightweight and compact, and are designed like 35mm SLR lenses. All have depth-of-field scales, infrared focusing marks, rubber grips on the focusing ring, and click stops. All the lenses are also multicoated, and each has a coupling fork on the aperture ring. The focal length is engraved in green on the aperture ring of each lens. Beneath this ring is an "auto-manual" diaphragm lever for depth-of-field preview.

The standard lens is a Zeiss-Planar-inspired, six-element 80mm f/2.8 Mamiya/Sekor, which is equivalent to a 49mm lens in the 35mm format. Other lenses (with their 35mm-format equivalents in parentheses) are: 45mm f/2.8 wide angle (28mm), 55mm f/2.8 wide angle (34mm), 110mm f/ 2.8 (68mm), 150mm f/4 telephoto (95mm), 210mm f/4 telephoto (129mm), 500mm f/ 5.6 telephoto (309mm). All M645 lenses have a bayonet mount which requires less than a quarter turn to the right to insert them into the camera body. To facilitate mounting, both the camera body and the lenses have an upraised red dot for correct orientation.

The minimum focusing distance of the standard 80mm lens is 27 in. (68 cm), and the minimum aperture is f/22. The filter size is 58mm, a size shared by the 55mm, 110mm, 150mm and 210mm lenses.

### Other Features

To check the condition of the battery, you push down on the battery-check button; a green lamp goes on if the battery is okay. The film transport is smooth; a single turn of the film-advance lever is all that is required. The camera bottom is furnished with Mamiya's double tripod socket, which is basically a ⅜-in. socket with a removable adapter for the more popular ¼-in. one inside it. A better system would consist of two separate permanently-mounted sockets.

### Handling

The Mamiya M645 proved to be extremely easy to handle whether shooting verticals or horizontals, even without the help of Mamiya's very nice hand grip. However, if you've been weaned on conventional 35mm single-lens reflexes, holding it steady may take a bit of getting used to. Of course, no camera has everything, but it's our impression that Mamiya's M645 has a great deal to like about it, including a projected price which while not truly low, is surprisingly moderate compared to its competitors. Hopefully, we'll be in a position to start giving the M645 the complete "Modern Tests" workout sometime around Christmas, 1975.—THE END

*The article "Mamiya Trims 2¼ Square Format to Come Up With Smallest Roll-Film SLR System Yet!" is reprinted through the courtesy of Modern Photography Magazine, 130 East 59th St., New York, New York 10022.*



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