first look

BY MICHELE FRANK

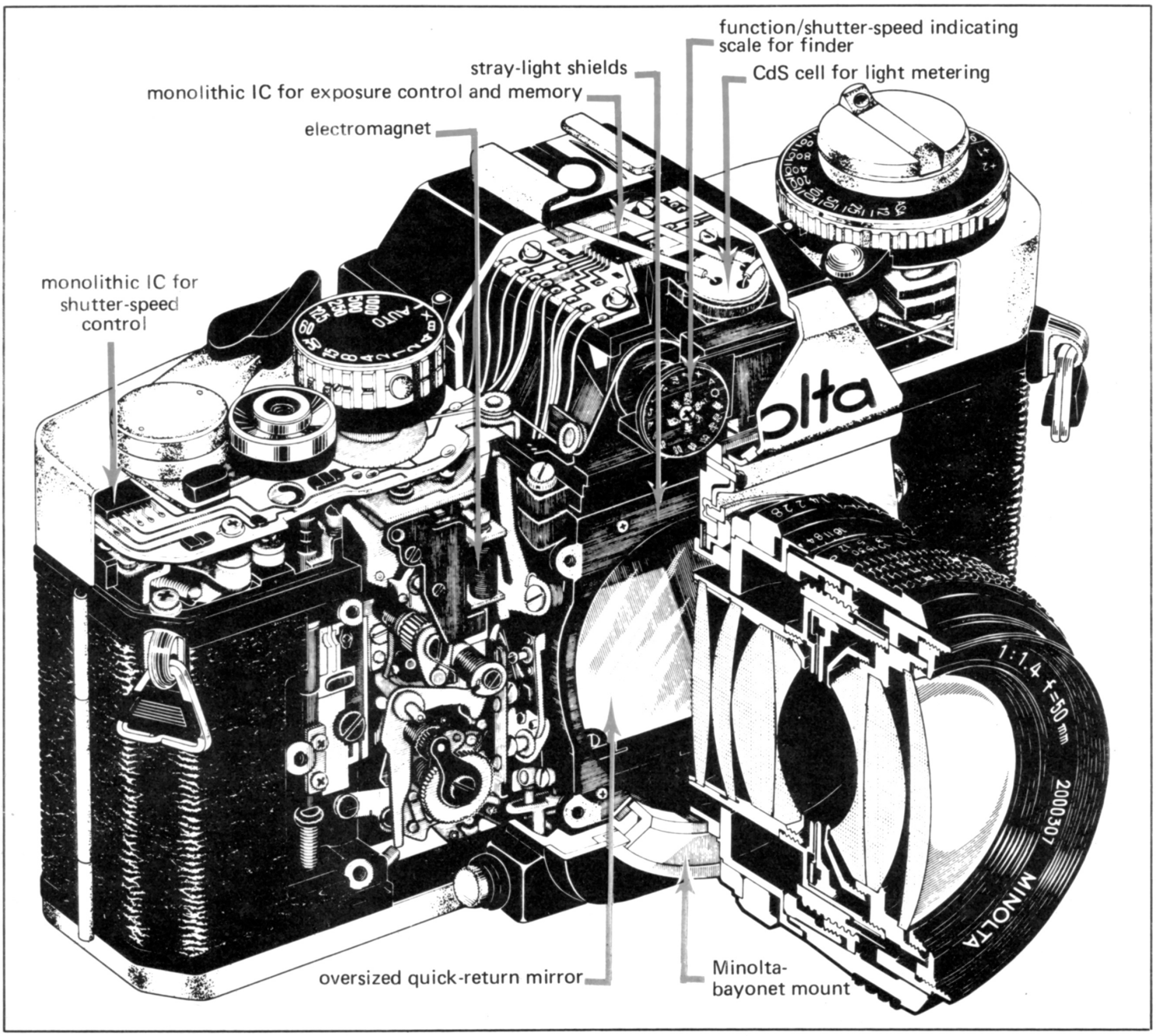
MINOLTA XE-7

- **Auto-exposure, aperture-preferred SLR 35**
- **Fixed eye-level pentaprism**
- **Electronically governed shutter with speeds from 4-1/1,000 sec plus B**
- **Through-lens metering with Minolta's CLC system**
- **ASA range 12 to 3,200**
- **Plus/minus two-stop exposure override**
- **Battery check**
- **Multiple-exposure switch**
- **Hot shoe and PC terminal (X and FP synch)**
- **System on/off switch**

Here is Minolta's second auto-exposure single-lens reflex. In price and features, it fits in a slot neatly between its SRT-102 and the XK with its AE finder. Significantly, it introduces a new electronically governed, vertically running metal focal-plane shutter called the CLS, the product of the cooperation between the firms of E. Leitz of Wetzlar, West Germany, and Copal Co., Ltd., of Tokyo, Japan. The new shutter is reminiscent of older Copal Square shutters but is 7 mm shorter, 4 mm narrower, and weighs 15 percent less. It also has fewer blades and simplified construction. With its use a camera can have a lower (and thus more compact) profile.

What it adds up to in my book is a shutter that operates very quietly and vibration-free—or so it feels in the hand. It's also only the second camera I've ever used to have such an effortless film advance that I keep checking whether it is actually feeding film and cocking the shutter. The wind is single-stroke (I wish it were ratcheted) with a 130-degree advance plus a 30-degree standoff—and it is smooth.

On the right rear of the camera are two windows, one above the other. The bottom one is the additive frame counter; the upper one (called the safe-load signal window) has an orange moving bar. This bar progressively moves from left to right as you advance the film. The further into a roll you are, the further to the right it will be. It is a visual indicator that the film is feeding through the camera, so you don't have to watch the rewind knob. The bar



SLR offers option of auto or match-needle exposure control, using electronic-type shutter

won't move if the film isn't being supplied to the take-up spool.

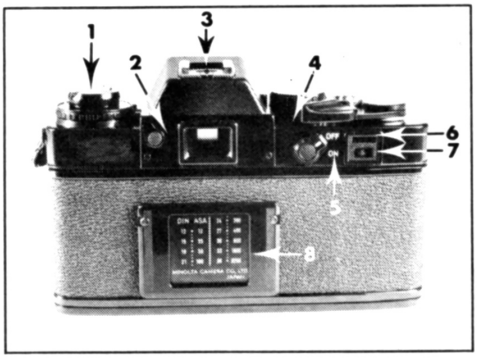
Those accustomed to having their frame counter topside may at first find the unusual backside location somewhat disconcerting, but this is just a matter of habit.

Sliding to the left, 6 mm over, one encounters the system on/off switch. I say system because it not only controls the meter but also the shutter. When the switch is in the off position, the shutter-release button cannot be depressed. On automatic, the electronically governed shutter offers stepless speeds from four to 1/1,000 sec. By going off automatic, you can program stepped speeds, again from four to 1/1,000 sec. To do so, depress a small button known as the Auto Setting Release and then line up the speeds on the dial with a large white dot on the pentaprism housing of the camera. X-synch has its own setting, as does B, though you can use your electronic flash in either the auto or manual mode from four to 1/90 sec or in manual from four to 1/60 sec as well as the X and B settings. For M-type bulbs, again set the PC terminal switch to X; here speeds for synching are from four to 1/30 sec on auto, plus B, as well as on manual. FP-class bulbs have their own switch setting at the PC terminal (it's a single one); on auto they'll synch from four to 1/1,000 sec, and on manual the same plus the X and B settings. A nice touch, by the way, is that the PC terminal is threaded.

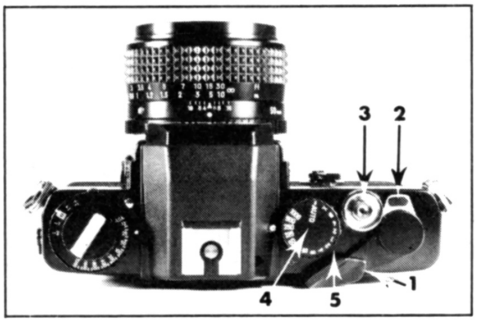
Minolta's CLC (Contrast Light Compensating) metering system consists of two CdS cells whose readings overlap. With the camera held horizontally, readings for all but the most trying lighting situations proved to be quite good. In severely back- and forelighted situations an exposure compensation is necessary. This is neatly provided by the exposure-adjustment control which gives a plus/minus two EV override. So, for instance, if you have a spotlighted figure against a dark background, the metering system is going to take into account the vast dark background and give a little "weighting" to the bright figure against it. The obvious solution is to give one or two stops less exposure than that indicated by the metering system. The opposite would be true where the background is very bright and the foreground dim and so calls for more exposure.

The exposure-adjustment control is coaxial with the ASA speed-setting ring under the film-rewind knob. When not in use, the control is set to the "O" position and cannot be rotated without pressing a small button on the ring. When wearing heavy gloves this may be a bit hard to locate and depress, but for the most part I didn't find

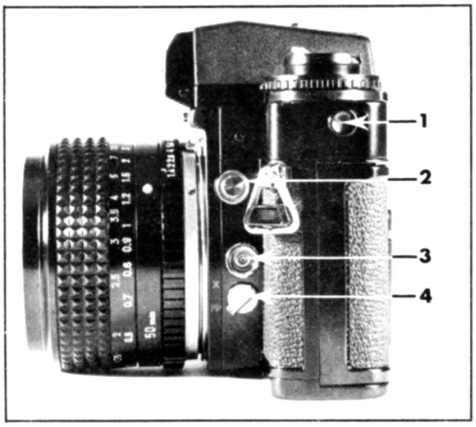
With its fixed pentaprism and compact "vertical" shutter, the XE-7 is low-profiled. Self-timer (arrow) shields its own release.



Back view shows rewind (1), eyepiece-shutter lever (2), hot shoe (3), wind (4), power switch (5), safe-load signal window (6), frame counter (7), and slot for film tab (8).



Right-hand controls include wind (1), multi-exposure switch (2), release (3), shutter-speed/function selector (4), and automatic-setting release button (5).



Left-side controls include battery check (1), lens-release button (2), threaded flash terminal (3), and synch selector switch (4).

it so. EV marks of +2, +1, —1, and —2 are shown, and there are subtle detents at the +1 and —1 positions. Intermediate settings are possible, so you can really "fine tune" your exposure correction. The EV range for the camera with an ASA 100 film and f/1.2 lens is 1 to 17.

The ASA ring shares the opposite side of the exposure-adjustment control dial and can be set from 12 to 3,200. It has a separate release lock, different in feel and location. If you're used to DIN, you'll find an ASA/DIN conversion scale printed inside the film-memo holder on the back of the camera; it will hold an end tab from your box of film. To many this may seem like an unnecessary geegaw, but I welcome it. There are too many times when I rate High-Speed Ektachrome at 400, then put the camera away only to pull it out a week later, glance at the ASA film-speed setting, and think I've got Tri-X in it and go off gaily shooting under fluorescents, in tungsten light, etc., only to discover when I rewind that it was color film. So, to me, it isn't a geegaw.

While the metering system provides easy answers for horizontal shots, I did find that there was some difference in exposure when holding the camera vertically. Pointing it at a contrasty subject with the self-timer down, and then turning it over so the self-timer would be up, resulted in a half-stop difference. It's a peculiarity of this type of system—one which you should be aware of, especially in situations where one-half of your vertical frame will be dark while the other light. What the system is designed to do (when used horizontally) is take into account the bright sky versus the darker foreground and "weight" the two so that the sky doesn't influence the foreground readings too much.

The metering system is used at full aperture with all MC Rokkor, MC Rokkor-X, or MC Minolta/Celtic lenses. Stop-down metering is necessary with RF Rokkors, Auto Rokkors, and Manual-Preset Rokkor lenses or lenses of other manufacture without meter coupling. To meter the stop-down way, push the switch to the lens' right (as you hold the camera for shooting). It's a plunger-type arrangement that can be easily pushed in and out for either metering or depth-of-field previewing.

Eyeglass wearers are cautioned that they should use an eyecup with the camera to help exclude stray light from entering the viewfinder eyepiece. For the tripod and self-timer user there's an eyepiece shutter to block light when the eye isn't pressed up against the window.

The camera is aperture-preferred in its

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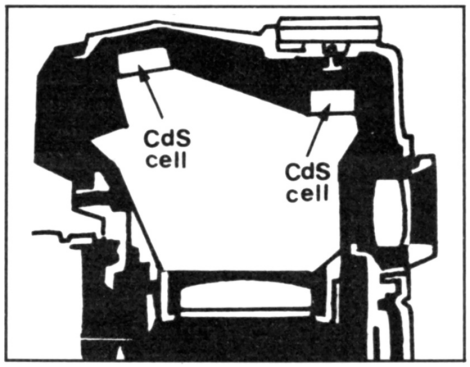
automation, meaning that you set the aperture and the camera's auto-exposure system will then select the precise speed that is proper for the lighting conditions, ASA indexing, and meter weighting. As I've said many times before, the battle rages hot and furious as to which system is best, aperture- or shutter-preferred. Minolta's rebuttal to the argument that aperture-preferred can cause unsharp pictures because of slow shutter speeds is that if you see that this might be a problem, you can change the aperture to a wider one; this in turn will cause the camera to set a higher shutter speed.

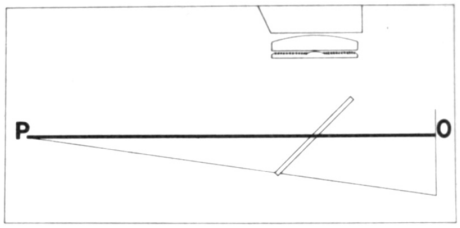
To select proper exposures when the camera is not in the "auto" position but on discrete shutter speeds, first either set the aperture or f-stop that you want, then observe the meter needle on the right inside of the viewfinder. You then move the shutter-speed dial until it matches the one shown on the scale or change the aperture until the shutter speed—the one you've selected and the one that's shown on the metering scale—match.



Top of pentaprism has two CdS cells, angled to read with overlap in center.

The viewfinder shows the following items to make life a bit simpler: on top, aperture and shutter speeds. The shutter-speed reading gives way to an "A" when the camera is on automatic, or an "X" or "B" when at those settings. As mentioned earlier, the right-hand inside of the finder shows the shutter speeds from four up to 1/1,000 sec as well as the meter needle which either indicates the shutter speed which is being set and/or the correct shutter speed for those lighting conditions.

Power for both the meter and the electronically governed shutter is supplied by two 1.5-volt silver-oxide batteries (S-76 or equivalent). This is three volts less than we're used to seeing, a tribute to the electronics designers at Minolta. The batteries are in a compartment accessible from the bottom. They fit, as clearly marked, into a holder that also serves as their coin-slotted cover in the baseplate. There is a very convenient battery check on the left side of the camera; it is activated by pressing down on a switch. If the batteries are okay, a red lamp will glow. I'm a great fan of battery checks that don't require special programming in order to use them.

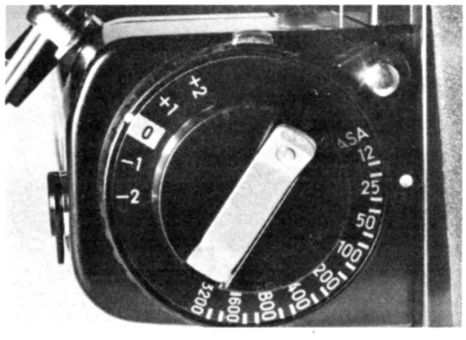


Oversize mirror minimizes image cutoff in finder. Efficiency is expressed in PO value: the larger its number, the less the tendency to produce image cut-off.

What happens if the batteries should "give up the ghost"? You'll know it. When pressing the release, the mirror will rise, but the shutter won't open. By setting the shutter-speed dial to X or B, the mirror will lower, but that's all. Without battery power you are limited to two speeds, X (1/90), or B. My advice to you is don't get caught without a spare set of batteries. S-76s aren't all that common, and a shutter speed of 1/90 and "Kentucky Windage" on exposure determination isn't any fun.

Focusing the XE-7 presents no problems, and the more and more common focusing aid line-up of split-wedge center, microprism circle, and finally matte-fresnel field takes care of all but the most trying focusing situations. I shall, however, keep up my pleas for more manufacturers to offer a central-split wedge that's at a 45-degree angle. In very dim light the problem of focusing becomes a bit more difficult, and the meter scale is then tough to see, but this would be true of any camera save something like the Leicaflex SL 2 which incorporates a small lamp for seeing metering information. Unfortunately, a lamp in Minolta's finder would affect meter readings.

There are, however, several touches that remind one that there is an association between E. Leitz and Minolta: First, the familiar (to Leicaphiles) red positioning bump on the lens for proper bayonet mounting. Secondly, the four-slot take-up spool that is practically a twin to the one of the Leicaflex. Loading, by the way, is very easy: open the back by pulling up on the rewind crank, drop the film in the chamber, and finally place the tongue of the film in one of the four slots of the take-up spool. Each slot has a small tooth to grip

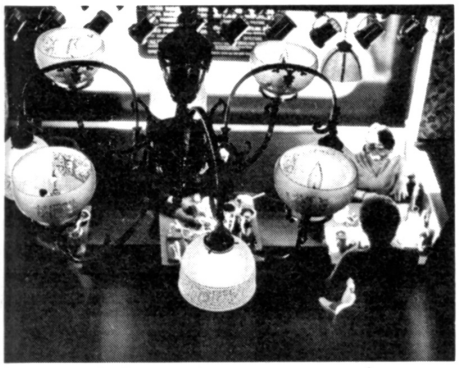


Concentric with film rewind is the ASA index dial with its own lock-release. Dial is circled by +2 to −2 exposure-adjusting ring.

the film's perforations and hold it as it's pulled around in a reverse curl.

How about some of the other features? There's a variable self-timer with two marked settings, the first giving a delay of about six sec and the other 10. When the self-timer is wound, it reveals the activating button. The timer can be overridden anytime during its cycle: simply press the shutter release. So, if you see something happening *now*, and the self-timer is running, you can still take the picture as fast as you can press the release.

Next, the multiple-exposure capability: Coaxial with the film-advance lever is a black tab. When pushed, it allows the shutter to be cocked without the film being advanced. The frame counter is disengaged at the same time as the advance mechanism, so you do have a true frame count. You can expose on one frame of film as often as you wish and, from my experience, keep excellent registration. After each exposure, however, the multiple-exposure lever flies back, so you'll have to reset it.



Minolta's CLC metering system coped nicely with this wide-range scene.

Long-lens users will be especially appreciative of the long PO value of 140 mm. This is a term that we're seeing more and more and, to quote from Minolta, is the "distance in mm along the optical axis from the focal point O to the point P at which an extended straight line connecting the lower edge of the mirror and the bottom of the frame intersects the axis . . . For practical purposes, the larger the PO value the less the mirror will tend to give image cutoff, which increases with the focal length of the lens used." In nitty-gritty terms it's that dark line, that you may get, running across the top of the image as you look in the viewfinder with long lenses.

Trying to wrap the whole thing up into a few concise words isn't too hard. The Minolta XE-7 is a beautifully engineered, handsome camera that gave me very good slides and negatives. To my mind it's nicely designed, ruggedly constructed for use under trying conditions, and has features that should satisfy equally all users from the professional to the casual amateur.

Price of the camera with 58-mm f/1.2 is $720; with 50-mm f/1.4, $645; with 50-mm f/1.7, $600; body only is $485. Address of Minolta Corp. is 101 Williams Drive, Ramsey, N.J. 07446.

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MINOLTA XE-7: AUTO SLR SPANS GAP

MANUFACTURER'S SPECIFICATIONS: Minolta XE-7 35mm fully-automatic single-lens reflex camera. Body No. 1017660. LENS: 50mm f/1.4 MC Rokkor-X PG in interchangeable bayonet mount, apertures to f/16, focusing to 21 in. (52 cm), accepts 55mm accessories. SHUTTER: CLS (Copal-Leitz) metal-blade focal-plane, electronically-timed, with speeds from 4 sec. to 1/1000 sec. plus B, FPX sync, self-timer. VIEWING: Non-interchangeable eye-level prism with central split-image rangefinder, microprism collar, full focusing fine screen. FEATURES: Fully-automatic, electronically-timed shutter with full manual override, ±2-f/stop variation in auto or manual mode available, CLC (contrast - light - compensating) dual CdS cell metering system measures illumination from entire focusing screen, auto and manual shutter speeds set, apertures visible in finder, shutter release lock, provision for double exposures, film-wind indicator, hot-shoe sync, battery check light, depth-of-field preview, viewfinder shutter blind. PRICE: $645; with 50mm f/1.7 MC Rokkor-X, $600; body only, $485.

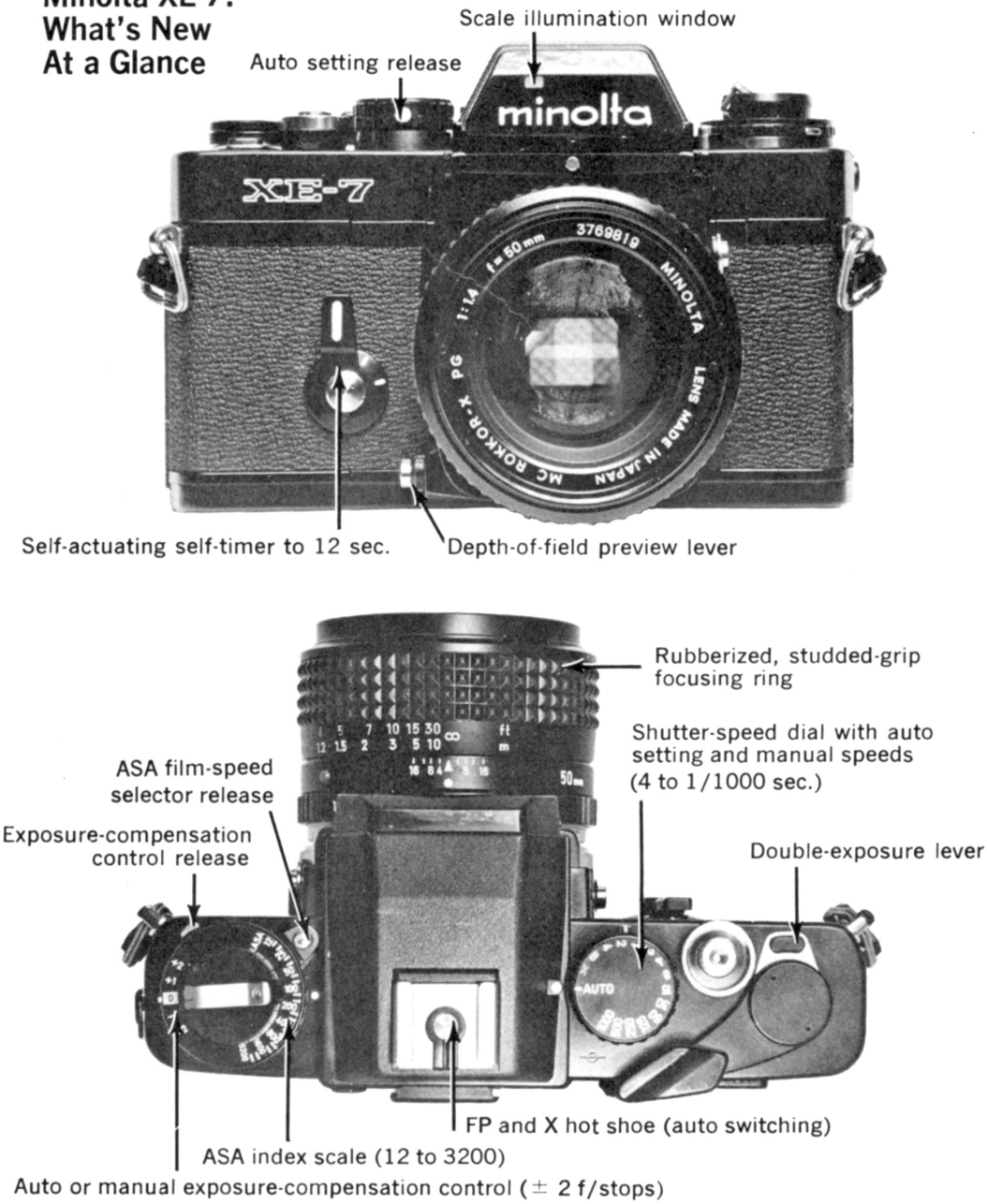
Now the big three who are committed to complete system cameras (Nikon F2, Canon F-1 and Minolta XK) as well as moderate-priced match-needle cameras (Nikkormat FTN, Canon FT series and Minolta SRT series) all have mid-range, very comprehensive fully-automatic cameras accepting their brand's full range of lenses (Nikkormat EL, Canon EF and, now, Minolta XE-7).

Unquestionably, Minolta, being last on the market, had the supreme advantage of observing what the Nikkormat EL and Canon EF offered and how each was accepted, and then adjusted their own plans accordingly. However, they had another major advantage which the others simply could not appropriate, the heart of the camera. Namely, the new electronically-timed, metal-bladed, Copal-made, Leitz-developed CLS shutter, which has become Minolta's to use exclusively for a number of years as a result of the Minoltá-Leitz mutual cooperation agreement. Lest you think this is a hollow advantage, let us state now that this new shutter is far quieter and jar-free than any Copal-Square shutter used by anyone else, and its low noise level can only be equaled by such cameras as the Olympus OM-1 and Fujica ST901.

Although the camera body's overall size, 2 3/8 x 3 13/16 x 5 13/16 in. (61 x 97 x 148mm), at first seems closer to the SRT 100, 101 or 102 cameras, in terms of internal mechanisms and external contours it owes its heritage far more to the Minolta XK camera. The body shape, corners, and placement of the preview button, lens release button, sync terminal and switch, are identical to the XK. The automatic-exposure range of EV 1 to 17 with an ASA 100 film is the same and, of course, both cameras use the same type of automation, the so-called aperture-preferred system wherein you can set the aperture and the camera selects a stepless series of electronically-timed shutter speeds from 4 sec. to 1/1000 sec. (the XK, however, does extend the speed range down to 16 sec. and up to 1/2000 sec.). Both cameras use the same CLC Minolta-designed CdS-cell metering system (more about that later), both allow full manual override, and both offer automatic or manual exposure compensation. The two cameras also give you a substantial amount of exposure information in the viewfinder.

If we had to make a concise estimate of which photographers would require the XK rather than the XE-7, we would recommend the former for users who must have interchangeable finders and screens, but at the cost of a more bulky camera. However, there is one additional advantage of the XK. If and when Minolta does offer advanced or different metering systems for those who might prefer a non-CLC system (perhaps a fast-acting, low-light-reading blue silicon cell circuit or digital readout), the XK does offer the fully-interchangeable prism with built-in metering. Thus the camera body can still be retained and the metering system revised. This, of course, is not possible

Minolta XE-7: What's New At a Glance

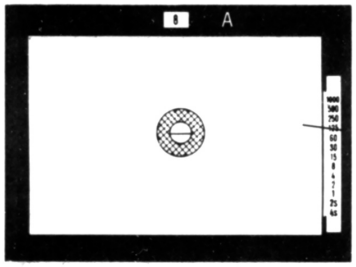


with the XE-7, in which the metering system is permanently fixed.

Now let's leave the XK and get down to the very interesting XE-7. First, why XE-7? In Japan, it's known as the XE and sold thusly. In other English-speaking countries, it's the XE-1. Minolta uses the XE-7 designation to identify those officially imported by its U.S. branch. (These cameras thus have the full benefits of officially imported cameras as far as service and warranties are concerned.)

The first impression you get of the XE-7 is of a superbly-finished instrument in dull satin black, having solidity (and a weight of 40 1/2 oz., or 1149 g) with beautifully-placed, extremely smooth-operating controls.

Much thought has apparently gone into the visibility of all markings and the inclusion of special locks to prevent accidental movements of essential scales. The shutter-speed dial is far larger and more visible than on the SRT series and has a locking



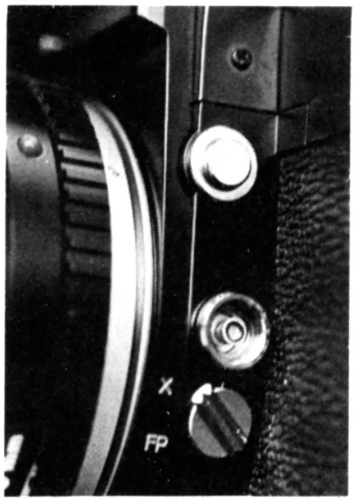
Finder has split-image rangefinder, microprism collar, full focusing fine screen, shutter-speed scale and needle at right, aperture set and "A" for automatic at top. On manual, "A" is replaced by speed you select.

button on its side. This must be pressed to shift the dial off the bright orange "auto" setting to the white speed numerals (1 to 1/1000 sec.), or the yellow 2-sec., 4-sec. and B settings, or the red X-sync setting.

There's another button-operated lock on the large ASA setting dial (12 to 3200) surrounding the rewind crank, and another push-button lock on the exposure-compensation scale on the opposite edge of the ASA setting dial. This latter scale provides locking at the zero or "no compensation" position and click indents at ±1 or 2 f/stops (although the scale can be set for in-between compensations as well).

This compensation dial is designed to provide specific increases or decreases in automatic exposure, which may be needed for certain subject matter and lighting. It also works on manual exposure speeds. However, you must remember to return it to zero after you've finished, since there is no reminder in the finder.

Other well-thought-out, unusual features of the XE-7 are the frame counter's location at the back of the camera (so you needn't peer at the camera top as with almost all other SLR's) and a most interesting film-wind reminder. Inside the take-up spool film chamber, next to the spool spindle, is a tiny feeler arm which rides on the edge of the film as it's wound on the spool. When film is moving through the camera, the feeler is displaced by the film



Lens release button, PC contact and FPX switch on left side of lens mount are identical to those on Minolta XK.

wound on the spool, and this causes an orange band to appear in a window atop the frame counter. The more film is wound, the farther the band moves toward the right.

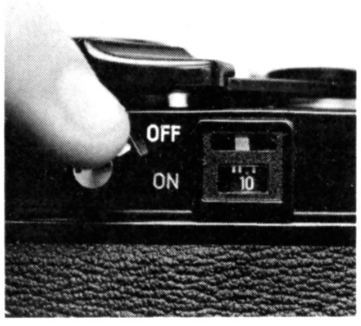
While careful photographers will rightly point out that the turning of the rewind crank knob during film advance does precisely the same job for all other SLR's, the band is a constant reminder at all times, not just when you're advancing film.

The meter on-off switch is, in our opinion, a vast improvement over the switch on the camera bottom, beloved for so long by Minolta on their SRT cameras. It's much handier on the back of the camera. In terms of universality, it's probably the best compromise. Meters which turn on only when the wind lever is moved away from the camera body cause difficulties with left-eyed users who inadvertently shut off the meter with their noses or checks. Meter switches in the shutter release which require a slight pressure on the release to operate often don't allow CdS cells sufficient time to react to low light levels for accurate exposures if the release is pressed swiftly. The only negative feature of a switch such as that on the XE-7 is that you must remember to switch it off. This is far more important on a camera with an electronically-timed shutter, such as this, than on a mechanically-operated-shutter camera, such as one of the SRT's (in which the batteries only operate the meter circuitry). In the XE-7, the electronically-timed shutter circuitry is powered by two small silver-oxide (MS76 or equivalent) batteries. Leaving the circuit on, even if the lens is tightly capped, will gradually exhaust the battery.

Let's look at the finder. The overall viewing area frame with its right-angle corners resembles the XK far more than the SRT's which have rounded corners. The shutter-speed scale at the far right, outside the picture area, receives the light to show its large, legible black numerals from the lens. The scale background is really an extension of the viewfinder screen. When the image in the finder is bright, the scale will be easy to read. In very low light levels it will be more difficult. Atop the screen, again outside the picture area, is a window where you can see the aperture numerals. These are reflected directly from the aperture scale of the camera lens by an optical system within the prism housing. We attached many different Rokkor lenses, from the earliest for the SR-2 to the latest. In each case the aperture could be seen clearly. However, the latest Rokkors which have white numerals on black, rather than black on chrome, caused less flare within the finder. If you don't have Rokkor (or the new budget-priced Minolta Celtic) lenses, you'd better check them on the XE-7 to make sure you can see the f/stop numerals (if you feel this is an important feature).

The aperture scale gets its illumination from directly over the camera. If the camera itself is in adequate light, you will be able to see the scale easily. If you are in a dark area shooting into a bright one, you may have some difficulty seeing it.

The third information area is located just to the left of the aperture in the finder. In the



Meter switch in "off" position also locks shutter release. Bar in window (atop frame counter at right) indicates that film is winding correctly.

automatic-exposure mode it shows an "A." On manual speeds it indicates the shutter speed you select, or X or B. This is a built-in scale geared to the shutter-speed dial. It receives its light from the front of the prism housing, where a tiny opalescent panel allows light to enter the prism face.

We did find that all scales were generally sufficiently visible if there was enough light for picture taking. When shooting flash in the dark, none of the internal information would really be needed anyhow. Non-eyeglass-wearers will have no difficulty in seeing all parts of the screen and the information areas. Eyeglass-wearers may have to shift their vision slightly to see one scale or the other, although they will be able to observe the entire focusing screen.

The viewing screen, shutter-speed scale, manual speed (if selected) and aperture scale are not located at the same apparent distance from your eye, however, so you will have to slightly refocus your eye for each to see them clearly. The screen, according to our measurements, is set at 36 in. from your eye, the meter needle at 28 in., the shutter-speed scale at 24 in., and the aperture numerals and "A," or manual shutter-speed numerals, at 20 in.

By including three different focusing aids, the designers feel they have provided accurate focusing for any function the camera may be called upon to perform. The central split-image rangefinder works efficiently with nearly all lenses at apertures greater than f/8 without blacking out one semicircle or the other.

The microprism is an excellent alternative down to about f/5.6 for all subject matter which has no easily identifiable line to use with the split-image rangefinder—like a shaggy dog.

The outer fine-focusing area can be used for all lenses at all apertures, but it does require more subjective judgment as to when the lens or attachment reaches its sharpest point. It's a very sensible triple arrangement for a camera which has a fixed focusing screen.

The viewfinder, which provides 0.84X magnification (a bit smaller than life-size) with the 50mm normal lens, shows approximately 94 percent of the actual picture-taking area horizontally and 93 percent vertically—a good performance for a camera designed to compensate for the amount of outer picture area that is generally lost under a cardboard slide mount or at the edges of the average negative holder or commercial printing machine.

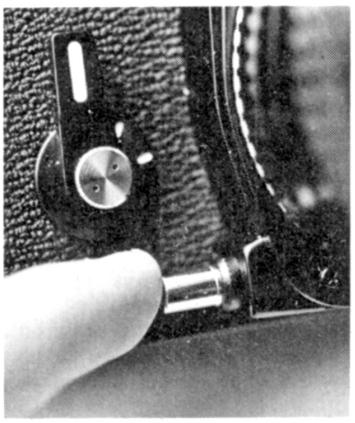
Finder contrast was judged to be very good, and finder brightness was good. The concentric Fresnel circles used to brighten the finder area to the corners have been kept out of the screen focus, so the lines don't interfere with fine focusing on the outer areas of the screen.

Meter needle response to varying light illumination is quite similar to that found in the XK and SRT cameras. The very long (and, therefore, quite visible even in poor light) needle at the right moves in a lively fashion in bright illumination, but is somewhat poky getting to settings in low-light situations, particularly if it

has been previously exposed to bright illumination. When using any Minolta SLR in low light, it's advisable to allow sufficient time for the meter needle to come to rest accurately.

While the camera's specifications only mention a meter-coupling ability for ASA 400 film down to ¼ sec. at f/1.4, the camera's actual abilities do vary depending on its electronic components. Our test camera was able to get down to 2 sec. if we allowed it sufficient time and closed off the viewfinder with the finder blind (operated by a lever at the back of the camera). However, in terms of practical working operation, ¼ sec. is all you should expect.

Incidentally, the rather confusing and totally unexplained automatic-coupling range table on

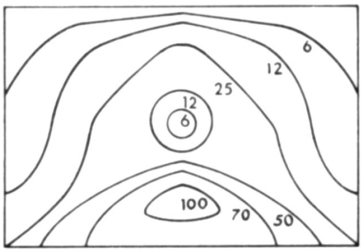


Preview button near bottom right of lens mount stays "in" for full aperture operation, remains "out" when pushed for closing down lens.

page 54 of the instruction book was the only flaw in what we considered to be a most excellent and unusually direct and truthful instructional booklet. (A word to Minolta instruction booklet writers: there's still plenty of room on page 54 for an adequate table explanation.)

Automatic-exposure operation is handled in the usual manner. You turn the aperture ring while observing the shutter-speed scale in the finder until you reach the aperture or shutter speed desired. If you do use the exposure-compensation dial, the alteration does affect the needle, which will point to the true shutter speed set. We found this dial most handy in overcoming the CLC metering system when we were in lighting situations which did not lend themselves to it.

For those who may not know (or may have forgotten) how CLC works on all Minolta SLR's, let us explain that it's a special meter weighting system having its highest sensitivity close to the bottom of the finder frame. This is accomplished by a CdS cell located at the top of the finder prism towards the rear of the camera body. But a second cell, towards the front, compensates these readings by measuring the brightness in the upper area of the finder image. This dual system tends to work particularly well with contrasty subjects. Minolta adopted this system for its SLR's after exhaustive field research proved to them that it was the best compromise system and that it would produce the greatest number of well-exposed pictures of standard subjects for most users. Contrary to erroneous directions given here and there, it does work equally well whether the camera is held vertically or horizontally. But there are some instances where you might not wish such com-



Meter sensitivity diagram shows XE-7's CLC system is similar to lower-center weighting. See text for explanation of sensitivity dip at center.

pensation, as when photographing a spotlighted singer against a black background, or where the compensation might not be enough, as in a backlight situation. These conditions can be compensated for nicely with the exposure-compensation scale. Directions for the use of such compensation are clearly given in the instruction book—the first time, to our knowledge, that Minolta has done so.

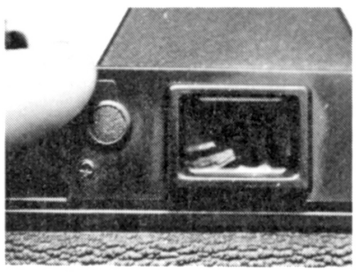
Our meter sensitivity diagram shows that the CLC system is roughly comparable to a lower-center-weighted system, but with greater than usual sensitivity at the top of the frame. The sensitivity dip in the center is due, we believe, to the fact that the central split-image rangefinder and microprism collar emit highly directional light, which largely misses the two metering cells.

If you decide to operate the camera using manual speeds, the needle at the right will continue to indicate the suggested proper speed for any aperture set. By matching the shutter speed at the top of the finder with the speed indicated by the needle, you can set the proper exposure. Of course, you can also use the indicated exposure as a point of departure with manual speeds.

With older non-MC Rokkor lenses which do not have the lug coupling to the camera's meter-coupling pin, you must press the depth-of-field preview button on the bottom left of the body lens mount. It will then close down your lens to whatever aperture you set. The camera can then be used for automatic exposure just as with regular MC lenses (or you can use manual override as with MC lenses). Of course, since you're closing down the lens, the view through the finder will get progressively darker at smaller f/stops instead of staying bright, as it would with MC lenses.

With non-Rokkor manual and preset lenses or all mirror and single-aperture lenses, you needn't press the depth-of-field preview button at all. Just close down the preset or manual lens until you reach the desired shutter-speed/aperture combination. In the case of mirror or other single-aperture optical systems, you just attach the lens and release the shutter. The needle within the finder will show you the actual shutter speed set when the camera has been set on automatic.

There are several other features on this camera which are well worth mentioning. The intentional double-exposure lever is located directly in front of the rapid-wind lever hub. After your first exposure, you push the double-exposure lever to the right. This uncovers a red warning dot and allows you to wind the shutter again with no advance of the frame counter. The system does provide a simple method of obtaining double exposures with good registration. However, since the sprocket wheel remains free-turning during the second (or more) wind-

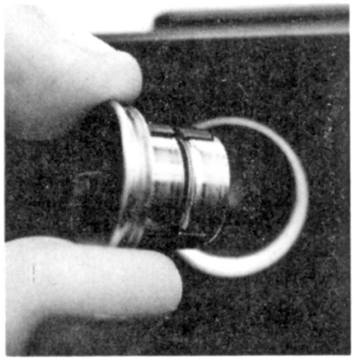


Built-in shutter blind to prevent extraneous light from entering finder is useful; it's controlled by lever at back.

ings, there is a chance of a slight horizontal displacement of the film, which might prevent continued absolute pinpoint registration of the secondary image(s). After the intentional double exposure, during the ensuing wind with the advance lever, the double-exposure lever will return to its "off" position.

The flash system has FPX sync rather than the more standard MX. X, of course, is for electronic flash. On the XE-7's new shutter, it's at 1/90 sec. (rather than the Copal Square's usual 1/125 sec.), but it's still considerably faster than the standard 1/80, 1/60 or even 1/30 sec. used on most cameras. Its other setting (with both the hot shoe and regular PC terminal) is FP, for the long focal-plane-shutter bulbs. This can be used at all speeds. However, M bulbs can only be guaranteed at 1/30 sec. or lower (although it's suggested that some may allow greater speeds). This M-sync limitation is apparently one of the small prices being paid for the new advanced Copal-Leitz shutter. In view of the few people now using such flashbulbs, however, this is a negligible point—unless you're one of those few people.

The hot shoe has an automatic built-in cutoff switch, so that there is no live sync contact unless a flash unit is slid in place. This prevents any accidental firing when units are put on or taken off. It also negates any possible tingling of your face if you should come into contact with the hot shoe while using the camera without flash.



Instead of just being dropped into chamber as on other cameras, two 1.5-volt silver batteries clip into holder which then threads into camera bottom.

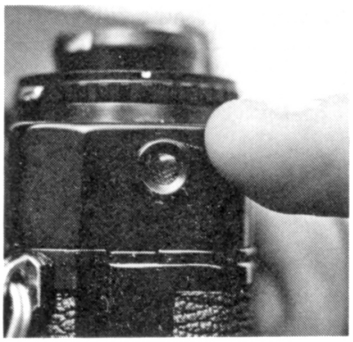
The self-timer is of the self-actuating variety. You push downwards on the lever, using either the 6 or 12-sec. white indicator lines or anything in between. You set off the timer by pressing the small button right above it. Such a system, of course, allows an owner to ignore the self-timer once set and use the regular shutter release if the user decides to change his/her mind.

With its efficient circuitry, the XE-7, like the XK, uses a smaller amount of battery power—in this case, two 1.5-volt MS76-type silver-oxide batteries which clip into a battery holder attached to the battery compartment cover plate. This is a more secure method of inserting and removing batteries since there is no danger of having them drop out of the battery compartment inadvertently. Silver-oxide batteries do provide a somewhat extended temperature operating range compared to the mercuric-oxide cells used in many other SLR's. Silver-oxide batteries allow camera use from about 32 to 140° F. The camera's instruction manual does suggest that new silver-oxide batteries will work in lower than freezing temperatures, but we suggest that in such weather the camera and/or batteries should be protected and kept warm until actual use, as the bat-

tery manufacturers themselves do not recommend any silver-oxide battery use below freezing.

The battery test lever and red lamp on the left edge of the XE-7 are similar to those on the XK camera and are very welcome.

The newest Rokkor-X lenses on all Minolta SLR's have the red, raised attaching dots for sight-unseen ease of mounting, well-marked green footage and white meter numerals (although we'd rather have 'em the other way around), clear depth-of-field and aperture scales, plus an excellent heavily-studded rubberized focusing ring. The aperture-setting ring has the usual MC lug,



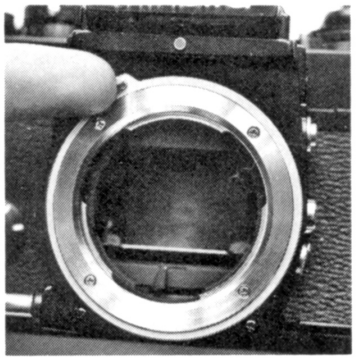
If batteries are O.K., pushing down lever on left end of camera will light red signal at hub.

which makes contact with the aperture-setting ring pin on the camera itself. We judge this ring to be one of the more delicate parts of the Minolta SRT and XE-7 cameras (the XK uses another system). On earlier non-X Rokkors having MC coupling, the barrel diameter was somewhat smaller and thus the aperture-setting ring was exposed. The ring could possibly be damaged or accidentally held by the user in this exposed position. Even the slightest bend tended to make the ring stick, thus creating incorrect meter settings. In the Rokkor-X lenses Minolta designers have overcome this problem by using the larger-diameter barrels which completely cover the ring when the lens is mounted. When the lens is not attached or when other lenses are used, be very careful of this ring.

The mirror chamber of the XE-7 is somewhat the same as on the SRT's, with heavy anti-reflection ribbing at the bottom. However, the side ribbing has been replaced with a matte black coating material, but this seems to work as well. The mirror itself is the same overlarge size used on all modern Minoltas to prevent any mirror cutoff in the finder when close-up equipment or lenses up to 1600mm are fitted.

Three additional Minolta XE-7 features must also be mentioned. The film-reminder pocket at the rear (which has an ASA-DIN conversion chart printed on it) accepts even large film box ends (meaning Kodak) without the need for box-end trimming. The now-standard (on Minoltas), specially-designed neck-strap ring triangles prevent any possible unwanted loosening from the camera. Lastly, and possibly most important, the adoption by Minolta of a tough, almost indestructible plastic housing over the prism prevents any damaging or denting of the prism housing which is all too often encountered with other SLR's.

All these individual features really work effectively together in actual use. It was a delight to see

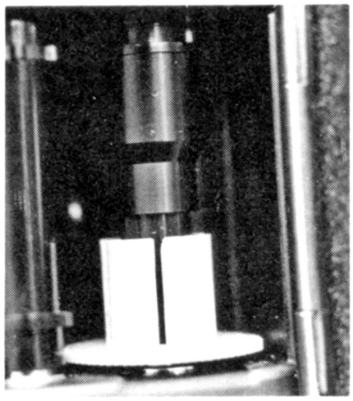


Meter-coupling pin ring around lens mount is similar to that on SRT cameras, and should be treated carefully.

all the needed information within the finder at all times. After it is pulled out an initial 30° from the camera body to operating position, the rapid-wind lever makes an exceptionally smooth and effortless arc of 130°. The shape is splendid; our only complaint is that we would have liked it to be geared so that it could wind in two or more short strokes instead of only one.

The camera focused with fine discrimination and we were able to change lenses easily and swiftly (once we became used to the better lens-release button on the lens mount instead of the more flimsy and definitely less easy-to-use knurled button of the SRT cameras).

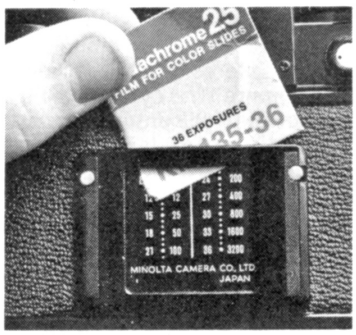
Film was easy to load. The white four-slotted collar with teeth (around the take-up spool) caught the film leader easily. A few swift turns of the knurled spool ends moved the film so that both sets of sprocket holes were over the sprocket teeth. The back closed with authority. Rewinding with the good-sized folding crank and ribbed plastic



Four-slotted, take-up-spool collar is very convenient, as are knurled spool ends for tightening film.

handle was splendid. The camera, like other Minoltas, opens when you pull up smartly on the rewind knob.

But the real icing on the camera was that shutter release. More often than not, you simply couldn't hear the camera under general shooting conditions. It was a soft decisive noise with no after-ring or clatter. It caused little vibration. The mirror damping was also obviously well done



Film-reminder pocket at back holds box end without trimming.

and contributed to the lack of noise or jar. We've waited a long time for SLR's to catch up with the quietness of rangefinder cameras. In the XE-7, we've just about got it.

While our pictures, taken with both slide film and black-and-white, were all that we could ask for, we were naturally anxious to check shutter and automatic-exposure accuracy in our lab and then go on to a test of the well-known 50mm f/1.4 Rokkor-X lens which was provided with the test camera.

Using our Kyoritsu FL-4DM2 shutter testing machine, we found that all marked shutter speeds were accurate to within 15 percent—and most were even more accurate. Measurements of exposure accuracy at the film plane using our Kyoritsu auto-exposure test apparatus confirmed the high level of accuracy of the XE-7's metering/ auto-exposure system that was apparent on our test slides. At all film-speed/ light-intensity/aperture combinations tested, the auto-exposure system delivered exposures accurate to within ⅓ stop.

Turning now to the 50mm f/1.4 Rokkor-X, here's what our optical bench and Kodachrome test slide analysis revealed:

Central image quality: Central color fringing was judged to be quite well corrected. It was prominent on the bench only at maximum aperture, and wasn't disturbing at any aperture on our test slides. Central spherical aberration produced an average amount of flare wide open, but came under control quickly as we stopped down, disappearing for all practical purposes at f/4. Focus shift was 0.07mm, somewhat on the large side but within acceptable tolerances.

Edge image quality: Lateral color was exceptionally well corrected, being virtually invisible on both the bench and slides. Moderately large astigmatism was observed in the outer ⅓ of the picture area at f/4 and wider apertures. It was substantially reduced at f/5.6. Coma appeared rather well controlled; flare was prominent only at f/1.4.

Resolution Power

50mm f/1.4 Rokkor-X No. 3769819 At 1:50 Magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
1.4	V/Good	50	Exc.	40
2	V/Good	56	V/Good	45
2.8	Good	63	Good	50
4	Good	63	V/Good	56
5.6	Good	63	V/Good	63
8	V/Good	70	V/Good	63
11	V/Good	63	Exc.	56
16	V/Good	63	Exc.	56
Actual Focal Length: 51.7mm				

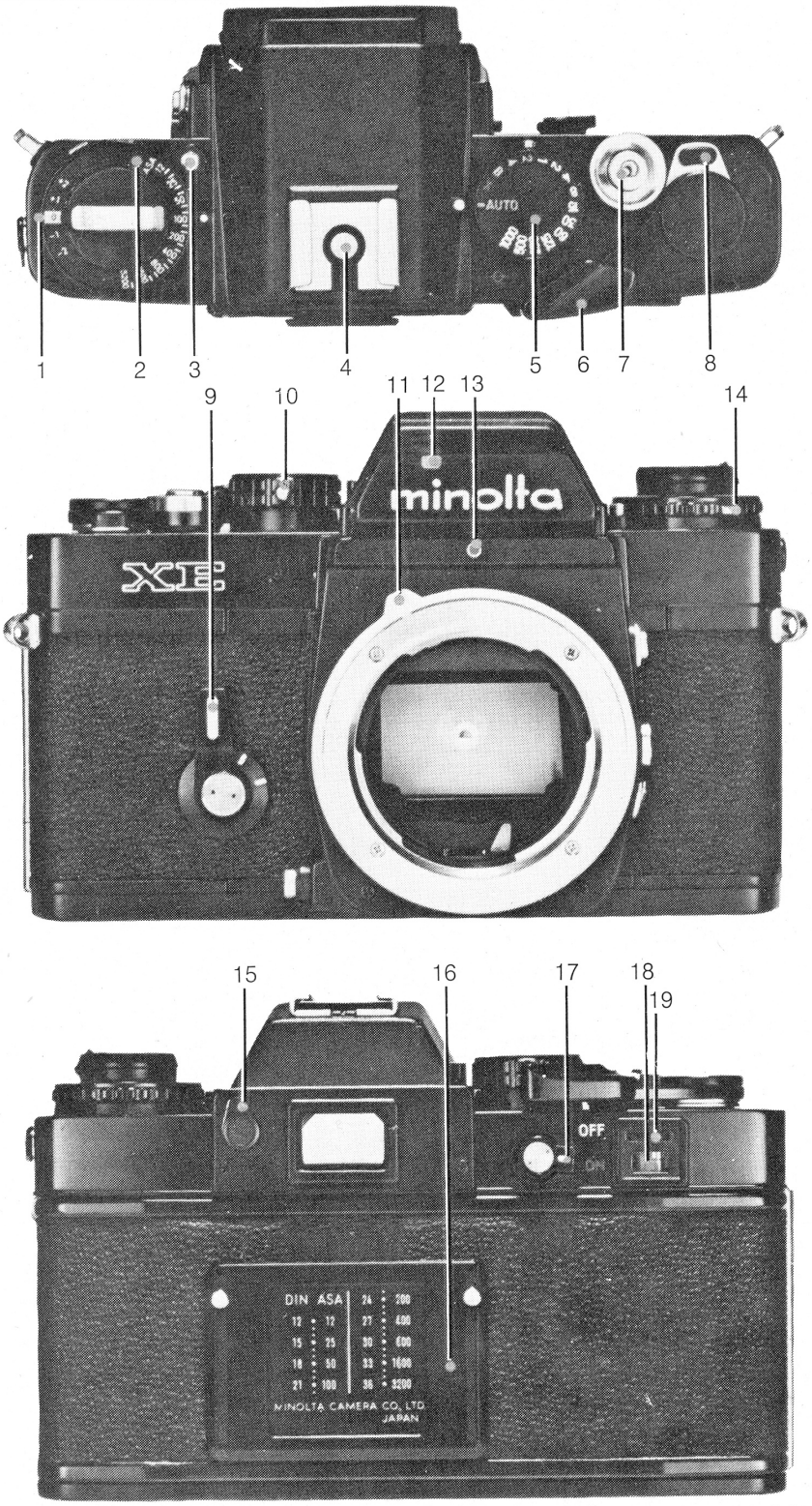
Image Contrast

50mm f/1.4 Rokkor-X No. 3769819 At 30 lines/mm				
f/no.	Center Percentage		Corner Percentage	
1.4	Medium	48	Medium	30
2	Medium	56	Medium	38
2.8	Medium	67	Medium	44
4	Medium	70	Medium	51
5.6	High	73	High	53
8	Medium	68	High	65
11	High	64	High	56
16	Medium	57	High	55

modern tests

All in all, we found the XE-7 to be a real pleasure to use; its well-thought-out design, conveniently-placed controls, remarkable quietness, and high level of construction and finish make it worthy of serious consideration by anyone interested in a top-quality automatic SLR.

Minolta's New Auto SLR (Between the 102 and XK) Makes Its Debut on the Japanese Home Market



1. ±2 f/stop auto-exposure compensation dial. 2. ASA setting dial. 3. ASA dial lock button. 4. Hot shoe. 5. Manual shutter-speed dial (4 to 1/1000 sec.) with "auto" setting. 6. Film-advance lever. 7. Shutter-release button. 8. Double-exposure lever. 9. Self-timer. 10. Auto-exposure lock button. 11. MC meter-coupling pin. 12. Viewfinder information light intake window. 13. Red lens-alignment mark. 14. Film chamber cover. 15. Eyepiece blind lever. 16. Film-box end memo holder with ASA-DIN conversion table. 17. Meter on/off and shutter-lock switch. 18. Film counter. 19. "Safe-load system" film-advance window.

Very wisely, most Japanese camera manufacturers release new cameras on the home market first, to test them out for possible bugs and needed revisions, before they're made available to the U.S. public. While the new fully-automatic Minolta XE-7 won't be available in the U.S. until mid-1975, the Japanese version has just been released. Although there may be inner and outer changes in the camera before it appears here, we asked our tech man in Japan, Chuck Gallozzi, to grab an early sample and give us his firsthand impressions.

While Nov. 21, 1974 (the day the XE was released in Japan) will not go down in history as the day a revolutionarily new camera was introduced to the public, the XE does represent a logical development to fill the gap between the SR T102 and the XK, as well as to compete with the Nikkormat EL, Canon EF, Fujica ST901 and Pentax ES II. These five automatic cameras all have the same price tag in Japan.

One of the strong points of the XE (or XE-7, as it will be called in the States) lies with the Minolta system that stands behind it. Thus, a Minolta owner may step up to the XK or step down to the SR-T102, and he has a comprehensive range of top-grade lenses to choose from. A total of 5,000 cameras has been distributed throughout Japan and, during the first week at last, 1,000 have been sold. This is actually quite good, considering that the first half of the week was before payday and the second half was comprised of weekdays.

Minolta is using these eight key points (describing what the camera offers) to push the XE in its enormous campaign for the Japanese market.

1. Electronic AE camera sharing in the technology of the XK.
2. 4-1/1000 sec. stepless range on auto.
3. Contrast Light Compensation.
4. Minimum consumption of electricity.
5. New shutter.
6. Information-packed finder.
7. The changeless Minolta mount.
8. Built-in safety features.

Regarding these points, the other four cameras mentioned also share in a sophisticated technology and, of course, are automatic models. Concerning point 2, the others either match or surpass this claim. (The Canon, of course, offers a stepless range of apertures instead of shutter speeds.) As for point 3, it's valid if you prefer the CLC concept. Point 4 is a definite plus; like the Canon EF, which uses only two (1.3-volt) batteries, the XE requires merely two (1.5-volt) batteries. Point 5 is another plus. Concerning point 6, the finder does contain much information, but is also lacking some, as I'll explain. Point 7 refers to the fact that one can use old lenses on the very latest model camera due to the changeless mount; needless to say, Nikon and Pentax share this claim. Point 8 refers to built-in

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safety locks which the EL, ES and ST901 all have, to varying degrees. It is thus apparent, then, that Minolta could not find, in naming features, too much that's new to speak about concerning its latest entry. A close look at the XE, however, reveals it to be an excellent camera, but I did want to first look at it objectively rather than merely rave about it.

There is much that reminds one of the Nikon F-2 when examining the XE; the flat pentaprism housing, the memo (film box top) holder on the back of the camera, the overall excellent finish, the high-quality camera back, and the lens release button. The memo holder has a DIN/ASA conversion chart printed inside for reference, if ever necessary.

A growing trend within the industry is to use more and more plastic on cameras. A certain amount of plastic can be a good thing. Take the XE's prism housing, for example. Since it's made of plastic, it can't dent and it offers greater shock resistance. Moreover, from the aesthetic viewpoint, there is no black paint to peel off. Although I welcome a plastic prism housing, I have strong reservations about using a plastic self-timer lever and a plastic on/off switch. After all, a certain amount of force is applied to the self-timer, and the on/off switch will receive a great deal of use. Minolta has assured me that there is no need for concern, and delivered a lengthy talk on the new plastics, which are virtually indestructible. The XE is a middle-weight SLR, tipping the scales at 1,060 gr (37 oz.) with the f/1.4 lens.

Double-duty on/off switch

The Minolta XE has a meter on/off switch which is positioned, and functions, much like the one on the Canon EF. Whenever the switch is set to the "off" position, the shutter-release button is locked and the shutter cannot be fired; this is true, whether in the auto or manual mode. Moving the switch to the "on" position, turns on the juice and unlocks the shutter-release button. The meter needle then rises from the bottom and indicates the shutter speed selected for the aperture already set. The meter still functions when in the manual operating mode.

The finder, as we have come to expect from Minolta, is brilliant and has a small split-image rangefinder surrounded by a microprism collar. Magnification is .84X with the 50mm lens set at infinity, and 94 percent of the film frame area is visible.

Slightly to the right of the ground glass, the shutter-speed scale is visible. Centrally located and above the ground glass, the f/stop is indicated (as in the XK and SR-T102). Next to the f/stop number, however, there is also an "A" visible, which indicates that the camera is in auto operation. After switching to manual, the "A" disappears and the actual shutter speed you set manually on the camera is indicated in the finder. The "A" explains the new "window," which appears on the front of the pentaprism directly above the dotted "i" in the name Minolta; this is the light-intake window which provides illumination for the "A" visible in the finder. Both the shut-

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ter speed (auto or manual) and f/stop are indicated in the finder.

Minolta still continues to rely on Cds Cells in the XE. If we now have a choice of silicon or Cds circuitry, why not switch to the faster-reacting, lower-light-reading silicon? One reason is cost. Another reason, according to Minolta, is that they place reliability above convenience. If they can lick all the problems they still feel are inherent, they'll probably be glad to switch.

It is interesting to note that both the XK and XE, unlike the SR-T101 and SR-T102, do not bear the CLC letters on the pentaprism of the camera. Moreover, the light-meter pattern of the XK tested by the well-known Japanese photo magazine, *Camera Mainichi*, as reported in their "1974 Camera/Lens White Paper," was that of a center-weighted system and not the Minolta CLC (bottom-weighted) system. When I pointed this out to Minolta, they said it was probably due to camera variance, and is not representative. They emphatically stated that the XE does indeed utilize their unique CLC system.

Impressive ASA range

Minolta's metering system has long been noted for being coupled to an impressive range of ASA speeds, and the XE is no exception, coupling to ASA 12-3200. If we make use of the exposure-compensation dial, we can increase the range to ASA 3-12,800. The meter reads down to ½ sec. at f/1.4 with ASA 400 film.

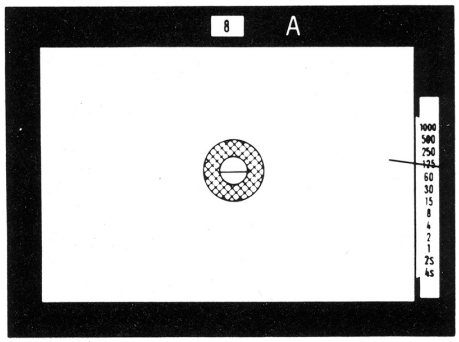
The finder has a built-in blind to protect the system from extraneous light when the camera is used in the auto mode away from the eye. The eyepiece is of the universal type, the same size used by Pentax, Yashica, Canon and Mamiya.

The XE utilizes the new Leitz/Copal shutter, which is said to result in a gentle shutter release, smooth film advance, and a minimum of noise and vibration. I judged the noise level to be low and vibration minimal; and the shutter-release button has a nice feel to it—it only requires a short stroke. The film-advance lever is smooth, but so are those of other camera. I'm not particularly excited by the new shutter, since I could not see any dramatic difference in performance. Sync for speedlight, for example, is only 1/90 sec., something new, however, for a Copal-Square-type shutter is the self-timer with its own start button. That's nice. The shutter offers a range of 4 to 1/1000 sec. on either auto or manual. Of course, the range is stepless on auto. I believe Minolta is employing a sound design. The XE does offer two mechanical shutter speeds, X (1/90 sec.) and B. It is a remarkable achievement that they can run the shutter and metering system on just two 1.5-volt batteries.

On the left-hand side, there is a battery check lamp. A push on the lever results in turning the lamp on. Should the batteries be too weak and the photographer attempt to take a picture anyway, the mirror will raise and lock in place (without the shutter opening) until the photographer switches to a mechanical shutter speed.

The film-advance lever, which I already said is smooth, merely requires a 130° stroke to advance the film; it also has 30° play and is plastic-tipped. In a word, it handles very well. The pentaprism carries a hot shoe with built-in circuit breaker. The sync socket, located beneath the lens release button, is threaded for cords with such a provision. Beneath the socket lies the X/FP switch.

The XE has multiple-exposure provision and is an improvement over the provision found on the XK and SR-T102. There is a lever directly under the film-advance lever which, when moved to the right, allows the user to cock the shutter without moving the film. When the multiple-exposure lever is moved to the right, a small red dot is revealed, which can act as a reminder or warning. After taking a double exposure, the lever automatically returns home. Of course, any number of multiple exposures can be freely taken and the exposure counter doesn't move during multiple exposures. Multiple-exposure provision is part of a very good trend.



A lot of info: Minolta XE finder has central split-image rangefinder, microprism collar, full focusing screen. Auto shutter speeds appear at right, apertures at "A" (for auto exposure) at top.

The XE has an excellent exposure-compensation system, which is really the only intelligent answer to exposure problems on AE cameras. Locking the meter after taking a close-up reading (or using some similar method) is, I think, nonsense, since it defeats the basic design concept of the camera, which is automation. Exposure compensation allows you to shoot quickly and automatically without wasting time locking readings in place. The design of the exposure-compensation dial is basically like that of the Pentax ES; it is a collar around the rewind crank and offers a range of ±2 stops. Of course, intervals such as +1½ can be used. Unfortunately, there is no warning system within the finder to remind the photographer that he has compensated. The ASA dial is connected to the exposure-compensation dial and has excellent click stops. Both the exposure-compensation dial and ASA dial have locks, as does the shutter-speed dial, for the auto position.

A very big mirror helps

The typically large Minolta mirror is said to offer no cutoff in the finder, even when the Rokkor 800 or 1000mm lenses are used. The mirror chamber has the typical baffling on the mirror's underside and on the base of the chamber.

The battery chamber cover is, fortunately, made of hard material, so it should be able to take quite a few threadings and unthreadings without wearing out the coin groove. (But why must manufacturers con-

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tinue to force us to use coins?)

The camera has an unusual film counter at the left of the on/off switch. It has legible numerals, but only every fifth number appears. Above the film-counter window is Minolta's unique "safe load" system. After the camera is loaded with film, an orange bar appears at the left-hand edge of the narrow window and slowly moves to the right-hand edge as the film is advanced. Thus you can tell at a glance whether or not the camera is loaded, how much film is left, and if the film is moving through the camera. It's a nice extra, but do I need it? The film-rewind crank gives me the same info.

The film take-up spool has four slots and covers only half the length of the chamber, making it easy to slip the film into the spool. The XE retains the same depth-of-field preview lever, which also makes it possible to use non-M.C. lenses in stop-down operation.

Conclusion: The XE is unquestionably an excellent camera, and it will probably weaken the position of other automatics on this market.—THE END