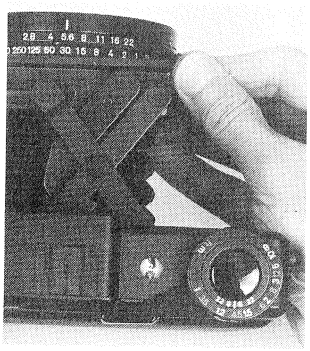
whopping big negative. And although it is a tad front-heavy, it is, by and large, quite well balanced for hand-held shooting.

We've already criticized the focusing a bit, but the wind lever and shutter button must go onto the positive side of the ledger. Ratcheted or not, the former is well placed and fast operating (once you pull it out about ½ in. to operating position), contributing immeasurably to the camera's good rapid-fire capability. Likewise the shutter release is well located, certainly easy to find by feel (it's about ⅝ in. in diameter) and it has a nice, smooth, predictable action. No, it's not a hair trigger by any means, but once you take up its first few millimeters of travel and feel a slight resistance, you *know* it's going to fire with slight additional pressure. This predictability is more important than lightness in getting a vibrationless release.

Unfortunately it is difficult, if not impossible to focus the camera with your right index finger with your right thumb at the ready behind the wind lever—you've got to focus first and wind afterwards. This isn't too important in most shooting situations, but it can put a slight crimp in your rapid-action sequences. As long as we're complaining, we also didn't like the fact that you can fire the shutter with the camera folded. True, it's unlikely that you'll trip the Makina's long-travel release accidentally, but you could forget to open the camera in your

To fold Makina for maximum portability, press button, push lens toward body regardless of distance set.

Pivoted arm in between struts connects lens to rfdr. mechanism, shields shutter-button-to-shutter cable.

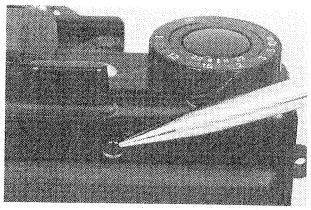


Shutter has full range of speeds set by tab on right. Unfortunately there's no self-timer.

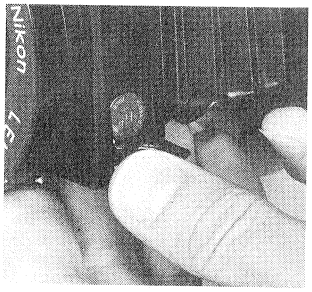
zeal to capture the action (we did once!). On the brighter side, we found the metering system delightfully easy to use. You just perch your left hand under the lens (as you would anyway to support the camera) and rest your left thumb on the aperture-setting tab. As you press the meter button with your right thumb, with your right index finger poised on the shutter release, you just turn the aperture ring until the green signal appears and fire at will. Remove the camera from your eye, and it's easy to get a quick glance at your exposure settings. Remove your thumb from the meter button and the meter turns off, conserving battery power.

This brings us to the lens. We can hardly quibble with its high level of performance. In fact, the Makina 67 most probably qualifies as the finest performing folding roll-film camera ever made in terms of sheer optical performance. But the focal length bothers some people. It is, as we said, a semi-wide angle optic and therefore hardly the optimum lens for portraiture. The camera will focus close enough for "chest-to-crown" portraits all right, but you may get some apparent perspective distortion courtesy of the lens's 60° angle of view. Notice that we didn't say linear distortion—on that score the 80mm f/2.8 Nikkor performs exceptionally well. Why, then, did Plaubel decide on this focal length? Well, like all good designs, the Makina is an integrated group of components which point to an intended goal. The primary goal in designing this successor to a great line of press cameras was to provide a top quality field camera to supplement a pro's or advanced amateur's existing equipment. This determination to accentuate portability obviously limits the size of the focusing and rangefinder mechanisms, among other things, and makes the selection of a semi-wide angle optic a virtual necessity. As it is, the lens must move nearly ⅜ in. forward to focus to 1 m, and remember, this large, sturdy focusing mechanism must be able to collapse entirely into the body.

For general picture taking with the exception of tightly cropped portraits, the latest of the legendary Makinas is a superlative instrument. It handles well, is quiet (as are most leaf-shutter cameras) and under its modern plastic covered exterior lurks a body built like a tank (albeit a lightweight tank). Architectural photographers will appreciate its extremely low level of linear distortion, low-light types will marvel over its sensitive metering system, and pros on the run will commend its rapid, convenient operation



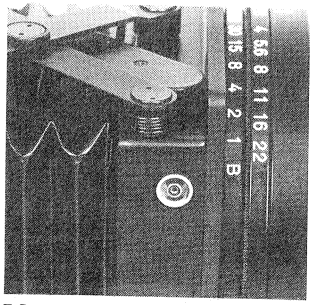
Meter button is placed in ideal spot to be pressed by right thumb. Fact that it's spring-loaded saves battery power.



Battery compartment in left side of lens panel is convenient.

and fine field performance.

Like the Plaubel Makinas of the past, the 67 is an expensive camera with a distinctive personality, and certain obvious limitations. But within those limitations it works amazingly well, and that, in the end, is really what matters most. Perhaps the most endearing thing about it is, that despite its sleek, modern styling, its lineage is evident. It may sport the latest in center-weighted metering systems and parallax compensating range/viewfinders—and both of these



PC contact is on right side of lens panel. Note spring on folding strut just above it.

certainly make it easier to live with—but in the end what it really does is to take a good, solid 19th century concept (the folding roll-film camera) and a good, solid, old-line camera maker (Plaubel) and truly bring them up to date. It is, as they say, an idea whose time has come again, and if the Makina 67 is successful in the marketplace (and we predict it will be) other modern roll-film folders may well follow.

Optical bench analysis: On axis at maximum aperture, we observed moderate red flare and some zonal spherical aberration, but both defects improved noticeably at f/4. By f/5.6, central image quality was excellent. Off axis, toward the corners of the field, we detected a small amount of astigmatism at the astigmatic point (24½° off axis), but lateral color was virtually absent at all apertures. No optical decentering of the lens elements was observed—a sign of careful assembly.

Field test slides: As expected, Ektachrome 64 slides taken with this lens exhibited good sharpness across the field at f/2.8, with central sharpness improving to very good at smaller apertures. Flare was very well controlled throughout (partially attributable to efficient multi-coating), and color defects such as fringing were virtually absent. We were able to notice a slight amount of astigmatism in pictures made at f/2.8 and f/4, but not in those made at smaller apertures. We would rate this lens's overall field performance as good to very good.

RESOLUTION

at 1:23 magnification				
f/no.	Center	Lines/mm	Corner	Lines/mm
2.8	V. Good	41	Good	22
4	Good	46	Good	37
5.6	Excellent	58	V. Good	37
8	Excellent	57	Good	35
11	Excellent	52	Excellent	41
16	Excellent	48	Excellent	41
22	V. Good	46	Excellent	41

CONTRAST

at 30 lines/mm				
f/no.	Center %		Corner %	
2.8	Low	28	V. Low	5
4	Low	42	V. Low	10
5.6	Medium	48	V. Low	14
8	Medium	52	V. Low	16
11	High	52	V. Low	18
16	High	44	V. Low	18
22	Low	38	V. Low	20

250mm f/5.6 MINOLTA MIRROR TELEPHOTO

Lens: 250mm f/5.6 RF Rokkor
Mount: For Minolta SLRs
Filter size: Takes special 39mm threaded filters behind the lens; 62mm front thread
Aperture: f/5.6; f/11 with sup

Continued on page 120

MODERN TESTS

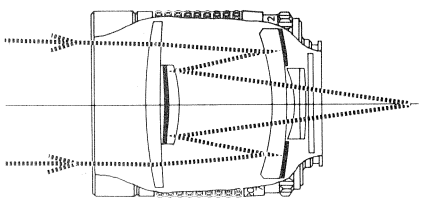
Continued from page 118

plied 4X ND filter
Min. foc. dist.: 2.5 m (8¼ ft.)
Features: Compact, lightweight design with rear-mounted filters, detachable lens shade.
Serial No.: 1003776
Size: 2 11/16 in. diam., 2 13/16 in. long (68 x 71 mm) with Minolta mount.
Weight: 9¼ oz. (262 g)
Price: $380.00 with case, haze and ND 4 filters, and special wrench. Accessory red and yellow filters, $27 each.

Not too long ago, Minolta's optical wizards delivered themselves one of the smallest and lightest 500mm mirror lenses yet seen. Unseen, however, was an even smaller cat—call it a kitten—held in the sleeve of the corporate kimono. Would you believe a 250mm mirror lens weighing less than 10 oz., roughly comparable to a fast 50mm normal lens, with a very respectable f/5.6 aperture?

The 250mm "kitten" contains two mirrors, three correcting lenses and a filter: The formula is quite similar to Minolta's excellent 500mm f/8 mirror. The lightweight, satin-finished black mount focuses from infinity to 8¼ ft. in an exceptionally smooth 210° turn of the rubber-ribbed, 1¼-in.-wide focusing ring. At the closest focusing distance the field coverage was 8½ x 13 in. just about right for a tight head shot. Distances are easily read in feet and meters, marked in green and white.

250mm f/5.6 ultra-compact mirror telephoto is first of its focal length to pass Modern's tests.



Three corrector lenses and two rear-surface (Mangin) mirrors are squeezed into Minolta's lightweight telephoto.

In practice, the tele was a joy to carry and a pleasure to use. Focusing at f/5.6 was easy and decisive. Sharp results were obtained with the lens hand-held at shutter speeds appropriate to the focal length (1/250 sec. and faster). With due care and proper bracing, even slower speeds were satisfactory. The use of high-speed films is desirable to keep hand-held speeds as high as possible. The use of the ND 4 filter supplied with the lens may be necessary with high-speed films in bright daylight, to avoid overexposure. This will, of course, change the effective lens aperture to f/11, requiring more care in focusing. Note that this will not increase the depth of field (or permissible margin of focusing error) since the ND filter changes the transmission only. There is no diaphragm for stopping down.

The rear-mounted filters are interchanged with a special wrench supplied with the lens; an easy operation taking but a moment. The filters are the same ultra-flat 39mm types used on the 500mm mirror Rokkor also available are ND 8 (four stops) yellow, red, and orange optional accessory filters.

Certainly, this Rokkor-X 250 provides photographers with a traveling telephoto with good reach and minimal bulk.

Optical bench analysis: Central point image was bright and compact, showing excellent centering. Slight red-orange flare and a trace of zonal spherical aberration were detected but excellent sharpness and contrast are characteristic. Off-axis, slight red-orange flare, a trace of coma and very slight yellow-red lateral color were seen. Optical performance seemed outstanding overall for this demanding design.

Field test slides: Images were exceedingly sharp, with corners only slightly softer. Contrast could be termed outstanding. Flare was well-controlled—only the slightest yellow flare could be detected around highlights. The only unsharp images we produced were due to camera movement. When shooting a uniformly bright subject, such as the sky, we did notice the 1½ stops falloff toward the corners of the format. However, for most normal, busy scenes, this fall off goes undetected.

This seductively convenient lens is sure to open up long-range telephoto work for a lot of Minolta owners. This is one long telephoto that you're not going to leave at home.

PERFORMANCE

Our Standard	Tested
Focal length: ±5% (237.5 to 262.5mm	252.92mm
Max. aperture: ±5% (f/5.32 to f/5.88)	f/5.32
Distortion: ±3.5%	0.23% (pincushion)
Light falloff: at f/5.6 +1 stop from theoretical limit (0-1.02 stops)	1.50 stops

RESOLUTION

at 1:50 magnification				
f/no.	Center Lines/mm		Corner Lines/mm	
5.6	Excellent	44	Excellent	40

CONTRAST

at 30 lines/mm				
f/no.	Center %		Corner %	
5.6	Medium	44	High	33