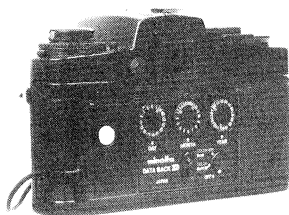


modern tests



Switching backs—Minolta's Data Back D fits precisely on R-4 in place of regular Leicaflex back, is, in fact, identical to Leitz' equivalent except for nameplate.

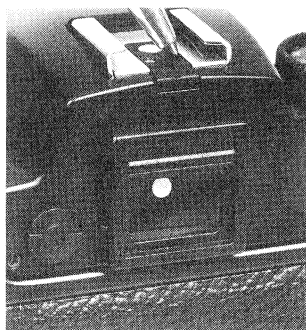
Proceeding to the Motor Winder R4, we find, not surprisingly, spring-loaded gold-plated winder contacts, locating pins, and motor-drive coupling to mate with the camera itself. The winder features a unique coreless motor with an unusual rubber, variable-pitch coupling that matches the drive power to the friction of the film cartridge in use. The motor housing is of die-cast aluminum, with a reinforced tripod socket inset into the bottom for rigid tripod mounting. The winder front carries an extra camera release for high-speed continuous firing (2 fps) an extra front-mounted $\frac{1}{4} \times 20$ socket for the handgrip (which has its own continuous release), and a lever that releases the six-AA-cell battery pack to slide out for battery interchange or remote use. On the bottom, there's an extension for the rewind release lever, which can be switched for motor-driven multiple-exposure use, and a folding captive screw to fix the winder firmly to the R-4 itself. A clever tripod adapter engages in both the front and bottom $\frac{1}{4} \times 20$ sockets to provide a doubly-strong, forward-extending platform to permit better balance with long telephotos and zooms on a tripod. In the back, a screw cap can be removed to expose a five-contact female socket for screw-in remote-release cables and the RC Leica R remote-control unit. Up to 100 ft. of cable can be used for remote tripping with either switching device. An infrared relay or a radio transmitter can also be used. The RC Leica R is an elegant unit featuring LED frame readout so you can keep track of the film supply in your remote camera (up to 99 frames). Users of the announced but not tested 250-frame backs will have to keep track in 99-frame increments. A two-speed intervalometer is built in that will time intervals from 0.5 sec. to 10 min. for time-

lapse sequences. It can also be used as a long-interval delayed-action release for up to 10 min., and for making multiple exposures on a single frame.

Just to complete the picture, an audible beeper lets you know if you've left the motor in multi-exposure mode every time you depress any of the shutter releases.

In use, the winder was commendably smooth and quiet. The solidity of its construction inspired confidence. It is fairly heavy—containing six AA batteries instead of the customary four—so that use of the handgrip would seem desirable both for physical comfort and its relocation of the series release more conveniently to the camera top.

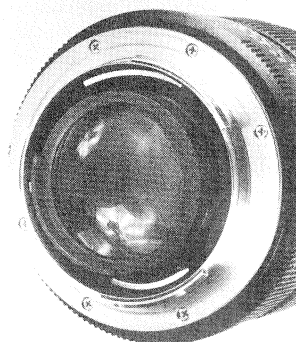
While we found its 2-frames-



Flattened round disk at left of eyepiece turns by thumb pressure, flipping finder blind behind eyepiece (shown by white dot). Puzzling recess in hot shoe hints at an additional flash contact for the future.

per-sec. speed nothing to write home about, the winder's smooth operation and quietness made it particularly unobtrusive. We also felt that a more positive lock on the battery compartment would be helpful; in handling the camera there was a tendency for the battery compartment to come loose and slide out. A piece of tape would be good insurance for the active photographer. It is claimed that 150 36-exposure rolls can be exposed with six alkaline batteries, so this shouldn't be much of an imposition. The serial release on the grip can be locked so inadvertent exposure of a whole roll can be avoided. Without the grip, the series release is exposed but slightly recessed so that accidents are unlikely. The top shutter release of the camera is not protected, though, and a steady pressure from being packed in a soft bag could depress the release long enough to light one or two LEDs and exhaust the battery, as it can with an XD-11. Pack with care to avoid this risk.

In spite of the R-4 winder's instruction that camera batteries must be in the camera to get an exposure impulse while



Back end of Leicaflex lens reveals recessed cams that couple lens to metering system and shutter readouts. There's nothing to bend in rapid lens changing.

the rest of the camera ran off the winder or motor batteries, we found the camera to operate perfectly with the winder (no motor was available for testing) with no batteries in the camera at all. It would be possible, therefore, to remove all camera batteries, pack the camera with the winder or motor attached and the battery pack snapped out and completely avoid the risk of inadvertent battery drain. The winder operates flawlessly with 36-exposure rolls, turning off automatically when the camera winder reaches 36. Pulling out the wind lever turns off the motor and allows manual winding—we were able to shoot one or two extra exposures per roll after the motor turned off. While the manual recommends use of 36-exposure rolls with the winder or motor, we shot 20s without damage to the film. At the end of the roll, a clutch slips, causing the motor to click repeatedly. If you don't stop shooting promptly, a thermal relay turns off the motor. To get started, just pull the battery pack slightly out and then re-engage it.

The 4-frame-per-sec. motor drive was not available for testing. It is scarcely bigger than the winder, being only slightly higher to enable it to take 10 AA batteries in its slide-in compartment. Frame rates of 1, 2 and 4 fps are selected by a sliding switch on the front. Rewind with both is manual. Both share remote control and external battery pack options for sustained cold-weather use, and both are made by Eumig, known for premium quality motor-driven motion picture cameras.

Remove the R-4's lens and you'll see that the mirror box is well blackened (but not ribbed), and a complex lever system provides smooth and precise mirror control. Interchangeable screens are inserted by self-locking spring-loaded tweezers and held by a three-point system for focusing accuracy. The

multicoated reflex mirror is generous in size to minimize long lens image cutoff, and the front of the camera is built out to accommodate the 3.4mm-longer back-focus of Leicaflex lenses. Hinged to the mirror is a glittering, multifaceted Fresnel mirror that reflects a maximum of light to the silicon photodiode in the camera bottom. In all metering modes but A, aperture-preferred selective, and m (manual), the cell leads the full area of the Fresnel screen (see meter diagrams on page 142). In spot-metering modes, an f/1.1, 45mm focal length lens slides in front of the cell to confine its reading to the 7mm circle at the screen's center. Selectivity and sharpness of cutoff are well-handled (see spot meter pattern on page 142).

Leitz does not itself make a dedicated flash to work with the R-4. Braun 370 and 340 units with the relevant SCA R-3 adapters can be used, as can Minolta's 118X and 320X, the Vivitar 3500 and Sunpak 422B with Minolta modules have been tested and OK'd by Leitz. Turn off all flash units before inserting in hot shoe to insure safety of camera electronics.

As a testimony to its confidence in the equipment, Leitz is now offering what it calls the Passport Protection Plan that protects you for two years against anything going wrong with a camera or lens purchased and registered with Leitz after Jan. 1, 1981. That means that Leitz will repair or replace any new camera or lens registered that is broken or damaged for any reason by natural disasters, accidents, even personal clumsiness, provided the pieces are returned to Leitz. It does not, of course, cover loss by theft but your equipment is registered with Leitz' computer bank for even-

Continued on page 148

RESOLUTION

Leitz Summilux-R 50mm f/1.4 at 1:49 magnification				
f/no.	Center Lines/mm	Corner Lines/mm		
1.4	V.Good	49	Excellent	35
2	Good	49	Good	39
2.8	Good	62	Good	49
4	Good	62	Good	49
5.6	V.Good	69	V.Good	55
8	V.Good	69	V.Good	62
11	Excellent	69	Excellent	62
16	V.Good	62	Excellent	55

CONTRAST

Leitz Summilux 50mm f/1.4 at 30 lines/mm				
f/no.	Center %	Corner %		
1.4	high	62	Low	28
2	Med	62	Low	30
2.8	Med	70	Low	36
4	Med	72	high	60
5.6	high	80	high	70
8	high	76	high	70
11	high	68	high	68
16	Med	60	High	56

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MODERN TESTS

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tual relocation. After registering, you get a kit including registration and service cards, a leather wallet and a sterling silver Barnack medal—all of which should help make the formidable investment required to purchase this camera, a lifetime investment in a fine piece of equipment sure to become part of the living legend that is Leitz.

When all is said and done, the R-4 pretty well justifies Leitz's claim—it is a camera that can simply do everything—or almost everything, anyway. While explaining its many options may seem confusing, in practice it is simple and straightforward to use. The system of diodes provides comprehensive and comprehensible information as to what's happening, exposure readouts are fast-acting and not confusing, and the clean-cutting spot reading in combination with on-the-shutter-button exposure "hold" provides great potential accuracy with unsurpassed convenience.

The international meld of Asian electronics with German optics and mechanics has resulted in a professional-grade camera that even a beginner can feel at home with.

Included with the R4 was the latest Wetzlar-made 50mm f/1.4 Summilux-R. The lens is large on the more compact R4 body, a bit heavy, protruding 2 in. with its

collapsible sunshade in closed position, is 2 in. in diameter and taking 55mm screw-in filters. As would be expected in a German-made lens of this calibre, mount construction and smoothness of focusing were superb. A silky 270° turn of the ½ in. ribbed focusing ring takes one from infinity to the 20 in. near focusing distance. Bright yellow English and white metric and aperture figures are engraved very legibly. A short telescoping shade is coupled with the deeply recessed front element to give good protection from sidelight.

Optical bench analysis: In the center of the image field at f/1.4, we saw slight flare and slight spherical aberration, but by f/2.8 it was virtually gone. By f/5.6, the pattern was nearly perfect, approaching diffraction limited performance. Off-axis, wide open, we saw very slight astigmatism and slight purple-yellow flare. By f/5.6, these aberrations were greatly reduced, and gone by f/11. A very slight trace of lateral color was observed throughout.

Field test slides: In our field test transparencies, we found flare to be well controlled throughout, with only small, weak ghosts in evidence even in pictures shot against the sun. Wide open, contrast was moderate, but by f/2.8 results were contrasty across the picture field. As with most high speed lenses, pictures shot at maximum aperture showed good detail but were slightly soft.

TWO RICOH ZOOMS FOR K-MOUNT BAYONET SLRS



LIMITED WARRANTY BY:
Ricoh of America, Inc.
20 Gloria Lane
Fairfield, New Jersey 07006

Lens: 35-70mm XR Rikenon Macro Zoom

Mount: Pentax K bayonet

Filter size: 58mm screw-in

Min. foc. dist.: 10 3/4 in. (0.273m)

Apertures: f/3.5 to f/22

Serial no.: 103746

Size: 2 9/16 in. diam. x 2 3/4 in. long (65 x 70 mm)

Weight: 12 oz. (343 g)

Price: \$277

Lens: 70-150mm XR Rikenon Macro Zoom

Mount: Pentax K bayonet

Filter size: 52mm screw-in

Min. foc. dist.: 24 1/2 in. (0.622m)

Apertures: f/4 to f/22

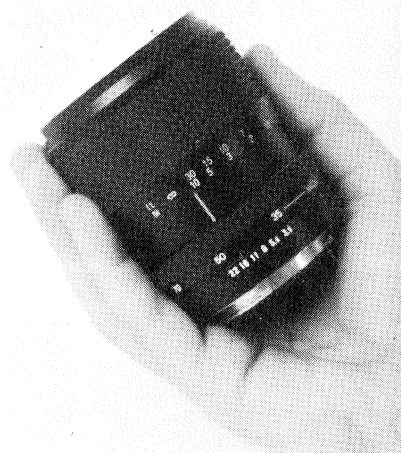
Serial no.: 001122

Size: 2 3/8 in. diam. x 4 1/2 in. long (60 x 114 mm)

Weight: 1 lb. (462 g)

Price: \$295

Herewith contiguous focal length zooms from Ricoh for their own Pentax K bayonet mount SLRs, but equally usable on any K bayonet mount SLR. Both are multicoated, two-touch control (separate rings for focusing and zooming), satin black in finish with



Single touch 35-70mm zoom is compact, provides macro range beyond shortest focal length position.

metal knurled aperture ring controls, and both offer closest "macro" focusing by moving the zoom rings further than their shortest focal length. The seven-element 35-to-70mm lens can provide a close focusing image ratio of 1:42, while the 13-element 70-to-150mm lens reached 1:7. The 70-to-150mm lens has a built-in telescoping lens hood. The 35-to-70mm lens has rubberized, knurled zoom and focusing control rings; the 70-to-150mm lens has a rubberized focusing ring and metal knurled zoom ring. All lens controls worked with admirable smoothness.

Optical bench analysis: At 35mm the 35-to-70mm Ricoh f/3.5 showed slight spherical aberration to f/8, with slight high-order aberrations off axis (toward the corners of the picture) and a touch of astigmatism. This cleared by f/11. Slight lateral color was also seen. At the 50mm focal length

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