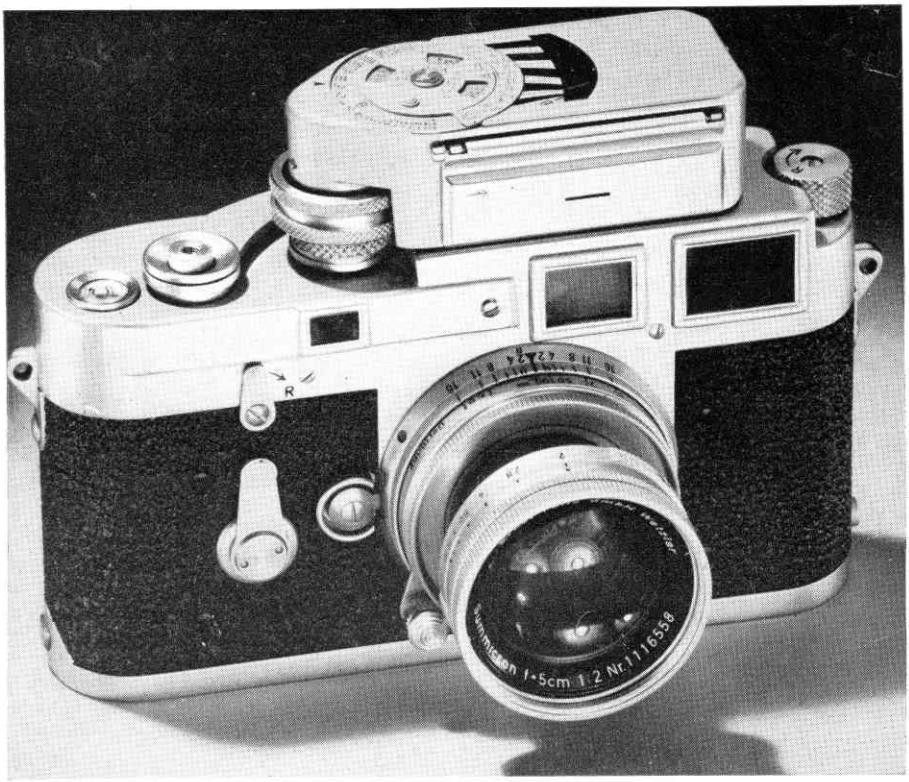
1954 New Leica Equipment Supplement

to the 12th Edition

NEW LEICA MANUAL



New LEICA M 3 Camera with new Leicameter M coupled to shutter speed dial.

WILLARD D. MORGAN **HENRY M. LESTER**

AND CONTRIBUTORS

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THE LEICA M 3

In 1924, when the first Leica was introduced, there was no precedent on which to base its design. In the 30 years from 1924 to 1954 there has been no major change in the basic Leica. There have been several different models, but each model was a modification of the original basic camera.

During these thirty years thousands of Leica enthusiasts, amateur and professional, have voiced their praise and comments. They stated their candid opinions and offered many suggestions for changes in the Leica which would better adapt it to their specific needs. Many suggestions offered were, in the light of available knowledge at the time, mechanically or optically impossible. These thousands of ideas were catalogued, none of them being overlooked. As new and better materials became available, as manufacturing techniques were improved and as knowledge progressed, the fantastic and impossible of yesteryear edged into the realm of reality.

The Leica M 3, introduced in April, 1954, represents thirty years of accumulated research and experience. This is the first basic change since the inception of the Leica, yet the Model M 3 retains many of the original principles which have proved to be soundly conceived. Among these are the operation of its focal plane shutter; rigid camera housing; individual focusing mounts calibrated and matched to each lens, forming a unit of extreme accuracy; flange-to-flange seating of interchangeable lenses, etc.

The Leica M 3 is a new member of the Leica family and does not replace the current models If, IIf, or IIIf. The camera now has built-in versatility previously attained only through the use of accessories. Features of the M 3 are:

1. All scales and controls can be read and set while viewing the camera from the top.
2. Range finder and view finder combined into one eye lens having brighter field.
3. Coupled range finder of longer base for greater accuracy.
4. Both split-image and coincident type range finder.
5. Automatic compensation for parallax.
6. Built-in automatic universal finder.
7. All shutter speeds on one click-stop dial, set before or after winding. Intermediate speeds may also be set.
8. Built-in rapid winder for sequence photography.
9. Interlocking shutter release.
10. Automatic resetting exposure counter.
11. Rapid lens interchange; focal lengths 35 to 400mm.
12. Parallel focusing mounts with click stops and uniform flange diameters.
13. Built-in self-timer variable from 5 to 10 seconds.
14. Cold weather operation while wearing heavy mittens.
15. Full compensating synchronization for flashbulbs or electronic units.

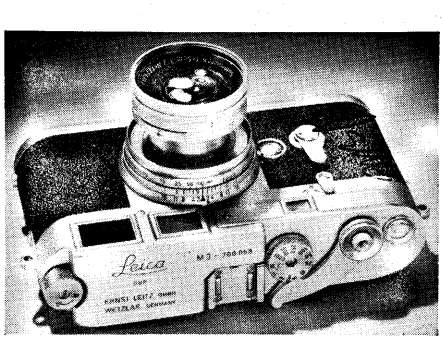
16. Automatic resetting rewind lever.
17. Hinged back for foolproof loading.
18. Glass pressure plate of larger size. Longer precision-ground film tracks.
19. Film-type indicator locking at desired film speed rating.
20. Coupled exposure meter with wide sensitivity range.

The Leica M 3 is as nearly automatic and foolproof as a camera can be made. All scales are read from the top. (The one exception is the film-type indicator, which is located on the back of the camera.) When making adjustments, when reading the footage scale or depth of field, or when viewing the exposure counter, the camera need not be turned around or upside down.

The range-view finder is incorporated in a single eye lens of larger diameter. Greater eye relief is obtained (a distinct advantage for persons wearing glasses), and the field is exceptionally brilliant and clear. It produces an image of near unity, and both eyes may be kept open while viewing, a factor especially appreciated when photographing action. The range finder field is located in the center of the view finder. The image seen in the view finder continues through the range finder area, permitting a two-point reference for split-image as well as coincident range finding. The optical densities of the two images are so adjusted that the intensity increases when the object is in focus. The base length of the M 3 range finder has been increased to 68.5mm for greater accuracy.

At all times there is seen in the view finder a bright-line frame of the sports-finder type outlining the exact coverage of the 50mm lenses. When the 90mm lens is placed on the camera a second bright-line frame outlining the field of that lens automatically appears inside the 50mm frame. When the 135mm lens is positioned on the camera, a bright-line frame showing its exact field replaces the 90mm frame. As the lens is focused, the frame moves diagonally through the field, automatically compensating for parallax.

All shutter speeds, 1 second to 1/1000 including "Bulb," are incorporated in one dial on top of the camera. The dial need

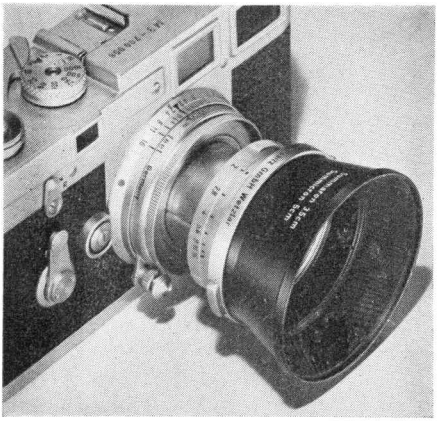


All camera controls are conveniently located and visible from the top of the camera for quick setting. Note new film advance lever on top.

not be lifted, and speeds may be set either before or after the camera has been wound. Marked speeds are indicated by click-stops, and continuous intermediate speeds may be set between 1/50 and 1/1000 second. The dial does not rotate while winding or releasing the shutter.

The film is advanced and the shutter wound simultaneously by pushing the operating lever. Two short strokes are used, rather than one long stroke, assuring a firm grip on the camera and maintaining the finger in shutter tripping position. A series of sequence pictures may be taken without lowering the camera from the eye. Accidental double exposures are impossible with the Leica M 3, but when a lens cap has inadvertently been left in position, the exposure may be salvaged by intentional "double exposure." To wind the shutter of the M 3 without advancing the film, proceed as follows:

1. Lift up the rewind knob and turn counterclockwise to remove any slack in the film.
2. Turn the rewind lever on the front of the camera to "R."
3. Hold the rewind lever in the "R" position with the finger, while at the same time holding the rewind knob (in extended position) with the palm of the left hand.
4. With the right hand, wind the shutter with two strokes of the advancing lever.
5. Release the rewind knob and lever and make the second exposure by pressing the shutter release.



All M 3 lenses accept the same lens hood and screw-in filters. A longer lens hood is available for the 90mm and 135mm lens if desired.

The shutter release is threaded for a standard cable and is set in the center of a saucer-shaped cup, which serves as a soft release. Accidental tripping is impossible, and a safety feature prevents release unless the shutter is fully wound.

The exposure counter beneath the top plate is covered by a magnifying lens for easy reading; when an exposed roll of film is removed from the camera, the counter automatically resets itself to 0 minus 2. When a new roll of film is placed in the camera and the two "safe" exposures wound off, the counter reads 0.

The Leica M 3 incorporates a quick-change bayonet-type lens mount in place of the screw mount on other models, retaining the precision of focusing mount to lens flange seating. Lenses are rapidly interchanged with one hand by pressing the mounting lock with the thumb and turning the lens counterclockwise less than ⅛ of a turn. A lens is inserted by aligning two red dots and turning clockwise.

All lenses that fit directly on the Leica M 3 and couple with the range finder are in bayonet-type mounts: however, by means of adapters, screw-mounting lenses for other Leica models can be used on the M 3. Three adapters are available:

One for the 35 and 50 mm lenses and the Visoflex mirror reflex housing

One for the 90mm lenses

One for the 135mm Hektor

The M 3 lenses in bayonet-type mount cannot be used on Leica cameras having a threaded lens flange.

Lenses in short mounts for use in the directly to the camera and coupling with the range finder are:

35mm Summaron f/3.5
50mm Elmar f/3.5
50mm Summicron f/2
50mm Summarit f/1.5
90mm Elmar f/4 rigid mount
90mm Elmar f/4 collapsible mount
135mm Hektor f/4.5

Lenses in short mounts for use in the Visoflex housing are:

125mm Hektor f/2.5
135mm Hektor f/4.5
200mm Telyt f/4.5
400mm Telyt f/5

The fronts of all lenses fitting directly to the camera (except the Summarit f/1.5) are of the same diameter and require but one lens hood and one set of screw-in filters. There is a second and longer lens hood for use with the 90 and 135mm lenses, giving additional protection, but if the minimum of equipment is desired, the 35-50mm lens hood may also be used on the longer lenses.

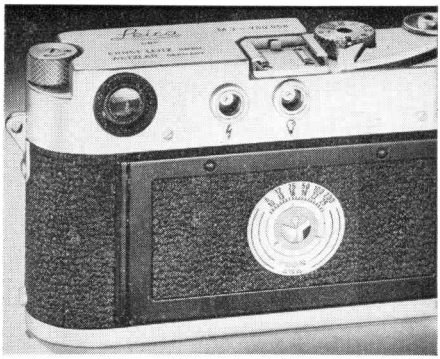
Lenses for the Leica M 3: 35mm f/3.5; 50mm f/2; 90mm f/4 (in rigid or collapsible mount) and 135mm f/4.5. All have new bayonet-type mounts.

A self-timer is built into the front of the Leica M 3 and may be adjusted for any delay between 5 and 10 seconds. It is set by turning the lever to any intermediate position between horizontal and vertical and is operated by pressing a small button immediately above it.

Cold weather enthusiasts will find the Leica M 3 ideal. All controls can be set and the camera smoothly operated while wearing heavy gloves or mittens. The click-stops of diaphragm and shutter speed dial, together with the lever-operated film advance, make it as convenient to use as if the hands were free.

Other synchronized models of the Leica, due to their rotating speed dial, necessitated the setting of a synchro dial for each change in shutter speed. The Leica M 3 has compensating synchronization; the correct time delay sets automatically as the shutter dial is changed. Two synchronizing outlets are located on the top rear, one identified by a lighting symbol for electronic units and short-duration bulbs, the other by a bulb symbol for class "M" and focal plane bulbs. The same flash unit as supplied for the Leica IIIf is employed with the M 3, with the exception of the connecting cord. The M 3 cord is fitted with a socket that may be snapped on in any position and is held firmly by spring clips.

Hinged back permits loading film without tapered leaders. New pressure plate and improved film channels assure film flatness even in extreme temperatures.



Range-view finder window is at left. Flash sockets are for zero-delay electronic flash and Class F flashlamps (left) and Class M flashlamps (right). Below is film-type indicator with film-speed dial.

Loading the Leica M 3 is a pleasure. When the base plate is removed, the knurled knob of the take-up spool automatically pops up for convenient removal. A detachable hinged panel in the back of the camera swings up, exposing to full view the film-advancing sprocket and the engagement of its teeth with the film. Thus it is practically impossible to obtain blanks as a result of improper loading. An oversized swivel-mounted pressure plate made from specially treated glass is located on the hinged cover, and in conjunction with longer precision-ground film tracks holds the film flat regardless of changes in temperature, or any tendency the film may have to curl. A film bar on the hinged cover rides on the edges of the film, assuring positive engagement with the sprocket teeth at all times.

Even when removing an exposed roll of film from the M 3, automatic features are brought into play. It is necessary to place the rewind lever at "R" to rewind the film, but upon inserting the new roll the rewind lever need not be reset to "Advance," as it automatically resets when the first "safe" exposure is made. After loading the Leica, the film-type indicator on the back of the camera is set to the type and speed of film employed.

The M 3 metal magazine for loading bulk film may be used in all models of the Leica camera. Magazines originally de-

signed for other Leicas cannot be used in the M 3. The new magazine for the M 3 is designated as model "N."

The film-type indicator has three sectors:

A *black and white* hash mark for *black and white film.*

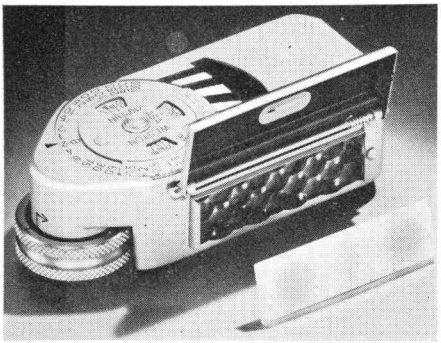
A *red sunburst* indicating *daylight color film.*

Lamp bulb in *red* to designate *color film for artificial light.*

The proper sector may be set opposite its rating in either ASA or DIN.

There are so many new innovations and automatic features in the new Leica M 3 that it is difficult to point to any one of them as the most outstanding. There is one major feature, the coupled exposure meter which assures correct exposure under all conditions.

The Leicameter "M" slips into the accessory clip and couples to the shutter speed dial. In use, the desired lens opening is set, the camera with meter attached pointed toward the object being photographed and the meter dial rotated until the selected aperture is in the sector occupied by the meter needle. The shutter is then automatically set to the correct shutter speed matching the exact light intensity. Inaccurate exposure is no longer a problem. The meter is fitted with a hinged baffle increasing its sensitivity 125 times—or the sensitivity may be increased an additional 4 times by adding a booster cell, giving an overall sensitive range of 500 times. An adapter supplied with the meter permits incident as well as reflected light readings. The meter may be removed from the camera and hand-held if desired.



Leicameter M fits in accessory clip of camera and couples with shutter speed dial.

Rounding out the accessories and complementing the Leica M 3 is a new and attractive eveready case. The case is designed to carry the camera with meter attached and any of the 50mm lenses in extended position or the 90mm lens in collapsed position. The lens hood may be inverted and also carried in the case. The film-type indicator is viewed through a protective window in the rear of the case. In short, the design of the case, together with the many built-in accessories of the M 3, make out of what might have been a cumbersome gadget bag a neat carrying case.

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INSTRUCTIONS FOR OPERATING THE LEICA M 3

Now that we have examined the various features of the M 3 Leica, we can discuss them in greater detail. Each camera comes with a complete instruction book; however, the following condensed instructions for operation will not only be useful if the book is not at hand, but will also give a quick rundown on all the features of the new camera, some of which might be overlooked in the excitement of first handling the M 3.

Let us start by loading the camera.

Loading the Leica M 3

The Leica M 3 may be loaded with the standard film cartridges supplied by all film manufacturers. A new model cassette, known as the Model "N," is also supplied for those who prefer to load their own from bulk film; the earlier Leica cassettes will not fit the new M 3, though the new cassette will operate in earlier cameras.

Before loading, make sure there is no film in the camera. This may be checked by lifting the rewind knob and turning it in the direction of the arrow; if resistance is encountered, the camera is loaded, and the film should first be wound back (move rewind lever to "R" first!) and removed.

Loading is done in essentially the same way as with other Leica cameras except that a tapered film leader is not required. The base plate is removed in the normal way by turning the locking swivel from *Close* to *Open* and lifting it off. Then place the open camera on a table, bottom up, and swing out the back plate as well.

Hold the film cartridge in the left hand and the take-up spool in the right; the extended ends of both spools should be up. Now insert the leader of the film under the spring on the take-up spool, making sure that the uncut edge of the film (if ready-loaded and trimmed film is used) is up against the top flange. The emulsion side of the film should face out on the take-up spool.

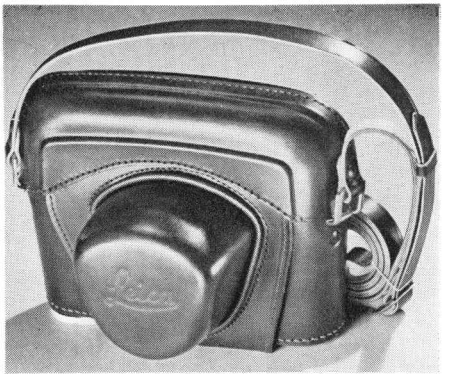
Now pull out enough film from the cartridge so that the cartridge may be inserted in the left compartment and the take-up spool in the right, with the camera bottom up and the lens facing you. Now check from the back to see that the film is on the teeth of the sprocket, close the back plate first, hook the base plate over the pin and swing it shut, and lock by turning the swivel to *Close*.

Now pull up on the rewinding knob and turn it in the direction of the arrow until resistance is encountered. This tightens the film for smooth transport.

Meanwhile, the exposure counter has returned to its initial setting—2 frames before 0 when the take-up spool was removed from the camera. Advance the film by 2 strokes of the winding lever and trip the shutter. Now advance the film again. The counter will now be at 0, and the film will be in position for the first exposure.

To be sure the film is winding, observe the red line in the center of the back-winding knob while winding the film. This mark must revolve when the film is wound ahead.

The film-type indicator on the back of the camera may now be set to the type of film in the camera, as a reminder. Three symbols are provided — black-and-white sector for black-and-white film, sun in a red sector representing daylight type color film, and a bulb in a red sector representing tungsten type color film. Any of these symbols may be turned to face the film speed rating or exposure index of the film used; thus you always know not only what type of film is in the camera, but also its speed, in ASA or DIN values.



Leather eveready case for Leica M 3 holds the camera compactly with the Leicameter M and either the 35mm, 50mm or 90mm (collapsible mount) lens in place.

Setting the Shutter Speed

All shutter speeds from 1 second to 1/1000 second are found on the single dial on top of the camera. The dial has click-stops at the various settings to insure accuracy. It does not rotate when the film is wound nor when the exposure is made; thus speeds may be selected at any time. A "B" or "Bulb" setting is also provided for time exposures.

The groove on the dial between the figures "2" and "5" is intended to engage with the knob of the Leicameter Model M when the latter accessory is used. When the meter is so attached, it automatically sets the shutter speed for the light conditions for a lens aperture determined by the position of the meter needle. Thus a given lens aperture can be chosen in advance; the meter is then aimed at the subject, and the knob turned until the number representing the chosen lens aperture is in the sector to which the needle points. Then the shutter speed will be correct for that particular lens aperture. This convenient method of coupling the meter directly to the shutter speed dial gives easy exposure control.

A ⅛ turn of the bayonet mount allows rapid interchange of all Leica M 3 lenses. The lenses all have parallel focusing movement and rigid seating.

Inserting and Removing Lenses

To insert a lens, simply hold it so that the red dot on the mount is opposite the red dot on the lens locking button immediately to the left of the lens mount. Push it into the camera body and give the lens a short turn clockwise, and it will click into position. Lenses should not be changed in bright sunlight; there is a slight possibility of fogging the film.

To remove a lens, hold the camera in the left hand and press inward on the circular button just to the left of the lens. With the right hand firmly gripping the lens barrel, and the lens locked at infinity, turn the entire lens barrel until the red dot is opposite the one on the body of the camera. The lens may now be pulled straight out.

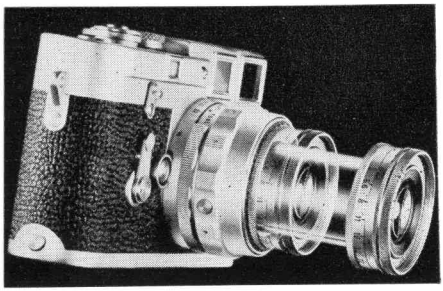
When not in use, lenses not mounted on the camera should be capped front and back; lens caps and dust covers are provided with all Leica lenses.

Lens apertures, focusing scales and depth-of-field scales are the same as those on the corresponding lenses of earlier models; full instructions will be found in the Leica Manual.

The Collapsible Lenses

The 50mm Elmar f/3.5, the 50mm Summicron f/2 and one form of the 90mm Elmar f/4 can be collapsed into the body of the camera by turning the lens barrel to the left and pushing in. To position any of these lenses for taking a picture, simply pull out as far as it will go and turn the barrel clockwise till it locks.

The focusing mount of the collapsible 90mm Elmar will not operate unless the lens is pulled out to its taking position and locked.



Ghost view of 90mm lens in collapsible mount in open and closed positions. Closed, it fits into the eveready carrying case.

The View Finder

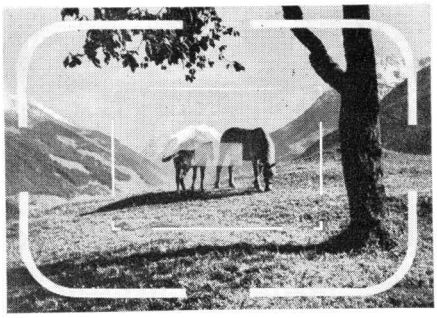
The new optical view finder of the Leica M 3 features a new optical system in which a larger field of view may be seen than is actually covered by the lens in use. The actual field covered by the lens is then outlined in the view finder by a bright line reflected into the eyepiece by a prism device.

This new system of framing has two advantages. First, it is not necessary to place the eye exactly in the center of the eyepiece; even if the image is viewed obliquely, the field of view will be correctly outlined. Second, an automatic parallax-correcting device is incorporated, which shifts the bright-line frame towards the lens axis as the lens is focused on closer distances. Thus the finder always shows exactly what will be obtained on the film, and pictures may be composed exactly, right to the edge of the film.

With the 50mm lens in position, only the outer bright-line frame is seen. When a 90mm lens is inserted, a second smaller frame appears in the center of the field; this frame outlines exactly the field of view of the longer focus lens. Likewise,

when the 135mm lens is attached, a still smaller rectangle appears in the window, outlining its field of view. The parallax compensation works automatically in all cases; no manual adjustment is required either for field size or parallax correction.

If the viewing angle of the view finder were made wide enough for a 35mm lens, the field for the 135mm lens and range finder would be too small for comfort, so no provision is made in this finder for the 35mm wide-angle Summaron. This latter lens is used, instead, with an accessory view finder which fits in the clip on top of the camera.



Combined range-view finder has central bright area for focusing. A bright-line frame shows picture area automatically with each lens and moves for parallax correction.

The Range Finder

As in the earlier Leica cameras, the range finder is coupled to and operated by the focusing lever of the lens. It differs from earlier finders in that no separate eyepiece is supplied; the range finder and view finder are seen at the same time through a single eyepiece and in a single window.

The second image formed by the range finder optics appears in a small rectangular area in the center of the view finder field, and because of the rectangular shape and the large surrounding area it may be used for ranging by either the coincidence or split-field methods. Looking inside the rectangle of light, the image is seen double; on focusing the lens by means of the helical mount, the double images may be fused into one, and accurate focusing is attained when the two images have been fused. It is also possible to focus by observing any vertical line in the subject above and below the range finder field, and adjusting the lens until the second (movable) image in the small area forms a continuous line with the parts above and below the rectangle.

After focusing, of course, you can read the subject distance from the focusing scale of the lens; this is valuable in determining flash exposures by the guide number method, and also in using the depth-of-field scale on the lens.

Taking the Picture

With the lens pulled out into position, the shutter speed and lens diaphragm set, and the focus accomplished with the range finder, all that is left is to press the shutter release, which is located at the pivot of the film transport. This is a "soft" type of release, and only a gentle pressure anywhere on its surface is required to trip the shutter. The film transport cannot be operated until the finger is removed from the shutter release.

Any standard cable release with a tapered thread may be screwed into the threaded hole in the center of the release button if desired. The use of a cable release is especially recommended for long "Bulb" and "Time" exposures; the latter are made with a locking type cable release (or TBI cable) obtainable at any photo dealer. For long exposures, the button of the release is pressed and locked down with the set-screw until the time is up, and then released.

Winding the Film

After the exposure has been made, the film is wound ahead and the shutter is cocked by means of *two* short strokes of the film advance lever. This has been found easier than a single long stroke, which would make it necessary to change the grip on the camera, while a single short stroke would advance the film so rapidly as to risk damaging the film perforations.

The dial of the exposure counter automatically records each exposure as the film is advanced. It has provision for a maximum of 40 exposures, and automatically resets when the film take-up spool is removed for reloading the camera.

When the entire roll of film has been exposed, the transport lever will cease to operate. The film is then wound back into its cartridge for unloading. To do this, set the rewind lever on the front of the camera to "R," pull up the rewinding knob and wind the film back until resistance is encountered. Overcome this resistance by one more full turn of the knob, which will detach the film from the take-up spool and release it from the sprockets.

Then open the camera and remove the cartridge. A small amount of film will still protrude, which aids in keeping the slit light-proof; as a precaution against using this roll again, mark the leader "Exposed" in pencil, or tear off all but a small amount of the protruding leader.

Flash Photography

The Leica M 3 may be used with practically any type of flash equipment and lamp; synchronizer contacts are built into the shutter mechanism, and no accessory contact-making devices are needed.

Synchronization is automatically adjusted for the various shutter speeds and lamp types, and it is only necessary to plug the flash gun into the correct socket on the back of the camera.

The Leitz Flash Attachment may be mounted in the accessory shoe on top of the camera, or in the special bracket with adjustable holder. Connecting cords must be specially ordered for the M 3, since the plugs are larger than those used on other models.

When Class F lamps (SM or SF) are used, the unit is plugged into the left-hand contact socket and shutter set for 1/25 or 1/50 second. The actual exposure will of course be determined by the flash duration of the lamp, in this case about 1/200 second.

Electronic flash ("strobe") lighting units are also plugged into the left-hand socket, and 1/25 or 1/50 second shutter speed settings used. Again, the actual exposure time is determined by the duration of the flash.

When using long-peak lamps (#6 or #31, Press-26 or #2A) the right-hand socket is used. In this case, almost any shutter speed may be used.

Exposure data will be found in the *Leica Manual.*

Other Accessories for the Leica M 3

One set of screw-in filters fits the 35mm Summaron, the 50mm Elmar and Summicron, the 90mm Elmars and the 135mm Hektor. And only two sunshades are needed, one for the 35 and 50mm, the other for the 90mm and 135mm lenses. The lens hoods for all these lenses may be reversed and fitted over the lens for convenient carrying in the eveready case (except the 35 and 135mm lenses).

The new eveready case for the Leica M 3 accepts the camera with any of the collapsible-mount lenses in place, and with the Leicameter Model M mounted on top.

For those who prefer to load bulk film, special cassettes are available for the M 3 which open completely when the base plate of the camera is attached and locked; this avoids any danger of scratching which might take place if the ordinary thin metal film cartridges in which film is supplied by the manufacturer are reused. The cassettes supplied for earlier models of the Leica will not fit the M 3; the M 3 cassettes, however, will fit all the Leica models.

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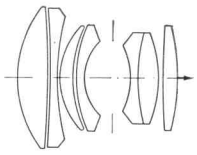
THE SUMMICRON 50mm F/2

The Summicron lens was announced after the *Leica Manual* was published, having in the interim been field-tested. It supersedes the well-known Summitar lens and embodies the latest knowledge and newest material.



Summicron 50mm f/2 lens (left) and schematic diagram of the lens (right). Shown here with screw-in mount.

Development of new types of high refractive glass and superior coating techniques makes possible utilization of air lenses, with consequent better correction and overall performance. The Summicron is exceptionally well corrected for color and flatness of field and is remarkably free of vignetting. Astigmatic curvature of field has been reduced to zero, and spherical aberration and loss of contrast are held to the absolute minimum. A cross section of the Summicron shows 9 elements, 7 glass (only one pair of which is cemented) and 2 "air."

The Summicron is fitted with a click-stop diaphragm and parallel focusing mount, and it is shorter and slightly larger in diameter than the Summitar. The Summicron produces an exceptionally brilliant image, rich in detail, and is a general-purpose lens for both color and black-and-white photography.

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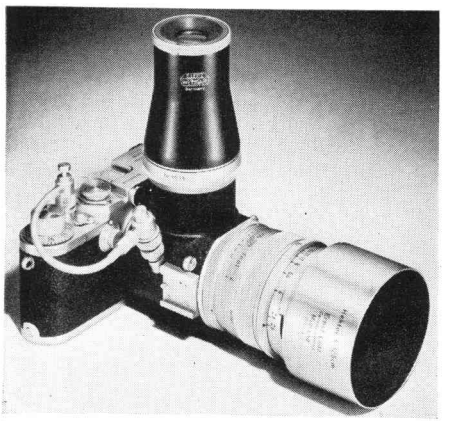
THE 125mm HEKTOR F/2.5

The latest addition to the family of Leica lenses is a long-focus high-speed lens which is particularly desirable both for sports and for portraiture, but photographers will no doubt find many other uses for this versatile piece of equipment.



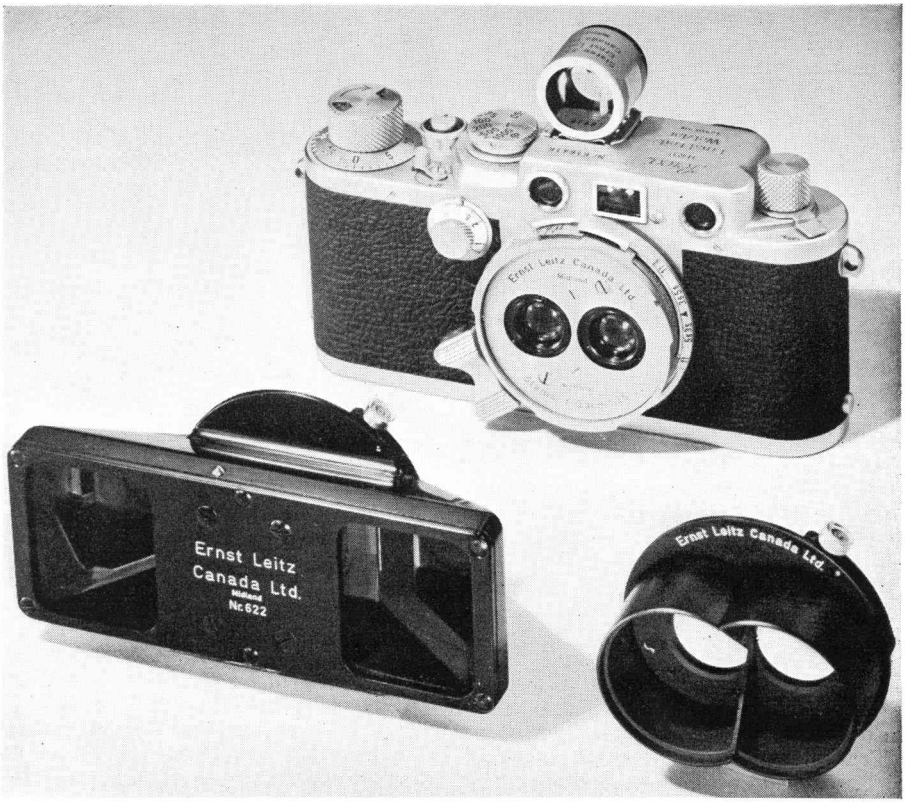
Hektor 125mm f/2.5 lens mounted in Visoflex (mirror reflex) housing and attached to Leica Model 111f camera. Shown with lens hood.

Hektor 125mm f/2.5 lens in short mount for Visoflex housing, complete with lens hood and cap. Also shows hood and cap in place on lens for storing.

The 125mm Hektor f/2.5 is supplied in a short mount intended for use with the Visoflex housing; it does not couple to the range finder of the camera and cannot be used without the Visoflex. Its 125mm focal length provides a magnification of 2½X as compared with the normal 50mm lens of the Leica, yet this is accomplished without loss of speed—f/2.5—a very large aperture for a lens of such focal length. This high speed permits indoor photography with little or no auxiliary lighting equipment.

At full aperture there is just a trace of softness in the image (not blur!) which adds a touch of roundness to a portrait made with it. Stopping down very slightly —to about f/3.2—completes the corrections for needle-sharp definition desirable for sports, nature, theater and landscape photography.

The lens has, as standard equipment, a large lens hood and a pair of caps. For carrying, the back cap is first screwed onto the flange; then the lens hood is reversed and slipped over the lens barrel, and finally the front dust cap is attached. This closes the whole unit into a compact package, which is protected against dust and damage as well as if a separate carrying case were provided.



Exploded view showing Leitz Stemar stereo attachment for 3-D photography with the Leica Model IIIf camera. View finder and close-up lenses shown on camera. Sunshade for close-up lenses is shown (front-right) and prism attachment for distance work (front-left.)

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THE LEITZ STEMAR ATTACHMENT FOR 3-D PHOTOGRAPHY WITH THE LEICA

The new Leitz Stemar attachment makes it possible to take stereo photographs with any model of the Leica camera. The Stemar consists of a pair of Elmar f/3.5, 33mm lenses mounted in a special housing with their optical centers spaced 18.4mm apart. This is a good setting for any subject up to 10-15 feet from the camera and avoids exaggeration of depth in close-up work.

For distant subjects, a pair of special prisms is attached to the unit in place of the sunshade. These prisms are set 72mm apart, which is greater than the interocular of the ordinary stereo camera and gives improved depth to pictures at a distance and a more solid image to objects in the picture.

All lenses and prisms are hard-coated to avoid reflections and to resist scratches and fungus growth in tropical climates.

The two lenses have coupled iris diaphragms with apertures from f/3.5 to f/11. The unit couples to the camera range finder for visual focusing. A single lever focuses both lenses together. An accessory view finder is used to outline the picture field, which is vertical in format, 18 x 24mm

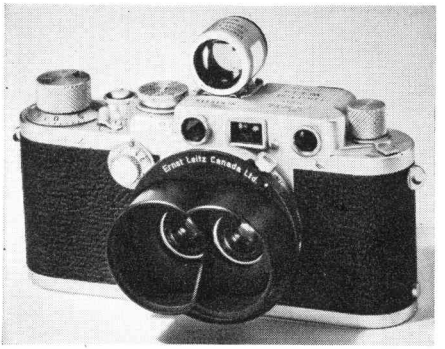
in size on the film, the two pictures appearing side by side in a single 24 x 36mm Leica frame area. The diagonal angle of view of the lens is 47.5°, with or without the prisms.

The special optical finder supplied with the Stemar unit frames the picture in a line of light in a manner similar to the finder on the new M 3 Leica. A small amount of space is visible outside the actual picture area so that moving objects may be tracked as they approach. A dotted line within the bright picture frame allows compensation for parallax when the subject is closer than 15 feet. The dotted line frames the area at 3½ feet, and at distances between this and 15 feet the top of the subject is proportioned between the dotted line and the top of the finder.

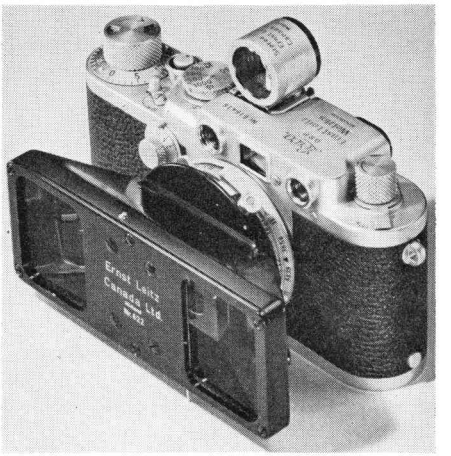
A special twin lens hood is supplied for the Stemar attachment; it gives both lenses maximum protection without cutting into the field of view. It mounts on the attachment by means of a bayonet.

Because of the special format of the Leica stereo picture, conventional viewers cannot be used. A battery-operated viewer especially designed for stereo pairs will be available for use with the Stemar.

In addition, a special twin-lens attachment with polarizing filters will be available for the Leitz Prado projectors, so that the stereo slides can be projected in full 3-D to life size and larger; the audience will wear Polaroid glasses similar to those used for 3-D movies.



Stemar attachment for close-up stereo work, with special sunshade attached. Stereo finder fits in accessory clip.



Stemar stereo attachment and accessory prism housing and optical finder attached to camera, ready for 3-D photography.

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THE LEICAMETER MODEL 2

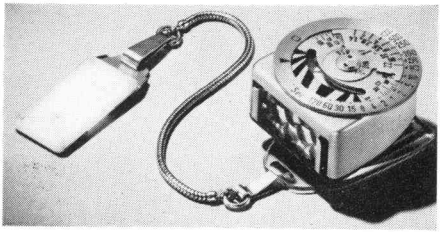
The new Leicameter Model 2 takes the place of the earlier Leicameter, the principal difference being in size. The new Leicameter Model 2 is considerably smaller than the earlier model; yet it has all the sensitivity and wide range of the previous meter.

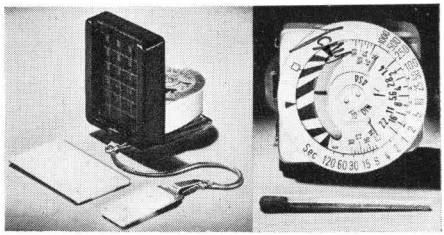
The meter can be carried either mounted on top of the Leica or hanging from the neck strap of either the camera or the case. It may be operated with one hand, and has as accessories an incident-light attachment, a "booster cell" for dim light (also with incident light attachment if desired) and a carrying chain with a plastic clip to hold the meter.

If you have the new eveready case with room in the top for the meter, you may leave it attached at all times. Otherwise, you can carry the meter by hand, on its chain, and with its own leather case.

Using the Leicameter 2

The first step in using the Leicameter 2 is to set the film speed. This is done by lining up the finger on the speed disc with





Leicameter Model 2, miniature photoelectric exposure meter for all Leica cameras, with incident light attachment on chain (left). Supersensitive "booster cell" (center) increases meter sensitivity 4 times. Compact Leicameter is shorter than match stick (right).

the film speed—the left-hand rating scale is in DIN degrees, the right-hand scale in ASA Exposure Indexes. Once set, the finger need not be moved again until a film of different speed is used.

Pointing the window toward the subject causes a movement of the meter needle, just as in any exposure meter. While holding the meter in this position, rotate the shutter speed dial until the triangular black pointer rests in the same channel as the meter needle. That's all. You can now find the correct lens aperture for any desired shutter speed, or, conversely, the correct shutter speed for any lens aperture, simply by reading from the dial.

In reading reflected light, as above, you can work from camera position, provided you point the meter slightly downward to avoid a false reading due to excessive sky light. Or you can walk up close to your subject, take separate readings of the lightest and darkest part, and set the triangular pointer halfway between the two readings obtained.

Incident Light Readings

For those who prefer to read incident light, it is a simple matter to slip the incident-light adapter into the channel in front of the photocell. Then, hold the meter *near the subject* and point it *towards the camera position* and take the reading. This will automatically average all light sources illuminating your subject.

Be sure that you use the opal adapter only when taking incident-light measurements. If it is accidentally left in place during a reflected-light reading, or if it is omitted when an incident reading is taken, incorrect exposure will result.

The Booster Cell or Supersensitive Element

A supersensitive element or "booster cell" is available which multiplies the sensitivity of the meter by 10 times. It is attached simply by sliding it into the same slot used for the incident-light adapter. However, a slight change is necessary in using the calculator with the booster cell: when reading the calculator dial, use the small *rectangular pointer instead of the triangle.*

If, when the supersensitive unit is in place, the meter needle reaches the upper or right-hand four channels, the light is too bright, and the element should be removed and the meter used normally.

Incident-light readings may be taken with the supersensitive element also, and a larger opal adapter is provided with it for this purpose.

Adjusting the Zero Point

To check the zero point of the meter, cover the photocell window completely and note whether the needle rests on the zero. If it does not, take a small screw driver and turn the countersunk screw in the rear of the meter housing until the needle lines up properly with the zero.

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THE UNDERWATER HOUSING

A new underwater housing for the Leica If, IIf or IIIf is now being supplied. It is manufactured to the design of Dr. Hans Hass, by the Akustiche und Kino-Geräte

GmbH of Vienna, and will be available through Leica dealers.

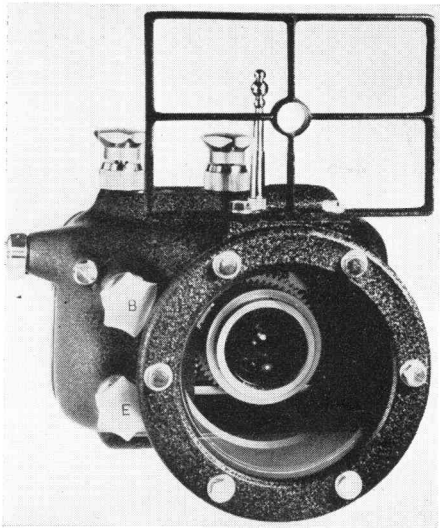
The housing is about 7¾" x 7½" x 9¾" including the frame view finder — 7¾" x 7½" x 7" without it. It weighs 7 pounds without the camera, 8½ pounds with it. Without special pressure compensation, it can be used at water depths to 330 feet.

Four watertight knobs on the outside of the unit are provided to set the lens aperture, focus, and shutter speed, and to wind the film. A pressure-tight plunger trips the shutter.

An open frame finder is provided with a 3-ball sight to allow for parallax at close ranges.

Provision is also made to attach either chemical or electronic flash units to the underwater outfit for work in deep water or in grottos, wrecks, etc.

Full instructions are supplied with the unit, which gives Leica photographers a whole new field of endeavor. Underwater pictures in either black-and-white or color can now be made easily, with the assurance and precision characteristic of all Leica equipment.



Underwater housing for Leica camera has finder and all controls on outside. A direct view finder with parallax marking is on the upright sight.

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ADOX FILM

Adox high-resolution, fine-grain film is not new, but its distribution is new in the United States. It is manufactured by Dr. C. Schleussner Fotowerke, GmbH, Germany, one of the oldest manufacturers of film and photo chemicals. The film is distributed in the United States through Leica franchised dealers and has been made available by E. Leitz as a service to Leica owners. The quality of pictures taken with the Leica is not limited by its lenses, but by the film. By using Adox film, Leica owners will attain the fine results their lenses are capable of producing. Most 35mm film is made for use in motion-picture cameras and has a relatively thick emulsion. Adox has a thin emulsion and is especially formulated for miniature cameras.

Thousands of words have been written about fine-grain film and its development, but little has been said about its resolving power or ability to record fine detail. Assuming the size of the sensitized silver grains to be equal in different films of the same speed, the film's ability to record fine detail is directly related to the thickness of its emulsion layer. The thinner the coating of emulsion that can be put on the base, the higher the resolution of the film; the thicker that coating, the less the resolution.

A given point in the object being photographed will be recorded on the film as an area larger than that imaged by the lens. The detail that can be reproduced on film is limited to the base length of the triangle formed by light penetrating the emulsion. There will also be some scattering of light within the emulsion which will further enlarge the image. If the thickness of the emulsion is reduced, the base of the triangle is shortened and the recorded image becomes smaller. Photographic resolution is therefore a function of not only the lens, but of the combination of lens and emulsion.

Adox 35mm film is panchromatic, with safety base, fine grain, thin emulsion and high resolution. It is available in 3 speeds:

KB-14; Exposure Index 16 Daylight. Emulsion thickness 11 microns. A medium-speed film having ultra fine grain and exceedingly high resolution for critical work.

KB-17; Exposure Index 32 Daylight. Emulsion thickness 13 microns. A high-speed film having very fine grain and high resolution for general photography.

KB-21; Exposure Index 80 Daylight. Emulsion thickness 13 microns. A super-speed film of fine grain and high resolution for general and existing light photography.

Adox film is available in 36-exposure daylight loading cartridges and 50-foot bulk rolls for darkroom loading. It is not difficult to process, but its thin emulsion requires correct exposure and development. Any standard fine-grain developer may be used, and complete time-temperature tables are included with each roll of film. The table below gives developing time in minutes at 68°F for a few fine-grain developers.

DEVELOPING ADOX FILMS

DEVELOPER	*ADOX FILM TYPE*		
	KB-14	*KB-17*	*KB-21*
Ansco Finex-L	8	8	9
Ansco Normadol	7	7½	10
Edwal Minicol	8½	8	9½
Edwal Super-20	9½	10	13½
F-R Super-33	6	6	8
Kodak D-76	6¼	5½	7
Kodak Microdol	8½	8½	10
Panthermic 777	7½	7½	10

Times given in this table are for tank development to γ=0.75 approx.

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