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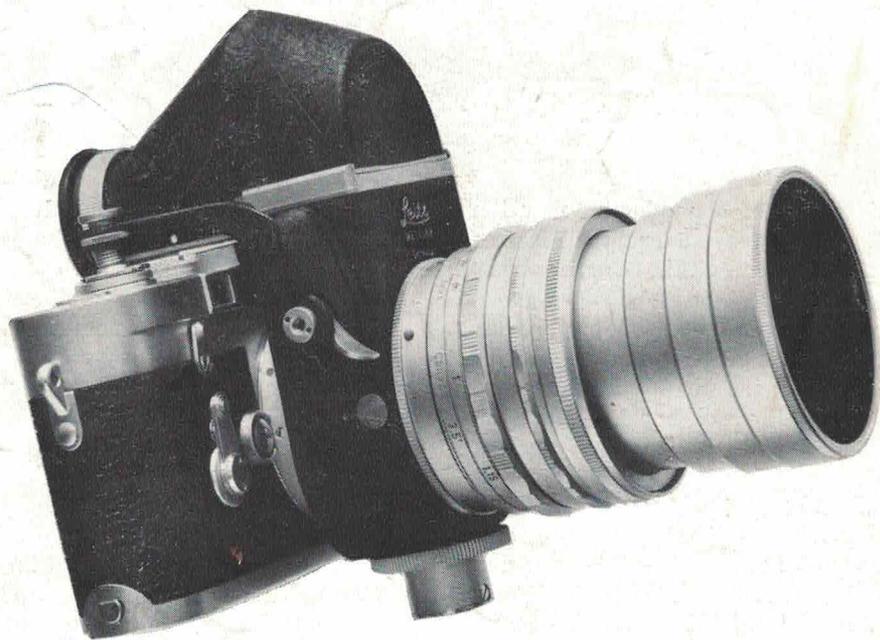
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# THE RANGE OF VISOFLEX II PHOTOGRAPHY

BY RALPH CARROLL

REFLEX SYSTEM WITHIN THE LEICA SYSTEM



## the range of Visoflex II photography / *Ralph Carroll*

reflex system within the Leica System



COMPACT HIGH-SPEED REFLEX CAMERA results when short-mounted 90mm Summicron  $f/2$  and the Visoflex II are mounted on M-3.

With the recent release of a number of new items (including the 65mm Elmar  $f/3.5$  lens) the Visoflex II takes its place as a system-within-the-Leica-system offering the alternative advantages of reflex-groundglass or coupled rangefinder-viewfinder focusing. Focal lengths covering a full focusing range from infinity to up close with the ultra-light, remarkably compact little Visoflex II reflex housing range from the 65mm Elmar to the massive, distance-compressing 400mm Telyt.

A number of Leica lenses (including the new 90mm Summicron  $f/2$  and Elmarit  $f/2.8$ ) may be used either with the Leica's coupled range-viewfinder or (in special short-focusing mounts) with the groundglass of the Visoflex II. Additional macro-mileage may be obtained from a variety of standard- and short-focus Leica lenses which adapt to the Visoflex II for super-close-up applications. And, perhaps most significantly, the new Visoflex II offers the macro and long-lens advantages of reflex-groundglass focusing and composing with a full measure of Leitz precision, ruggedness and reliability—it's part of the Leica system!

### **reflex vs. rangefinder focusing**

The current controversy over the relative merits of reflex and rangefinder focusing makes about as much sense as the argument that pistachio ice cream has rendered tutti-frutti obsolete. The plain truth is that

both systems offer specific advantages and disadvantages, and both have their photographic work cut out for them. Reduced to their essentials, the coupled rangefinder-viewfinder and reflex-groundglass are nothing more than extensions of the human eye employed to achieve accurate lens focusing and framing.

A truly marvelous organ, the normal healthy human eye is, however, optically deficient in a number of important respects. In terms of focusing ability (or inability) it is important to recognize that normal eyes are unable to distinguish image-points having a diameter of less than 1/100 of an inch. Photographically speaking, therefore, an image-point on a print having a diameter of 1/100 of an inch, or less, appears sharp, and anything larger than 1/100 of an inch is recognizably unsharp.

If we consider that an 8x10 print from a Leica negative requires an enlargement of about eight times, obviously the largest image-point we can tolerate on the negative must be no greater than 1/800 of an inch to produce a sharp print-image. And this is far beyond the eye's focusing capabilities with a reflex system when short and medium focal length lenses are involved. Commenting caustically upon this phase of the human condition, von Helmholtz, the great 19th century physicist once said: "If I ordered a lens from an optician and he delivered the human eye, I'd send it back and tell the man to learn his trade."

# THE VERSATILITY OF THE VISOFLEX II

Data is indicated in boxes below as shown here:

|                                |                       |
|--------------------------------|-----------------------|
| focusing range                 | ratio of reproduction |
| area covered at shortest focus | exposure factor       |

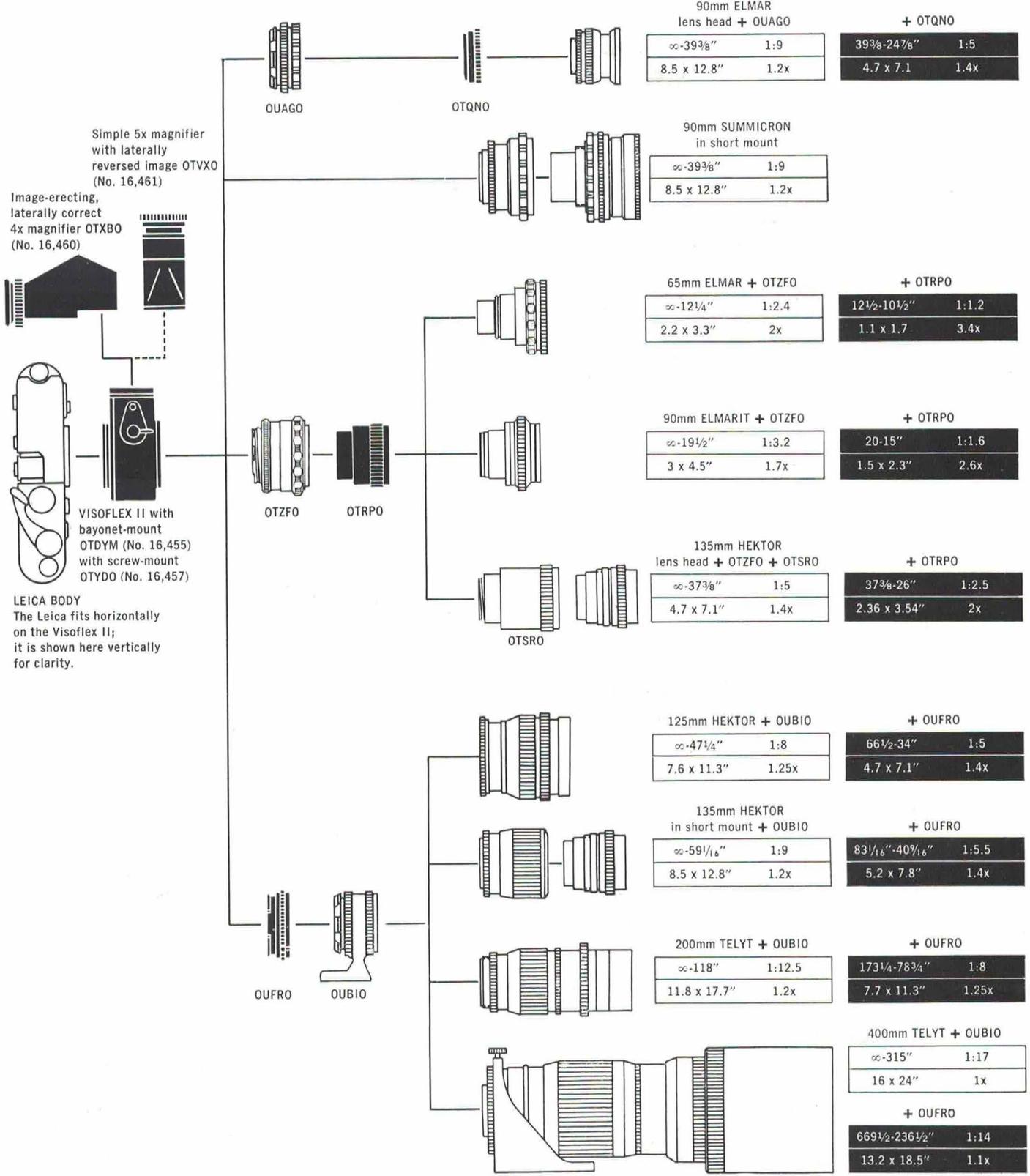
Data in white box applies to lens in use at normal focusing distances.

Data in black box applies to lens in use for close-up range and macrophotography.

Shown in **white** are lenses and lens adapters for normal focusing range.

Shown in **black** are additional extension tubes required for close-up range and macrophotography.

(Figures below are the result of editorial calculation and are approximate.)



Fortunately, there's a better answer, and this is the coupled rangefinder. This makes use of the eye's superior ability to detect angular differences by bringing two identically-sized images of the same object into coincidence. And, when we must deal with very small image-points (*e.g.*, using short-to-medium focal-length lenses at relatively great distances), the coupled-rangefinder is capable of focusing accuracy vastly superior to the reflex-groundglass.

There are, however, two conditions under which the accuracy advantage of the coupled-rangefinder is less important than the advantages to be derived from viewing the parallax-free image cast by the camera lens. These conditions occur when we produce relatively large image-points and reduce visible depth-of-field to a minimum by moving very close to our subject with additional lens-to-film extension, as well as when we employ lenses of relatively great focal length. Under these conditions of reduced depth-of-field and enlarged image-size the reflex-groundglass system is obviously preferable to any other.

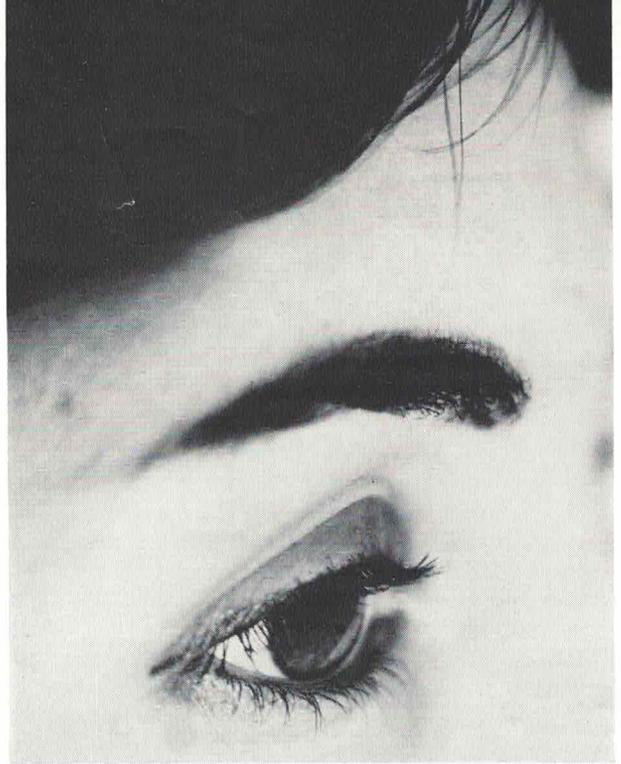
#### **rangefinder or reflex with the same Leica**

These elementary facts of optical life were recognized by the Leica's designers many years ago. So, the Leica's famous close-up systems (*such as the Focoslides and bellows-focusing units*) have always depended upon through-the-lens groundglass focusing, and long-focus Leica lenses have always been provided with accessory reflex-housings (*from which the Visoflex II is descended*) for mirror-reflex groundglass focusing. Long-focus Leica lenses can in many cases be used with either reflex or rangefinder focusing, but wherever only one system is provided, that system is the reflex-housing.

The enjoyment of maximum freedom in deciding whether to use a given long-focus lens with the rangefinder or the reflex-groundglass (or both!) on a single Leica body is one of the most important aspects of the Leica system—especially the Visoflex II system which we will detail shortly.

#### **why two Visoflex housings?**

The Visoflex II, logically enough, grew out of the Visoflex I, a superb technical instrument with certain obvious advantages and disadvantages. Several Visoflex I features account for its greater size and weight, including full-sized square focusing mirror and groundglass which produce a focusing image exactly equal to the size of the Leica negative (Note to Martians: 24x36mm), and a camera mounting flange which rotates through 90° to permit horizontal or vertical pictures without changing the housing or tripod positioning. There is also an automatic inter-



VERSATILE 65mm Elmar does excellent macrophotography as close as 13 inches subject-to-film distance. Additional "plumbing" permits even closer focus.

nal mask swiveling in unison with this camera mounting flange to yield similarly horizontal or vertical groundglass framing.

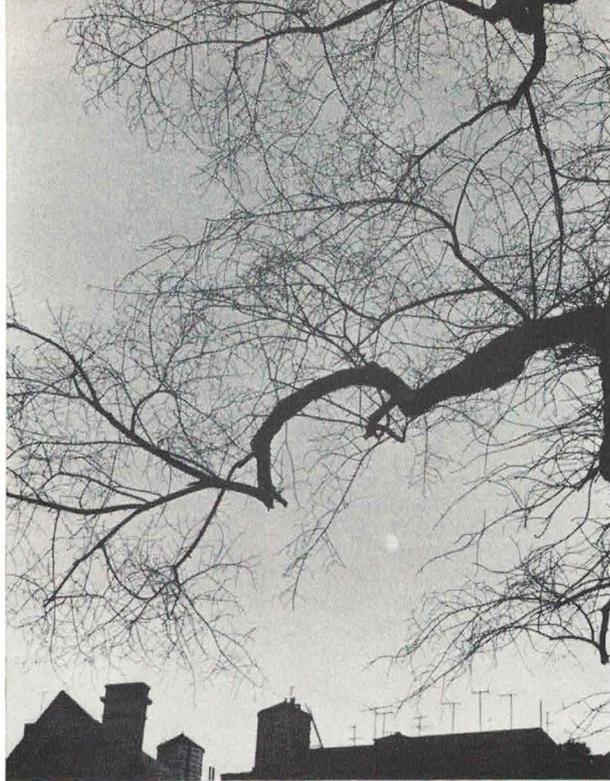
These features, plus an unusually extensive range of accessories, have made the Visoflex I an international standby for workers in many technical and scientific fields. The Visoflex I, it must be emphasized, is still being produced and will continue to be produced. The new Visoflex II comes not to bury Caesar but to supplement him.

The Visoflex I is primarily a tripod-oriented accessory which can also be used in the hand. The Visoflex II is essentially a hand-holdable device which can, when required, be used on a tripod. Almost an inch thinner than the Visoflex I, the model II adds the valuable convenience of a rigid release-bar (*obviating the need for a double cable-release*) and an eye-level prism-magnifier (*as compared to the 45° prism-magnifier PEGOO of the Visoflex I*). Most important of all, however, once the Visoflex II is in position, the Leica becomes an efficient and versatile reflex camera.

#### **some finer points of Visoflex II plumbing**

Because of the rigid mirror-and-shutter release-bar, different Visoflex II's are provided for M-series bayonet-mount Leicas and traditional thread-mount Leicas. Each camera type has a different release-button position relative to the lens-mount, so a thread-mounted Visoflex II *cannot* be accessorized with a bayonet-adaptor for an M-camera because of its differently shaped release-bar.

Two focusing-magnifiers are provided for the Visoflex II. The first, which is normally supplied, is an

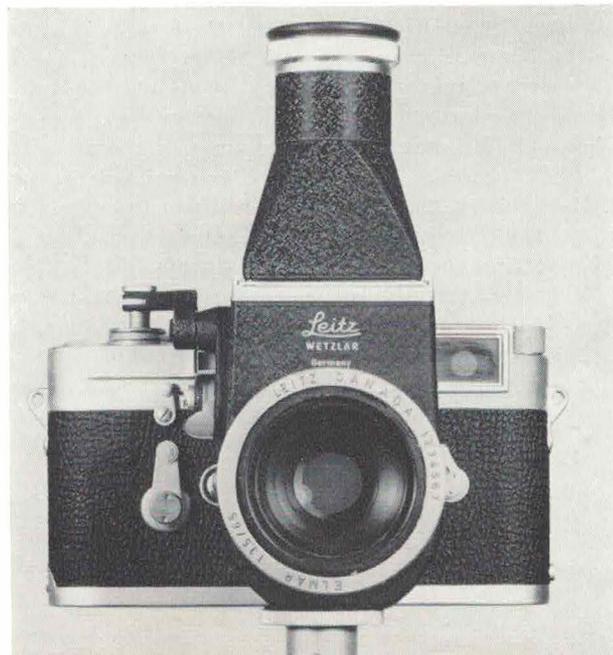


FOCUSING TO INFINITY on the Visoflex II is another feature of the 65mm Elmar making it excellent for all-around reflexmanship with the Leica.

eye-level prism-magnifier that yields an erect, laterally-correct image with a magnification factor of 4X. The extreme brightness of this finder, and the focusing ease afforded by the medium-fine-grain Visoflex II groundglass make this an ideal all-around eyepiece, and a revelation to photographers of the one-eyed reflex persuasion.

For low-angle shots, as well as for many technical and copying applications an interchangeable vertical tube-type magnifier is also provided. This finder, readily interchangeable and fixed firmly to the housing by means of a precise double-rail mount, produces an erect but laterally-reversed image with a magnification factor of 5X. The eyepieces of both units

FOR BELOW EYE-LEVEL work, such as close-ups taken with the aid of a tripod, the vertical 5X magnifier is a useful Visoflex II accessory. Eye-level 4X magnifier is shown at right.



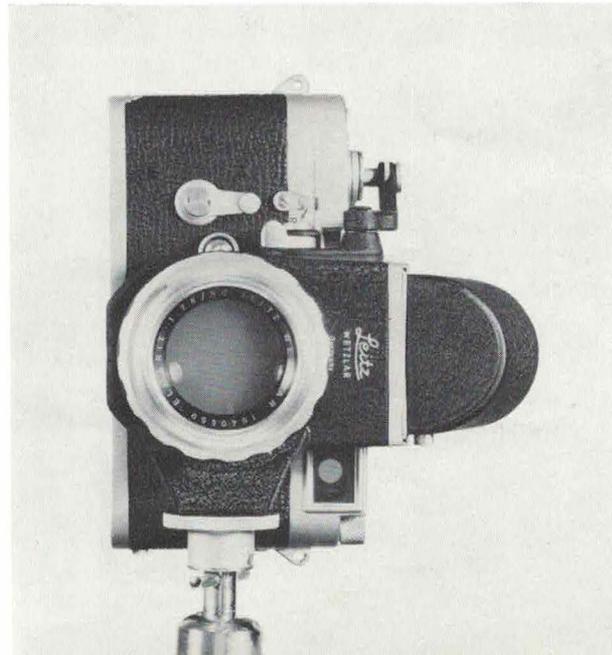
PRECISE SELECTIVE FOCUS is a dramatic potential of high-speed, medium-long lenses like the 90mm Summicron f/2 when used on the Visoflex II.

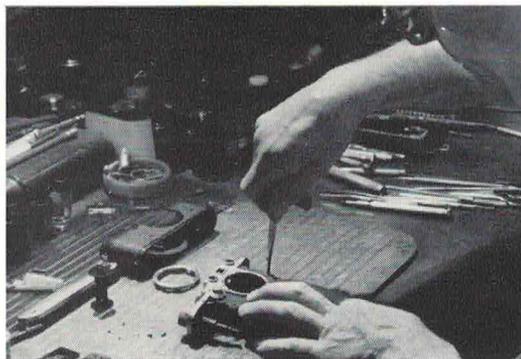
provide adjustment for individual eyesight variations over a range of +1.5 to -2 diopters, and additional correction-lenses are available if required.

The front of the Visoflex II (*both models*) is provided with an M-type bayonet lens-flange which will accept the short-mounted 90mm Summicron f/2 directly. (*A number of 50mm and shorter bayonet-mounted Leica lenses whose rear elements do not protrude back past the lens-mount can also be coupled directly to the Visoflex II. This yields a limited range of extreme close-up focusing. More about this later.*) All other Visoflex II optics require one of three different adapters which are detailed in the chart on page 11.

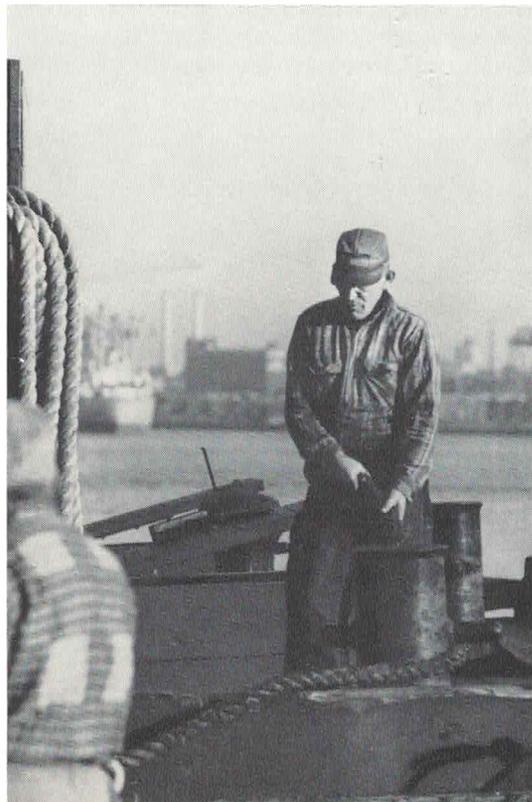
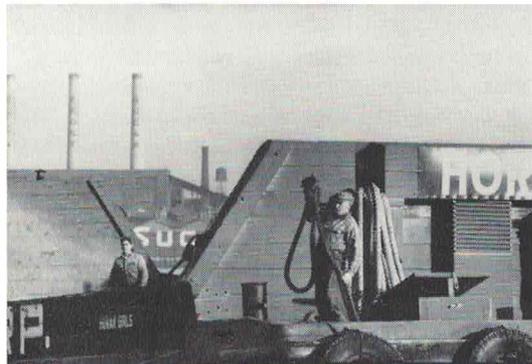
Four focal lengths are accommodated by the

LENS UNITS of 90mm Elmarit and of 65mm Elmar are used with Universal Focusing Mount OTZFO. Same mount, with adapter tube OTSRO, accepts lens unit of the 135mm Hektor.





VERSATILITY (above) is the long suit of the Visoflex II. The Elmarit 90mm lens unit was used in the "long" shot and semi-close-up. Adding extension tube OTRPO permitted the extreme close-up at less than 20 inches.



IMAGES A LA CARTE (at left) are the privilege of Visoflex II users, since lenses from 65mm through 400mm can be focused to infinity on the housing. TOP: 65mm; CENTER: 135mm; BOTTOM: 200mm.

OUBIO adapter (*Catalog No. 16,466*). These are the 125mm Hektor  $f/2.5$ , the 135mm Hektor  $f/4.5$  (*in short focusing mount!*), the 200mm Telyt  $f/4$  and  $f/4.5$  (*see story on the new 200mm Telyt  $f/4$  on page 17 in this issue*), and the big 400 Telyt  $f/5$ . The OUBIO adapter has a tripod connecting foot, doubly-tapped for U.S. and European threadings, which can be rotated through  $90^\circ$  for optional horizontal or vertical Visoflex II positioning.

The close-focusing ranges of these lenses can be extended by interposing one or more double-bayonet OUFRO rings (*Catalog No. 16,469*) between the OUBIO and the Visoflex II. For focusing-range information check the chart on page 15. With the OUBIO adapter in position, a Visoflex II assumes the flange-to-film dimensions of a Visoflex I. And, because this adapter provides the same standard Leica-thread lens-mount as the Visoflex I, it can be accessorized in most of the same ways as can the larger technical Visoflex. For example, the focusing ranges of the 125-through-400mm lenses can be extended by interposing standard double-thread Leica extension-tubes between the OUBIO adapter and the lens.

The 65mm Elmar  $f/3.5$  and 90mm Elmarit  $f/2.8$  lens-heads adapt to the Visoflex II by means of the universal focusing mount OTZFO (*Catalog No. 16,464*). With an additional tube whose Leitz-Chinese name is OTSRO (*Catalog No. 16,472*) the lens-head of the 135mm Hektor may be used with this mount. Thus, a photographer who owns an OTZFO may purchase a relatively inexpensive tube to use the lens-head of his 135mm Hektor on the Visoflex II, instead of having to purchase the more expensive short focusing-mount.

The close-focusing capabilities of the 65mm Elmar, 90mm Elmarit lens-head and 135mm Hektor lens-head can be extended by means of the OTRPO tube (*Catalog No. 16,471*) interposed between the respec-

VISOFLEX II DATA CHART

| LENS                                  | BASIC ADAPTER    | CLOSE FOCUSING ADAPTER | APPROXIMATE FOCUSING RANGE (IN INCHES) <sup>1</sup> | MAXIMUM REPRODUCTION RATIO <sup>2</sup> | APPROXIMATE SUBJECT FIELD COVERED AT CLOSE DISTANCE | EXPOSURE INCREASE FACTOR <sup>3</sup> |
|---------------------------------------|------------------|------------------------|---|---|---|---------------------------------------|
| 65mm ELMAR                            | OTZFO            |                        | $\infty-12\frac{1}{4}"$                             | 1:2.4                                   | 2.2x3.3"  | 2x                                    |
|                                       | OTZFO            | + OTRPO                | $12\frac{1}{2}-10\frac{1}{2}"$                      | 1:1.2                                   | 1.1x1.7"  | 3.4x                                  |
|                                       | OTZFO            | + 2-OTRPO              | $10\frac{3}{4}-10\frac{1}{4}"$                      | 1:0.8                                   | 0.8x1.2"  | 5x                                    |
| 90mm SUMMICRON (short focusing mount) | none             |                        | $\infty-39\frac{3}{8}"$                             | 1:9                                     | 8.5x12.8"   | 1.2x                                  |
| 90mm ELMARIT                          | OTZFO            |                        | $\infty-19\frac{1}{2}"$                             | 1:3.2                                   | 3x4.5"  | 1.7x                                  |
|                                       | OTZFO            | + OTRPO                | 20-15"  | 1:1.6                                   | 1.5x2.3"  | 2.6x                                  |
|                                       | OTZFO            | + 2-OTRPO              | 15-14"  | 1:1.1                                   | 1x1.5"  | 3.6x                                  |
| 90mm ELMAR (lens head)                | OUAGO            |                        | $\infty-39\frac{3}{8}"$                             | 1:9                                     | 8.5x12.8"   | 1.2x                                  |
|                                       | OUAGO            | + OTQNO                | $39\frac{3}{8}-24\frac{7}{8}"$                      | 1:5                                     | 4.7x7.1"  | 1.4x                                  |
|                                       | OUAGO            | + 2-OTQNO              | $24\frac{7}{8}-19\frac{5}{8}"$                      | 1:3.5                                   | 3.3x5"  | 1.7x                                  |
|                                       | OUAGO            | + 3-OTQNO              | $19\frac{5}{8}-17\frac{1}{4}"$                      | 1:2.5                                   | 2.36x3.54"  | 2x                                    |
| 125mm HEKTOR                          | OUBIO            |                        | $\infty-47\frac{1}{4}"$                             | 1:8                                     | 7.6x11.3"   | 1.25x                                 |
|                                       | OUBIO            | + OUFRO                | $66\frac{1}{2}-34"$                                 | 1:5                                     | 4.7x7.1"  | 1.4x                                  |
| 135mm HEKTOR (lens head)              | OTZFO<br>+ OTSRO |                        | $\infty-37\frac{3}{8}"$                             | 1:5                                     | 4.7x7.1"  | 1.4x                                  |
|                                       | OTZFO<br>+ OTSRO | + OTRPO                | $37\frac{3}{8}-26"$                                 | 1:2.5                                   | 2.36x3.54"  | 2x                                    |
|                                       | OTZFO<br>+ OTSRO | + 2-OTRPO              | $27\frac{1}{2}-23"$                                 | 1:1.7                                   | 1.6x2.4"  | 2.6x                                  |
| 135mm HEKTOR (short focusing mount)   | OUBIO            |                        | $\infty-59\frac{1}{16}"$                            | 1:9                                     | 8.5x12.8"   | 1.2x                                  |
|                                       | OUBIO            | + OUFRO                | $83\frac{1}{16}-40\frac{3}{16}"$                    | 1:5.5                                   | 5.2x7.8"  | 1.4x                                  |
|                                       | OUBIO            | + 2-OUFRO              | $59-34\frac{1}{2}"$                                 | 1:4.25                                  | 4x6"  | 1.6x                                  |
| 200mm TELYT (f/4 or f/4.5)            | OUBIO            |                        | $\infty-118"$                                       | 1:12.5                                  | 11.8x17.7"  | 1.2x                                  |
|                                       | OUBIO            | + OUFRO                | $173\frac{1}{4}-78\frac{3}{4}"$                     | 1:8                                     | 7.7x11.3"   | 1.25x                                 |
| 400mm TELYT                           | OUBIO            |                        | $\infty-315"$                                       | 1:17                                    | 16x24"  | 1x                                    |
|                                       | OUBIO            | + OUFRO                | $669\frac{1}{2}-236\frac{1}{2}"$                    | 1:14                                    | 13.2x18.5"  | 1.1x                                  |

<sup>1</sup> All distances are measured from the film-plane. This may readily be located by using the center of the two rear screws in the Leica's accessory shoe as an accurate reference-point.

<sup>2</sup> The maximum reproduction-ratio is obtained by dividing the size of the object by the size of the image. The reproduction-ratio 1:5, for example, indicates that the object is 5 times as large as the image, and the resulting picture is thus a 4/5ths reduction. The reproduction-ratio 1:0.8 indicates that the object is only 8/10 (or 80%) as large as the image, and the picture is therefore a 20% enlargement. Remember, these ratios refer to the image-scale on the negative and will, of course, be increased when the negative is enlarged.

<sup>3</sup> The exposure-increase-factor is used to compensate for the reduction in aperture-illumination caused by extended lens-to-film distance. This factor may be applied either to the shutter-speed, or the lens aperture, or both. With a factor of 1.5X, for example, we could increase our pre-calculated exposure of 2 seconds to 3 seconds, or change our aperture from f/8 to midway between f/8 and f/5.6.

(Figures above are the result of editorial calculation and are approximate.)

tive lens and the universal focusing mount OTZFO. For more extreme macromanship one or more additional OTRPO tubes may be screwed together.

*Worth noting:* a special model of the universal focusing mount OTZFO is available with a tripod-mounting foot which rotates through 90° to provide optional horizontal or vertical tripod mounting without adjustment of the tripod's tilt-head. This model is engraved OTZFO\* (Catalog No. 16,465). If you plan to use your universal focusing mount primarily as a hand-held proposition you're probably better off with the standard model (Catalog No. 16,464) that is not so equipped, relying instead upon the tripod-socket tapped into the base of the Visoflex II itself. But, if you plan to use this mount for a considerable amount of tripod-work remember to specify No. 16,465.

A final focusing mount, the OUAGO (Catalog No.

16,467) is provided to accommodate the lens-heads of 90mm Elmar f/4 lenses, with the exception of older 90-Elmars having serial numbers below 1,572,401 and the collapsible 90mm Elmar f/4 whose lens-head is not removable. (The OUAGO can be factory-fitted to older rigid 90mm lenses, however...*Ed.*) A short extension ring, the OTQNO (Catalog No. 16,468), is provided to extend the 90mm Elmar's close-focusing range, and as many of these rings as are necessary can be used between the 90mm Elmar lens-head and the focusing mount OUAGO. To extend the close-up range of the 90mm Elmar still further, the ring OTRPO may be screwed into the OUAGO Short Focusing Mount. However, to provide necessary finger clearance to adjust the diaphragm, extension tube OTQNO should first be placed into the OTRPO, then the 90mm Elmar lens unit added.

### **super Visoflex II macromanship**

Extreme close-ups can be made with the Visoflex II using various 50mm or shorter focal length Leica lenses. As mentioned earlier, the Visoflex II has an M-type bayonet lens-mount which permits direct-mounting of short focus Leica optics whose rear elements do not protrude back beyond the mounting flange. Others, such as the Dual-Range 50mm Summicron, can be used by first adding extension tube OUFRO (*Catalog No. 16,469*) to the front of the Visoflex. The double-bayonet close-up ring OUFRO can be used to extend the near-focusing distance of such lenses in conjunction with the Visoflex II.

The thing to bear in mind about this kind of short-lens-to-housing application is that the only focusing movement available is that provided by the lens-mount itself. Because this is extremely short (in macro terms) only a very limited range of distances can be covered, and it is necessary to focus by moving the Leica-and-Visoflex II-and-lens combination back and forth as a fixed unit. In an emergency this is a wonderfully effective way to obtain extreme close-ups. And, since any OUFRO owner is fairly certain to own some short-focus Leica lenses, this is a valuable point to file for future use.

Another route to extreme close-in focusing with the Visoflex II becomes obvious when we reconsider that, with an OUBIO adapter, the Visoflex II has the same lens-to-film-distance and threaded lens flange of the Visoflex I. This means that the Visoflex II can be accessorized with Leica extension-tubes and the adjustable Focomount No. 16,611 to bring a great variety of Leica optics, including the 50mm Focotar f/4.5 (*great macro-lens, that!*), into play.

In addition, the availability of M-bayonet adapter-rings designed to permit the use of thread-mounted Leica lenses on M-series cameras, offers a number of other possibilities such as the fitting of the No. 16,611 Focomount directly to the Visoflex II. This permits the use of any one of many thread-mounted, short-focus lenses. Space limitations prevent our giving more data on this subject here, but a complete report on the macro possibilities of the Visoflex II with conventional Leica plumbing will be included in an upcoming issue.

### **optical freedom of choice**

The foregoing paragraphs have presented some rough sledding, but the variety of available mounts and extension tubes with their fetching nomenclature represents a fantastic degree of adaptability and versatility worth knowing about. This information enables the Leicaman to make the fullest use of the equipment he owns, offering a number of optional

solutions to the same problem, and protecting his investment in currently-owned equipment.

Here's how: in the 90-through-135mm range of focal lengths the uniquely versatile Visoflex II system offers the alternatives of rangefinder, groundglass, or both focusing systems. The 135mm Hektor, 90mm Summicron, 90mm Elmarit and 90mm Elmar (*except the collapsible M-Elmar and older lenses with serial numbers below 1,572,401*) are all basically rangefinder-coupled lenses which can be adapted to the Visoflex II. The photographer who's sure that reflex focusing is for him may in several cases save the cost of a long rangefinder mount by starting with the lens in short, reflex-focusing mount. Should he ever change his mind, he can get rangefinder mounts later.

Probably the safest bet, however, is to elect both systems at the outset. A lens like the 90mm Summicron f/2, for example, is a natural for fast-action shots with the rangefinder mount and a superb portrait-producer when short-mounted to the Visoflex II. Incidentally, it's worth noting that the short-mounted 90mm Summicron f/2 may be obtained with a manually preset diaphragm ring for an additional charge of \$12. This worthwhile reflex-focusing aid can be ordered with the lens, or installed later.

Another lens that leads a wonderful rangefinder-and-reflex double-life is the 90mm Elmarit f/2.8 whose lens-head fits the universal focusing mount OTZFO. With the OTRPO extension-tube it becomes an excellent close-up optic, ranging down to about 15 inches for a 1:2 reproduction-ratio. This flexibility in the important medium-tele focal length range actually permits the Leicaman to select not simply the lens but the *focusing system* best suited to the job at hand.

### **the 65mm Elmar; exclusively Visoflex II**

The 65mm Elmar f/3.5 is a 4-element objective of the traditionally successful triplet type that has been specially designed for Visoflex II users who wish to bridge the gap between a 50mm rangefinder-coupled lens and the 90mm focal length which would otherwise be the shortest lens adaptable to the Visoflex II with a full focusing range. In the OTZFO universal focusing mount it ranges from infinity to approximately 12¼ inches (subject-to-film-plane), while the addition of one OTRPO tube brings this down to only 10½ inches.

The 65mm Elmar's optical correction has been computed for uniformly excellent resolution, contrast and resolving power over the full distance range. Physical features of the Elmar 65 include a manually-preset diaphragm ring and a recessed front which eliminates the need for a separate lens-hood.