THE ROMANTIC LENS

SOFT-FOCUS RENAISSANCE

BY DAVID BROOKS

Soft-focus lenses have had an established place in photography for almost as long as cameras have been used to make portraits. Their popularity has waxed and waned with the vicissitudes of portrait style. Until recently they have been virtually unobtainable for roll-film cameras, and we are just coming out of a period during which only one major lens maker has offered a soft-focus lens for large-format cameras. Currently two brands are available for the latter; both are offered in several focal lengths for different-size sheet-film cameras. And now the selection has dramatically expanded with the introduction of two new soft-focus lenses for different 120-size cameras, as well as soft-focus lenses from two popular 35mm camera manufacturers.

The up-and-down history of soft-focus lenses is due in part to their being tied so closely to portraiture, a less-than-ideal marriage. Even Leitz, for instance, renowned for superbly sharp lenses, offered a soft-focus lens some years ago in response to a boom in 35mm portraiture in Europe. The popularity of soft-focus lenses has also been hampered by the name itself, which has been associated with fuzzy images and poor resolution. Consequently, all but a few maverick photographers have been ignorant of the true performance capabilities of soft-focus lenses and their potential application to a diversity of photographic subjects. So let's go beyond the name barrier and discover just what a contemporary soft-focus lens is, how it works, and what it can do for you.

LENS CONSTRUCTION

All modern soft-focus lenses are designed to provide the same basic functions as normal lenses. They are color-corrected and have coated lens elements, a diaphragm to adjust the aperture, and full optical correction for focusing a subject image (curved field) onto the flat field of the film plane without apparent distortion. The "soft-focus" effect they achieve is in addition to normal lens functions and is accomplished by the controlled introduction of optical aberrations. The effect is usually greatest when the lens is at full aperture, and disappears entirely at small apertures, where there is image resolution comparable to that of a normal lens. Some of the recently introduced lenses can be used as normal, sharp-focusing lenses at all apertures, with the "soft-focus" effect operating only by means of a separate adjustable control.

The soft-focus lenses available today are of two basic types. One achieves its effect by the introduction of varying amounts of optical aberration, usually spherical. In this design, one group of lens elements is mounted in a separate helical focusing barrel so that their distance from the rest of the lens elements can be varied. Though the other design type may also incorporate some optical aberration, it achieves most of its "soft-focus" effect by the use of a special supplementary aperture disk. These disks serve the same function as the diaphragm, limiting the size of the lens opening, but they have more than one aperture. The single large aperture in the center of the disk is surrounded by a number of smaller apertures that focus a low-level image slightly off center, overlapping the primary image focused by the central aperture. Soft-focus lenses of this design are supplied with a selection of disks that have varying specific f-stop values and degrees of effect. In addition, the normal diaphragm of this type of lens can be used to decrease the effect of any particular disk and modify the effective aperture to decrease the amount of light passing through the lens.

THE "SOFT-FOCUS" EFFECT

The effect of a soft-focus lens is not the same as the effect of a normal lens out of focus; nor is it the same as the effects achieved by various kinds of diffusion filters used over normal lenses. A soft-focus lens, like a normal lens, has several elements in groups that bend the light rays entering the lens to focus a three-dimensional, curved-field image onto a flat film plane. Detail is defined with sharp resolution, without distortion of the relationships of vertical and horizontal lines, and without distortion of the

1. This photograph was taken using a Fujica AZ-1 with Fujinon-SF 35mm f/4 lens on Kodak Kodachrome 64 Film.

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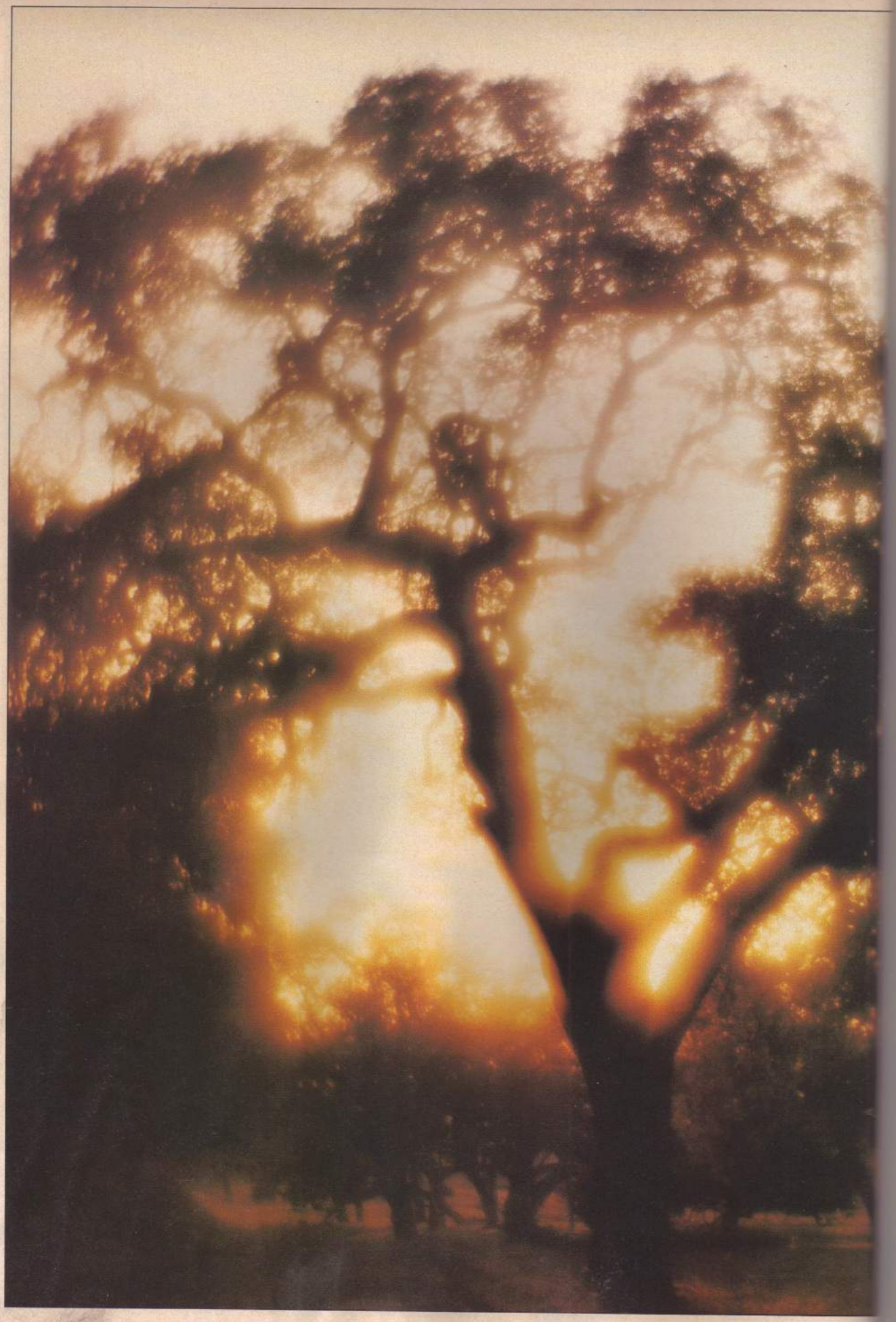

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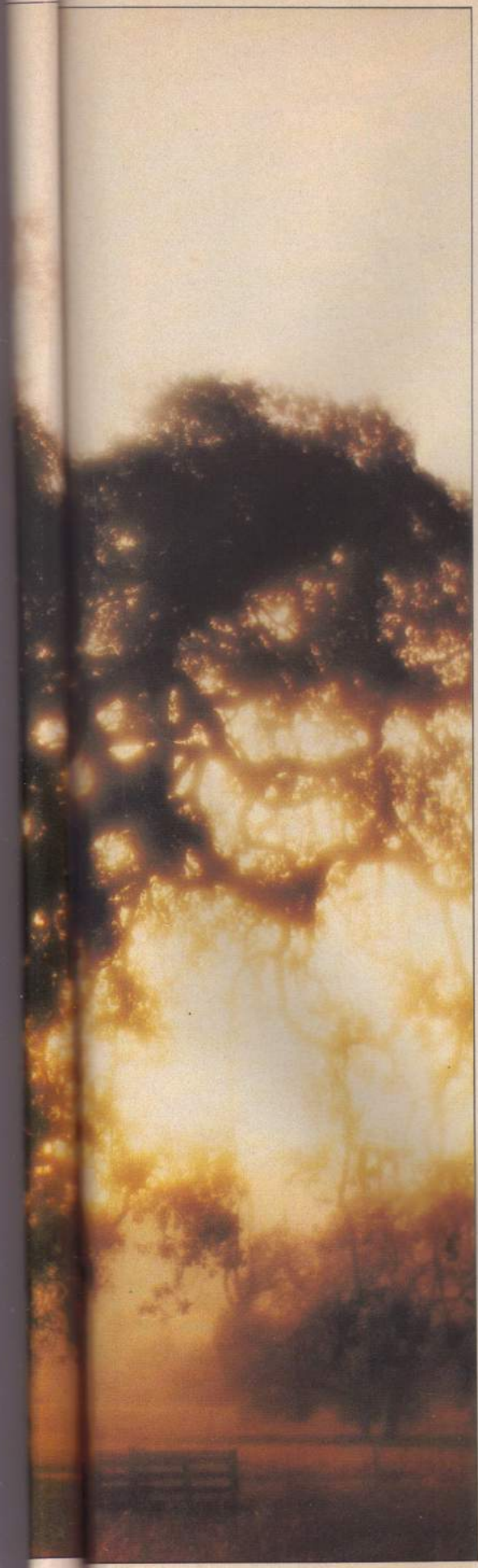

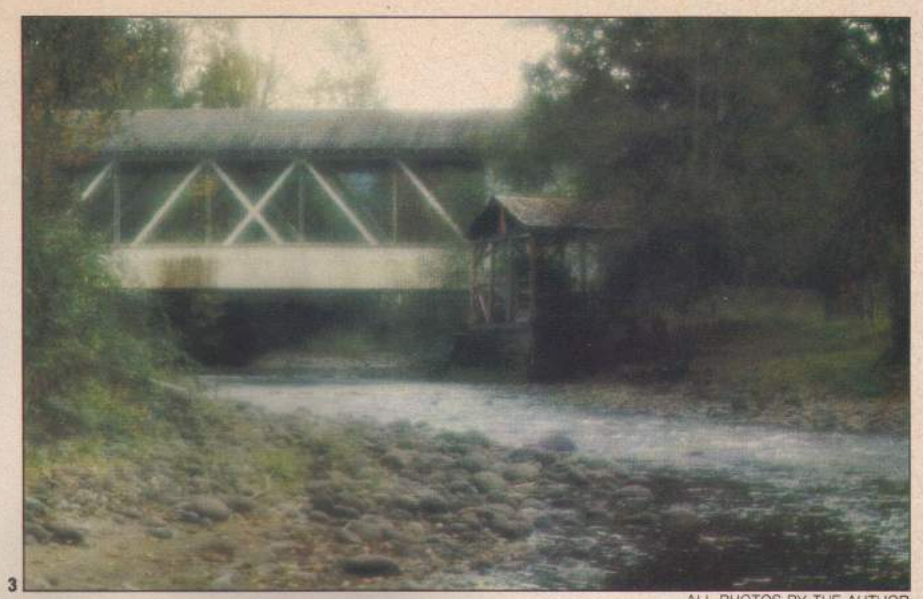

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ALL PHOTOS BY THE AUTHOR.

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2-6. These photographs were taken with the following camera/lens/film combinations: No. 2, Omega view camera with 200mm Rodenstock Imagon lens, at full aperture without disk, on Kodak Vericolor II Type S Film; No. 3, Minolta XG-7 with Minolta Varisoft Rokkor-X 85mm f/2.8 lens on Kodak Ektachrome 400 Film; No. 4, Topcon Super DM with Topcor Macro 58mm f/3.5 lens on Agfa Agfachrome 100 Film; No. 5, Canon F-1 with homemade soft-focus lens constructed of Tiffen Photar Plus 10 close-up attachment lens and multiple-aperture disk with f/6.3 aperture, photographed on Afga Agfachrome 100 film (Nos. 4 and 5 contain similar subject matter to illustrate difference in effect); No. 6, Mamiya RB67 Pro S with Mamiya-Sekor SFC 150mm f/4 lens on Kodak Ektachrome 64 Professional Film.

relationships and focus of the colors in the subject. The "soft-focus" effect modifies only a portion of the image passing through the lens, usually affecting only the lighter tones of the image to create a limited flare immediately adjacent to highlights. This function becomes apparent when a small, bright highlight in a subject is surrounded by a much darker area, creating a soft halo around the image highlight focused on the film plane; and it is most noticeable with the multiple-aperture disk-type soft-focus lens.

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The large central aperture of the multiple-aperture disk focuses a large amount of the light reflected from the subject relatively sharply onto the film plane to cause what alone would be a slightly underexposed image. Each of the many smaller apertures surrounding the central disk focuses the same relatively sharp image onto the film plane just slightly out of register and overlapping the image cast by the large aperture. By itself the amount of light cast by each secondary aperture is so low that it probably wouldn't even register on film. When added to the exposure received in the highlight and midtones through the large aperture, slightly more exposure is recorded. Combined together, all the images focused by the ring of small apertures still produce much less exposure than the main one.

The slight overlapping of images focused by the small apertures smooths and blends light-tone areas and causes some tonal gradation from highlights into adjacent darker tonal areas. But because the aggregate exposure caused by the small apertures is so much less than the central large aperture, it is still too slight to be recorded by the film in the dark-tone image areas. Thus the fine detail of shadows and dark lines in a subject are resolved sharply by soft-focus lenses, providing well-defined image information that would not be found in an image that was simply out of focus.

A soft-focus lens, then, functions selectively to primarily affect the light tones in an image. By contrast, a diffusing device placed in front of a lens to create a "soft-focus" effect involves optical diffraction of light rays reflected from the subject, breaking them up indiscriminately *before* they enter the lens. A soft-focus diffusion filter placed over a normal lens, for the purpose of effectively smoothing and softening the light tones in an image as would a soft-focus lens, has an almost equal effect on all tonal levels in the image. It degrades the definition of darker detail and provides substantially less image information.

Even if diffusion filters did produce the same effect as a soft-focus lens, you would need a huge selection of diffusion filters of various types and strengths in order to produce the continuous range of effects provided by the different multiple-aperture disks or internal aberration adjustments (combined with the variations produced by using different lens diaphragm settings) of a single soft-focus lens. The soft-focus lens is an extremely flexible, essentially self-contained tool that provides an easily adjusted range of effects, or no effect at all when used as a normal short telephoto.

USES OF SOFT-FOCUS LENSES

The soft-focus-lens effect is ideally applied to many kinds of portraiture to flatter the subject and reduce the need for retouching the imperfections of a less-than-flawless complexion. In addition, when combined with appropriate lighting, setting and costuming, a soft-focus lens can enhance the photographer's efforts to create a romantic or nostalgic mood in a portrait.

The suitability of soft-focus lenses to portraiture is natural; it is their primary design function. Even so, they need not be limited to portraiture. Any subject that elicits an emotional

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7. The Minolta 85mm f/2.8 Varisoft Rokkor-X lens is a multipurpose soft-focus lens with adjustable softness control. It is fully corrected and has six elements in five groups; it functions as a normal short telephoto when the softness control ring is set at zero. The softness control introduces spherical aberration at apertures between f/2.8 and f/5.6. The lens may be used on all current Minolta cameras as well as on most older models and accepts standard 55mm screw-in filters.

8. The Fujinon-SF 85mm f/4 is a short telephoto lens with a variable soft-focus effect between f/4 and f/8. The lens incorporates a multiaperture disk in addition to a normal diaphragm and a special focusing collar that aids in the adjustment of the focus plane slightly in front of the subject to achieve ideal soft-focus effects. This lens can be used on all Fujica cameras and all other cameras using a universal screw mount of the Pentax-Praktica type. It accepts 49mm screw-in filters.

9. The Mamiya-Sekor SFC 140mm f/4 is a soft-focus lens designed for use on the Mamiya M645 camera. It has an adjustment ring that introduces a softness effect in variable degrees between f/4 and f/8. From f/8 to f/32 it functions as a normal, sharp-focusing short telephoto. The lens has seven elements in five groups and accepts 77mm screw-in filters.

10. The Rodenstock Imagon lens is currently available in focal lengths of 200mm, 250mm and 300mm, and may be used on cameras with film sizes from 2¼x2¼ to 5x7. The Imagon is a two-element lens that uses unique multiple-aperture disks in front of the lens elements. These disks are designed to allow the adjustment or complete closing of the secondary apertures surrounding the main one. The lens also has a normal iris diaphragm for additional control of the effective aperture of each disk to adjust exposure and vary the softness effect. With each lens a 4X neutral density filter and lens shade are supplied. The lenses are available in a barrel mount or with one of several different shutter brands. The Rodenstock Imagon is distributed by Berkey Marketing Companies, Inc.

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response of romanticism, sentiment, nostalgia or fantasy can often be brought closer to the way it's seen in the mind's eye when photographed with a soft-focus lens. Landscapes and nature are especially popular choices for soft-focus treatment. A soft-focus lens can add a softened glow to the image, bringing into play the feelings that are as much a part of seeing as objective vision.

PHOTOGRAPHING WITH A SOFT-FOCUS LENS

Using a soft-focus lens involves the same basic procedure as is followed when using any other kind of lens. Focus and aperture-setting operations are fundamentally the same. Soft-focus lenses are most effectively used, however, when consideration of their *differences* from normal lenses (apart from the additional controls offered for adjusting the degree of effect desired) is taken into account.

Adjusting the diaphragm to effect different apertures with any lens controls both the amount of light that can pass through the lens and the lens' effective depth of field. Though these functions are the same for both soft-focus and normal lenses, the effect of soft-focus lenses varies in response to the use of particular aperture settings. It is an advantage, therefore, to focus these lenses at the aperture at which the exposure will be made. With most single-lens reflex cameras this means using a depth-of-field preview device, a feature not available on all camera models. Focusing at the exposure aperture serves two purposes: It ensures accurate focus and shows in the viewfinder how the subject is rendered by the soft-focus effect. With soft-focus lenses the plane of critical focus can be deceptive. An ideally focused image usually places the plane of sharpest focus just slightly in front of the subject.

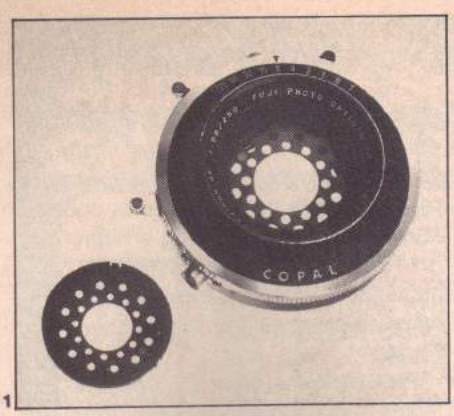
Focusing aids incorporated in many focusing screens of single-lens reflex cameras are of little value with soft-focus lenses, so practice in using the groundglass portion of the screen is a must. An optional plain groundglass is preferable for both easier focusing and better visualization of the lens effect. In fact, it is well worth changing the focusing screen on cameras with interchangeable screens.

EXPOSURE

The basic principles that govern exposure control apply equally to soft-focus lenses and to normal types. Built-in, through-the-lens metering is a distinct advantage because the meter sees just what the lens sees, including lens effect on the image. Cameras with aperture-priority-type automatic exposure offer the advantage of continuous shutter speeds adjusted exactly to the light level provided by a specific lens aperture, allowing the aperture to be set purely on the basis of the desired effect. Whether using automatic exposure control, a manual built-in meter, or a handheld meter, the usual compensations for subject variance (caused by unusually light or dark backgrounds or backlighting, for example) are also required with soft-focus lenses.

The determination of a "correct" exposure may not provide an ideally exposed image with every soft-focus lens. The qualities imparted to the image may very likely be enhanced by a degree of either over- or underexposure. A backlit scene of flowers, for instance, could be more effectively and pleasingly rendered in the pastels of slight overexposure, while a woodsy landscape might be better rendered in the muted tones of a low-key image due to slight underexposure. Until considerable experience is gained with a soft-focus lens, it is a good idea to bracket exposures in order to provide a good selection of image variations.

A secondary effect on exposure and image qualities can come from lens flare, which soft-focus lenses respond to more dramatically than normal lenses. This is particularly true when wide apertures and extreme soft-focus effects are used. Lens flare, which results from unwanted light entering the lens, can be avoided by careful shading. Even extremely bright background light can cause the same effect as flare and drastically reduce image contrast. Again, focusing and composing at the aperture to be used to make the shot provides a preview of the flare effect. Sometimes a flared image on the groundglass may look attractive; the reduced contrast may help create a high-key effect by



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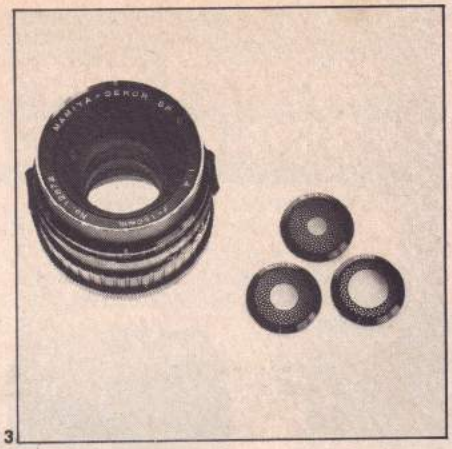

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11. The Fujinon-SF lenses for large-format cameras are available in three focal lengths of 180mm, 250mm and 420mm, with maximum film sizes of 4¾×6½, 8×10 and 11×14, respectively. The 180mm is supplied in a No. 1 Copal shutter, the 250mm in a No. 3 Copal shutter, and the 420mm in a barrel mount. These lenses are constructed of three elements in three groups, which provide controlled-aberration soft-focus effects at wider apertures. In addition, multiple-aperture disks in two sizes are supplied, which are attached to the rear of the front-lens-element group when it is removed from the lens assembly. A standard iris diaphragm is provided for use in conjunction with the aperture disks or without the disks to give normal f-stop values. These Fujinon-SF professional lenses are distributed by D.O. Industries, Rochester, New York.

12. The Spiratone Portragon 100mm f/4 lens is a modern 35mm-camera adaptation of the classic portrait lens. It is a simple, single-aperture lens that is coated and color-corrected. This very modestly priced soft-focus lens is designed to use a "T" mount, which makes it easily adaptable to most popular brands of 35mm single-lens reflex cameras. It has an adapter ring for standard screw-in filters and an optional lens shade. The lens may be purchased directly through Spiratone's mail-order catalog.

13. The Mamiya-Sekor SF C 150mm f/4 is a soft-focus lens designed for use on the Mamiya RB67 camera. This lens utilizes spherical aberrations, which can be controlled to achieve a variable soft-focus effect at apertures from f/4 to f/8. Three "softness control disks" of the multiple-aperture type are also supplied and fit behind the rear of the front lens group when it is removed from the lens assembly. The disks are designated with fixed aperture values, but they may be adjusted to reduce the softness effect and the effective aperture with the lens' iris diaphragm. The lens will function as a normal, sharp-focusing short telephoto with apertures of f/8 to f/32. It accepts 77mm screw-in filters and comes with a folding rubber lens shade.

washing out strong tones that would detract from the mood of the image. When flare is introduced, the exposure reading with a built-in meter is equally affected, usually providing a higher reading. Some compensating adjustment in the setting should be made to preserve the flare's effect.

FILM

Film choice is another important factor in making an ideal reproduction of a particular subject. As a general rule, no one film is better than another for use with soft-focus lenses, but individual film characteristics can affect the ease or difficulty of obtaining particular image effects. Soft-focus lenses, when used at or close to their maximum soft-focus effect, tend to reduce image contrast, particularly when very light backgrounds and backlighting are involved. It is the photographer's choice whether to compensate for the lens' effect by using a film with greater inherent contrast, or to exaggerate by using a film noted for its wider latitude and softer contrast.

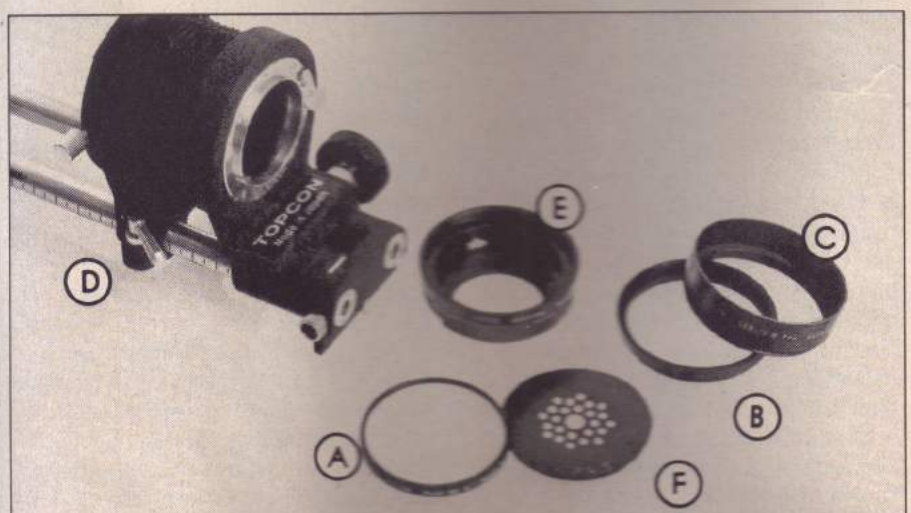
If, for instance, image brilliance and strong color saturation are desired, faster color films such as Kodak Ektachrome 400 or Agfa Agfachrome 100 for slides, and Fuji Fujicolor F-II or Kodak Kodacolor 400 for prints, would be good choices. At the other extreme, when subtle pastel tones are called for, Kodak Kodachrome 25 for slides or Kodak Vericolor II for prints would be appropriate selections.

With black-and-white film, since contrast is adjustable by the degree of development the film receives, films should be chosen more for the other effects they may have on image character, especially apparent graininess. A sharply defined image of a detailed subject made with a normal-type lens on a particular film may not produce very apparent grain in a print. But when that same film is used with a soft-focus lens to create an image with large areas of subtly gradated midtones, the grain may be much more apparent in the print. As with choosing color films, it is up to the individual photographer whether to compensate or exaggerate. Grain effects can be very positive complements to some soft-focus images and totally out of place with others.

Film choice can be affected by a film's speed in relation to the light level of the scene to be photographed. Remember that the "soft-focus" effect is functional only at wider apertures. If the subject brightness level is high, as it is in sunlight, the highest shutter speed available may not allow the use of that wide aperture with a fast film. This is particularly true with the lenses available for large-format cameras because the maximum shutter speed can be as slow as 1/125 second. One manufacturer, however, does supply a two-f-stop neutral-density filter to reduce the amount of light entering the lens, allowing the use of wider apertures. When working with other brands of lenses outdoors in daylight, a modest selection of neutral-density filters (providing one, two and possibly four f-stop reductions of light transmission) will provide the flexibility needed for using most available films under all normal conditions.

There is no reason why any color filter used with other lenses can't be used without adjustment or compensation with soft-focus lenses. Special-effects filters such as image multipliers and star-burst filters can also be used, but with caution. Pretesting special-effects filters to determine what will happen in terms of exposure and image contrast can save much time and film. Some of the cross-screen or star filters may require compensation for a loss of image contrast. They should not be avoided for this reason, however, since their effects combined with those created by a soft-focus lens often produce especially pleasing results.

And finally it should be noted that the significance of the picture produced by a soft-focus lens, as with any piece of photographic equipment, is as much due to the care and creativity of the user as it is to the range of possible lens effects. But unlike most of the other new optics, the performance of soft-focus lenses has an element of unpredictability that presents a very special kind of adventure and challenge for the innovative photographer. □



An excellent homemade soft-focus lens can be constructed easily with a few readily available component parts and can be used with a bellows attachment for any single-lens reflex camera to facilitate focusing. The lens element is a single Series 7 Tiffen Photar Plus 10* close-up attachment (A). The lens element is held by a Series 7 (48mm or 49mm) adapter ring (B) and retaining ring (C). The Series 7 adapter ring is attached to the lens mount of the camera bellows accessory (D) via a T-mount adapter (E) with a male connector of the same type as the female lens mount of the bellows. The Series 7 adapter ring is attached to the front threaded side of the T-mount adapter using epoxy glue.

Multiple-aperture disks (F) for the homemade soft-focus lens can be made from any stiff opaque card stock or plastic. Use the Series 7 close-up attachment as a template to scribe around the circumference for blank aperture disks. A leather punch is useful for cutting the large and small apertures in the blank disks. A variety of sizes with different large central apertures and smaller surrounding apertures can be made easily to achieve a range of apertures for different effects. When the disks are completed, spray them with matte black paint if the material is not already dull black.

Assemble the lens by fitting the combined and glued "T" adapter and adapter ring to the front of the bellows. Then place the aperture disk in the adapter ring with the Tiffen Photar Plus 10 flat-side down on top. The aperture disk and lens element are held in position by screwing a Series 7 retaining ring into the adapter ring. A Series 7 lens shade can be screwed into the retaining ring if desired. Then simply attach the bellows to the camera and adjust the bellows draw to focus the lens.

Built-in through-the-lens exposure meters with or without exposure automation may be used to determine proper shutter speed when making exposures. Most 35mm single-lens reflex cameras provide a method for using the built-in meter with manual-aperture or fixed-aperture lenses. The same procedure should be followed when using the homemade soft-focus lens.

***When a homemade soft-focus lens is intended for use on a 120-size single-lens reflex camera (those with focal-plane shutters only), a longer effective focal length is needed; instead of the +10 diopter close-up accessory lens, a +6 is required. Because they are difficult to obtain, a +6 diopter value can be achieved most easily by using two +3 lens attachments, one in front of the other.**