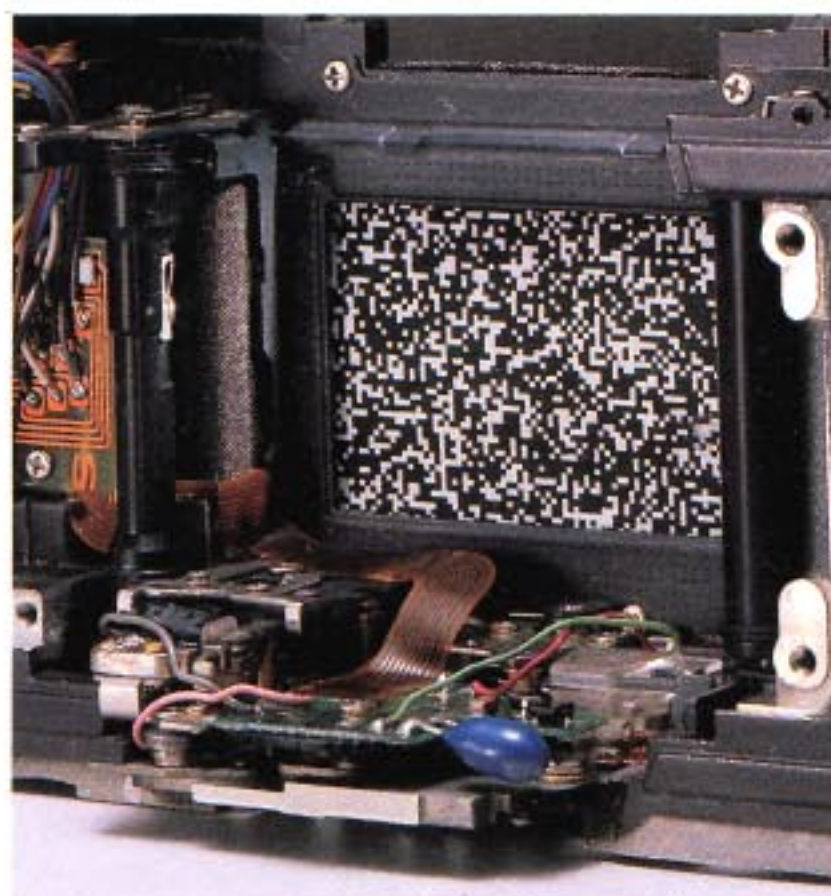
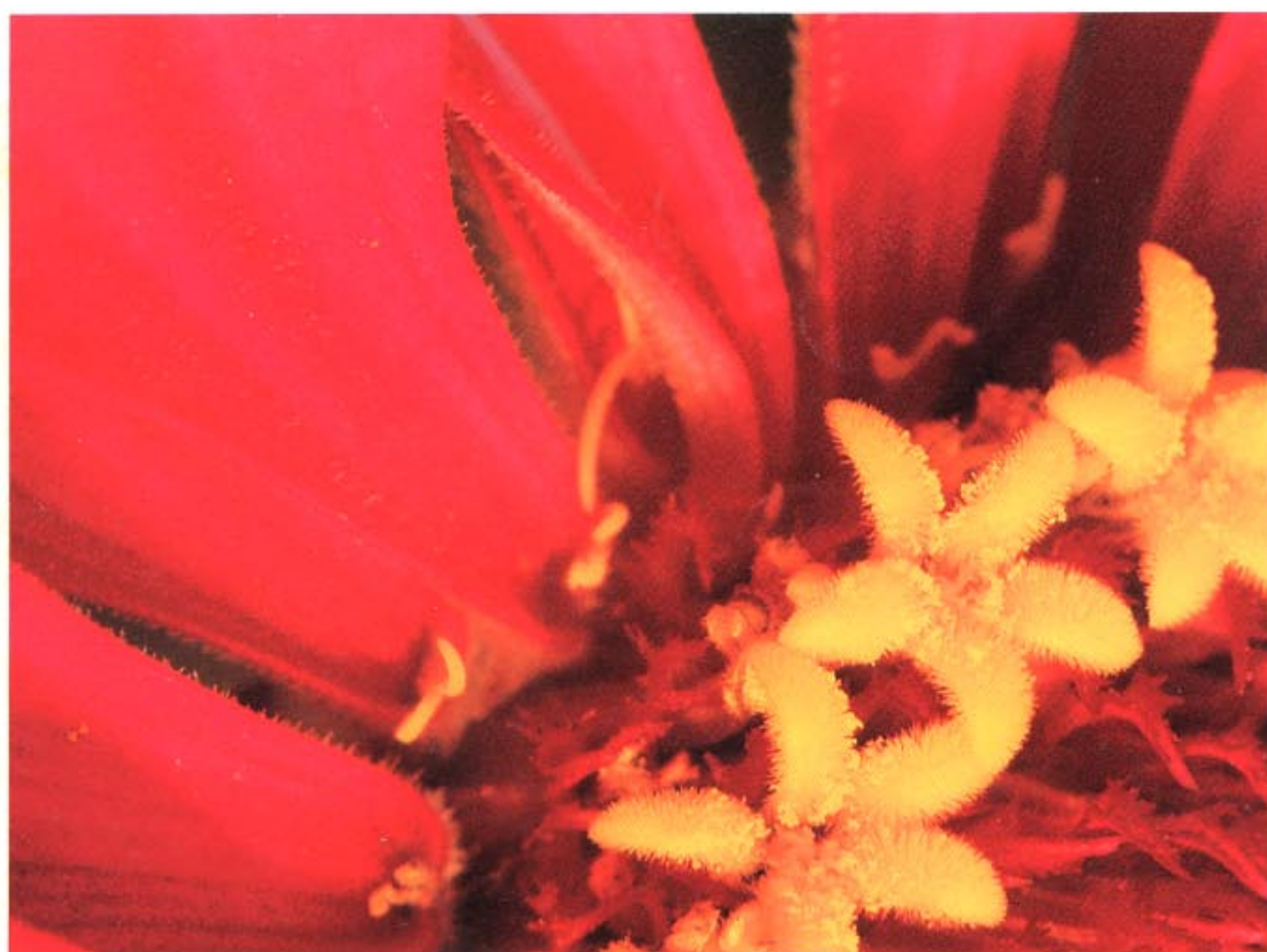


OLYMPUS®

The International Magazine of Photographic Information 1984

VisionAge



Kon Sasaki's Macrophotography.

The macro world is expressed in the words of this leading photographer. His creative ideas and unique system in the field of macro-photography.

Introduction to Sports Photography.

How to catch the dynamic beauty of physical motion or a moment of intense action. Professional sports photography artists reveal the secrets of how to photograph sports.

The Zuiko Story

A look at the history of how the optical industry in Japan developed from its pioneer days to the present. A gem of reflections from the viewpoint of the technicians who made it possible showing their infinite enthusiasm for photography.

OM-4: the Latest in Camera Technology.

A full view of the new mechanism shown by the Chief Designer himself. This expands the scope of photography by means of Multi Spot Metering.

VisionAge

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Introducing Ourselves

We would like to introduce ourselves, VisionAge. The decision to launch VisionAge was made by Olympus to commemorate the introduction of its breakthrough to the world of photography, the new OM-4. An event in itself, the new OM-4, which features an epoch-making Multi Spot Metering mechanism and promises to revolutionize the scope of photography, is the *raison d'être* of VisionAge.

The aim of VisionAge is to help enhance your life with the camera by showing you how to improve your techniques and broaden the scope and enjoyment of your photographic experience. VisionAge particularly hopes to serve owners of OM System by showing them how to make more effective use of their equipment.

This first issue, Number 1, of VisionAge presents, first of all, first-hand technical comments on the OM-4 by the designer who developed it, followed by a technical report on the OM-4 by a professional photographer who actually used it. As part of the OM System, wide-angle lenses are covered in another article which gives details about various ways of using them together with actual examples of results. A leading Japanese photographer, Kon Sasaki, then shares his know-how to show that macrophotography, generally regarded as a difficult sophisticated technique, can be easy.

Being that this is 1984, the year of the Los Angeles

Olympic Games, we are taking a look at the art of sports photography enthusiasts who would like to know the ins and outs of this very special field.

VisionAge is filled with other tidbits and news about cameras and the world of photography, ranging from selections of top photographs from around the world to information about amateur contests and Olympus galleries.

This issue of VisionAge also introduces the first part of a serialized version of the development of Olympus cameras and the history of the camera in Japan. Taken from The Zuiko Story, the History of the Camera in Japan, it traces the advent of the camera, from the past to its advanced modern state, as seen through the eyes of a technician who observes the minute details of camera technology while relating interesting episodes in its development. We believe that the technician's story will help the reader to appreciate the attractiveness of the camera from a very specialized point of view.

We are moving relentlessly and inevitably toward an age of new photographic images. VisionAge aims at helping you to see these developments as they occur and to fully utilize your OM System to participate in them while improving your photographic skills.

The Editors

RA



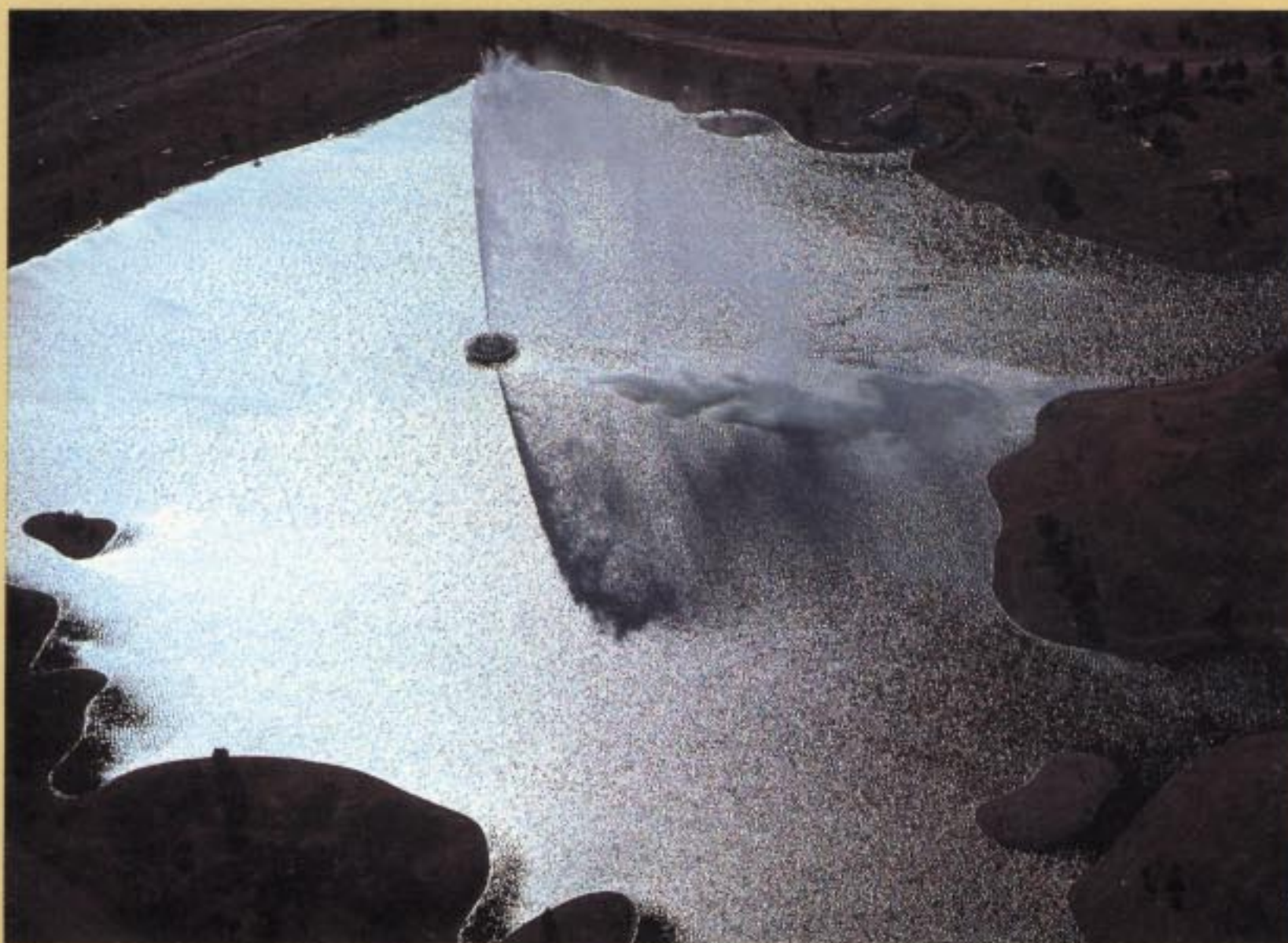
THE VISION AGE GALLERY

In this section, we introduce the latest work by the world's leading photographers. For the first edition, we introduce the outstanding and renowned work of three photographers who belong to Magnum.

EL PASO, Texas

Alex Webb

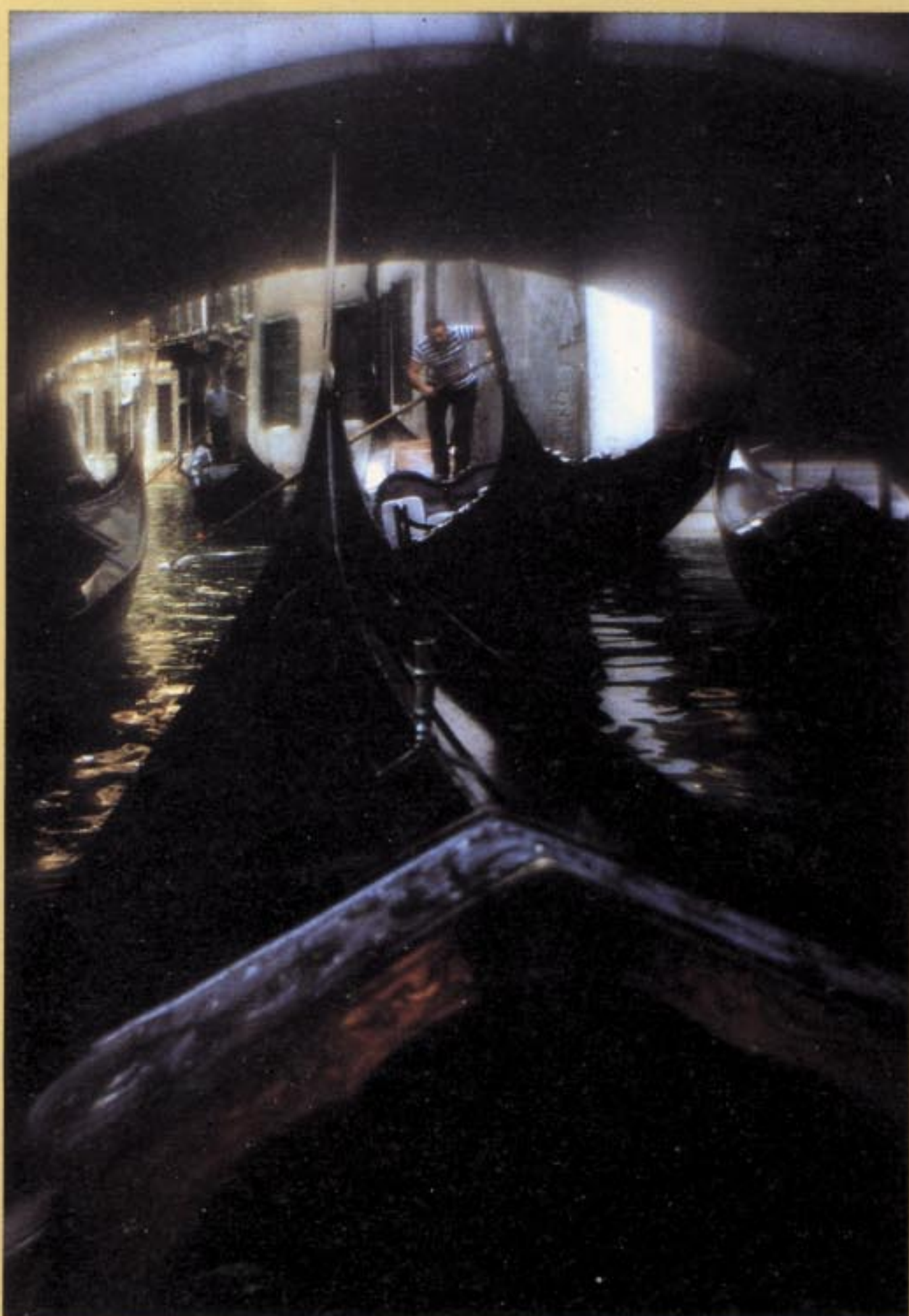
Alex Webb was born in San Francisco in 1952. He studied at the Carpenter Center for Visual Arts, Harvard University, 1970-1974. He has worked extensively for the NEW YORK TIMES and covered Washington, D.C. in an essay for GEO, the exciting new German travel magazine. Based in New York.



Arizona — The highest man made fountain in the world.

David Hurn

David Hurn was born in 1934. His first major photographic assignment was coverage of the Hungarian Revolution in 1956. Since then he has worked extensively for most of the world's leading publications. Now spends most of his time in the British Isles working on very personal stories in Wales.



Venice

Erich Hartmann

Erich Hartmann is well known for extensive photographic essays on industry and technology. He has photographed prominent personalities in business and in the arts as well as studies on social and political themes. Based in New York and Maine.



OM-4: the Latest in Camera Technology

Spot Metering for Precise Exposure of Picture Areas to be Emphasized



Y. Maitani
Director and Chief Camera Designer
Olympus Optical Co., Ltd.

Development Aims

The Olympus OM-4 (see Photo 1 and Diagram 1) was finally put on the market in October 1983 long after the first indications of its debut had been made and a full seven years after the appearance of the OM-2. This is not to say, however, that the design team was not working on the concept during all this time. On the contrary, intensive efforts were under way to reach a new stage of development in the single lens reflex camera concept. It is widely known that the modern SLR camera is an extremely sophisticated and highly developed photographic tool. In many ways the SLR that we know today does not leave much room for improvements other than small ones. Any new developments that can be achieved now will not significantly increase the SLR's photographic range. Other developments still belong to a world of mechanisms that are not possible with available technology and theory. This partially explains why the research and development of the OM-4 took so long.

Without a doubt, today's conventional SLR takes excellent pictures, especially when the sun is behind you, throwing a fairly even light on the subject. This would be a very average subject, and it is precisely the photographing of this kind of subject at which the normal SLR excels. With high-contrast subjects, the results may not be as consistent. For example, the exposure of backlit subjects standing against a window, or subjects in sunlight against a dark background using a normal SLR camera can be very unreliable. Since photography is a

harmony of light and shade, scenes of this kind offer some of the most exciting possibilities in photography. It is a great disadvantage when such photographs cannot be handled by the camera's automatic exposure mechanism.

The OM-4 was developed especially to make up for this deficiency and to facilitate taking pictures under such conditions easily, accurately and automatically. It makes automatic

will be weighted in favor of the face. The supreme achievement of the OM-4 is that it offers a remarkably quick and simple sophisticated automatic exposure system that gives free reign to the photographer's creative ideas.

Exterior Design

The design of the OM-4 is fundamentally the same as its forerunners, the OM-1 and OM-2. This was done so that owners of earlier OM models would be instantly at home with the OM-4's feel and handling. A more important reason was to maintain full interchangeability among all OM System units. The OM-4 is thus compatible with the existing OM Motor Drive, Recordata Backs, 250-exposure bulk film back, etc.

In recent years true system cameras have become a rather rare commodity. One essential characteristic of a true system camera is that it allows you to buy new system units when you want them without fear that

they will be made obsolete with the next model change. For this reason, the basic body shape and dimensions of the OM-4 are exactly the same as those of the OM-1 and OM-2, assuring continued interchangeability.

Fitting a host of new features — the extra powerful microcomputer required for Multi Spot Metering, the LCD viewfinder display with its requisite light path, the dioptic adjustment mechanism, showerproofing material, etc. — into the tiny camera body was a challenging task. This is where the

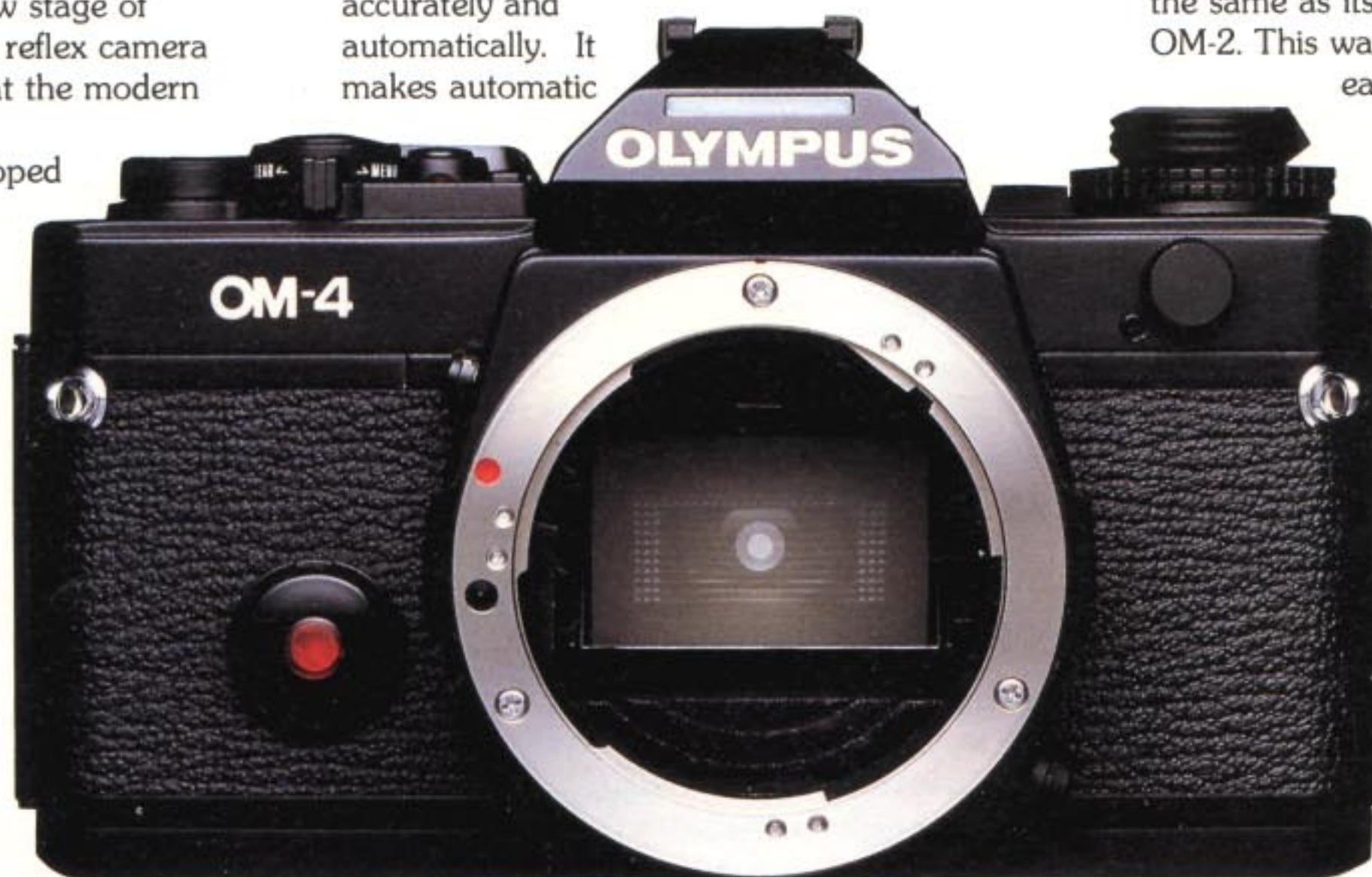


Photo 1.

exposures of the parts of a composition you want to emphasize with great accuracy, whatever the lighting conditions, using the spot meter readings you take. Since the spot meter incorporates a "multi spot" system that lets you take as many spot readings as you like, it allows extremely fine control over the final effects. Each spot reading is given equal weight in the automatic exposure calculation. So, for example, if you take two spot readings of the subject's face, and one of her dress, the exposure will take the dress into account, but

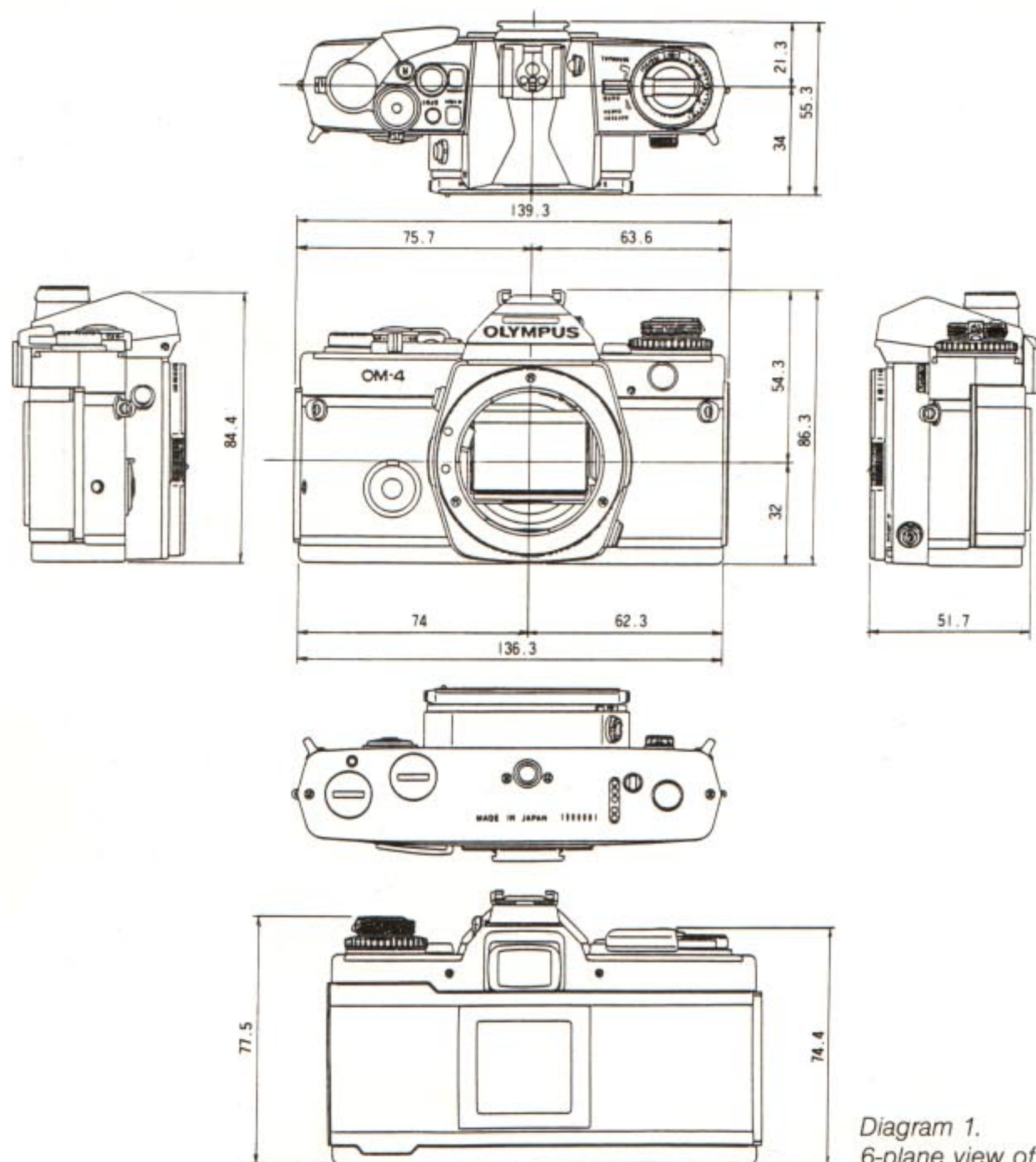


Diagram 1.
6-plane view of the OM-4

complexity and difficulty of designing a true system camera become apparent.

Another problem in designing the exterior of the OM-4 was where to position the new spot metering controls: the Multi Spot Button, Highlight Button, Shadow Button, Memory Lever and Clear Lever. This was one of the toughest challenges of the whole OM-4 design project, because the essence of the entire multi-function Multi Spot Metering concept is predicated on quick, simple operation. If the controls are hard to reach, or the operation too complicated, the Multi Spot idea would not succeed. One consideration was varying the size, shape and height of the control buttons for easy, mistake-free operation, while another was to redesign the pentaprism section to fit with the overall more modern, attractive appearance.

The outcome of all these efforts is a remarkably successful design. The controls are completely new so they need a little time to get used to. When this is done they can be operated easily with one finger, without taking your eye from the viewfinder. If you try the OM-4 you will be convinced of the simplicity of operating the Multi Spot controls.

TTL Direct "off-the-film" Light Measuring

The TTL Direct "OTF" light measuring is basically the same as that developed for the

OM-2. (See Diagram 2.) This involves taking a center-weighted average reading of the light that builds up on the film after the film is advanced and the shutter released for outstanding exposure accuracy and simplicity in use. Except in Memory Mode, the camera automatically returns to this TTL Direct "OTF" Light Measuring Mode after the exposure is made. This eliminates the problem of losing pictures because you forgot to reset the taking mode.

In other words, when in normal use the camera operates in TTL direct light measuring mode and utilizes all the advantages of this extremely sophisticated system. The mode responds automatically to changes in brightness during the exposure, and even allows control of the flash emission when using an OM T Series electronic flash. This ensures completely accurate flash exposures even when as many as nine flash units are used simultaneously, even bounce flash, diffused flash or others.

The light sensor is located in the base of the camera body, pointing back towards the film plane. It has three functions; measuring the light on real time in TTL Direct "OTF" mode, monitoring flash emissions for control by the camera's computer and reading the eight values shown in the viewfinder display. (See Diagram 3.)

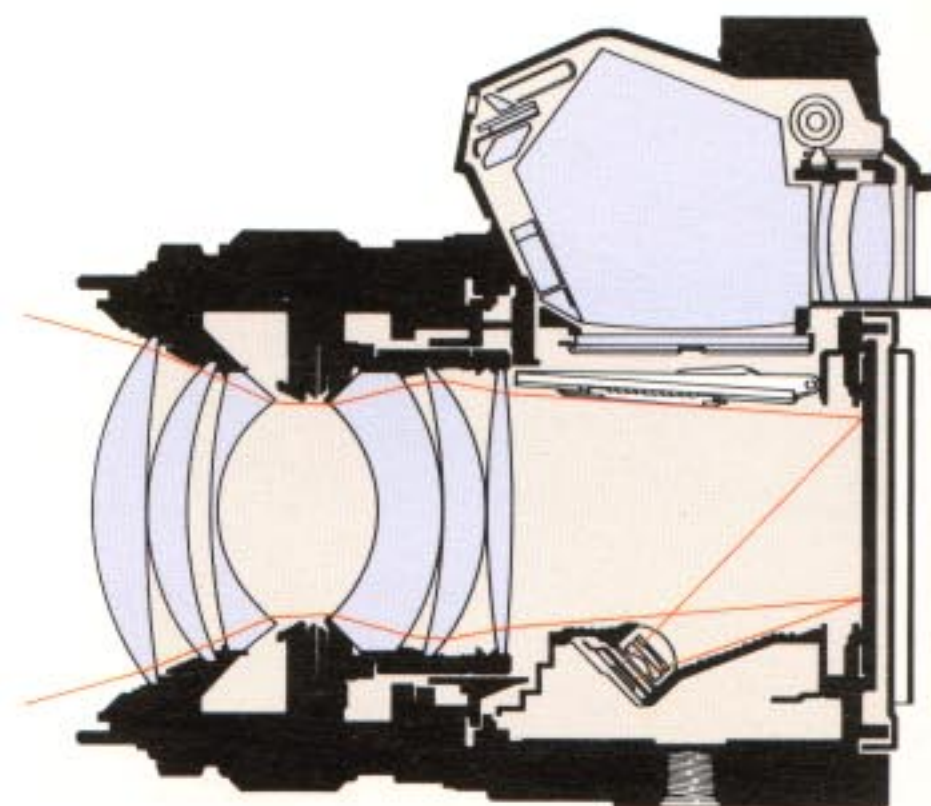
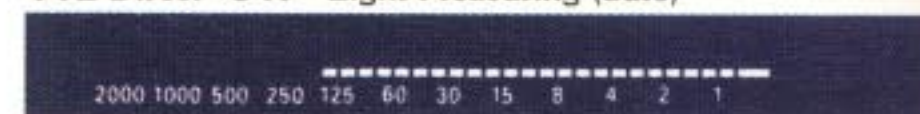


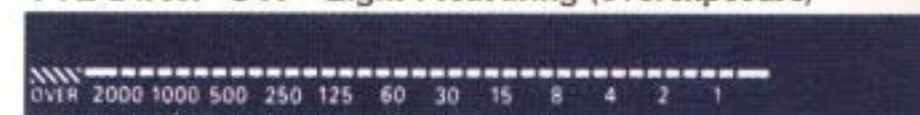
Diagram 2. TTL Direct "OTF" Light Measuring

Diagram 3. Examples of Viewfinder Display

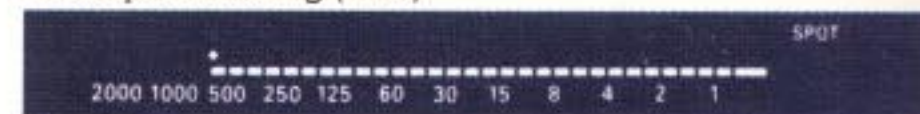
TTL Direct "OTF" Light Measuring (auto)



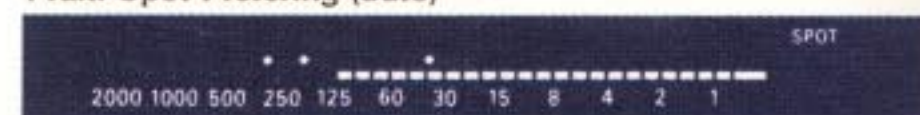
TTL Direct "OTF" Light Measuring (overexposure)



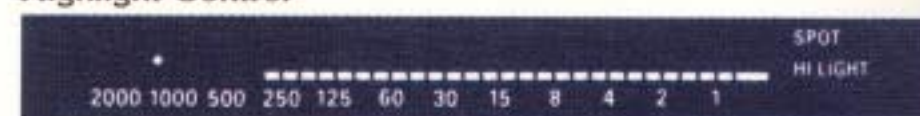
One Spot Metering (auto)



Multi Spot Metering (auto)



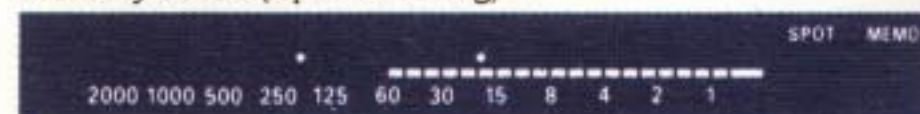
Highlight Control



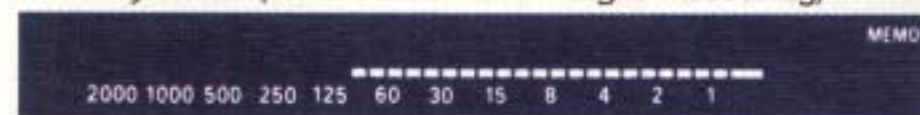
Shadow Control



Memory Mode (Spot Metering)



Memory Mode (TTL Direct "OTF" Light Measuring)



Flash photography (full flash charge)



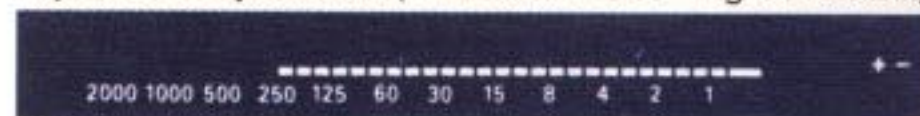
Flash photography (overexposed)



Flash photography (underexposed)



Exposure compensation (TTL Direct "OTF" Light Measuring)



Manual photography (One Spot Metering)



Manual photography (Multi Spot Metering)



Manual photography (Averaged Metering)



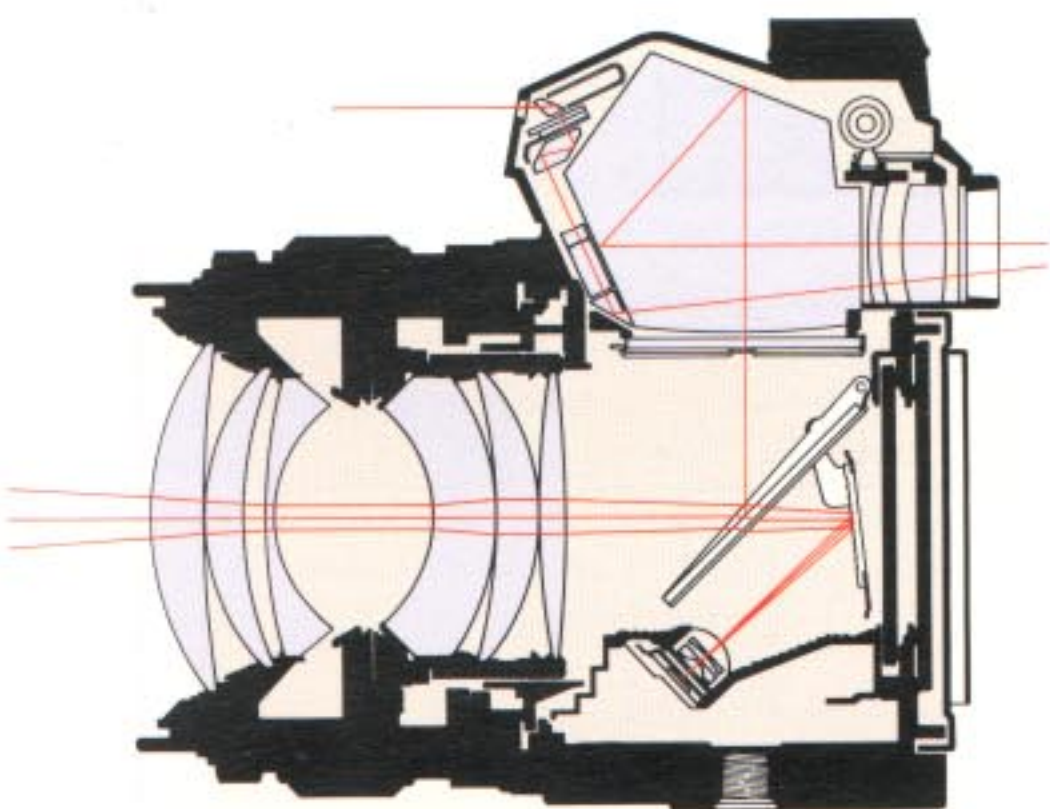


Diagram 4. Spot Metering

Spot Metering

Spot metering measures the area in the center of a picture being taken, which comprises 2% of the total picture area. This is precisely the area covered by the microprism of a standard focusing screen. Spot metering is particularly effective in achieving desired results automatically for backlit scenes in which the background is extremely bright, scenes in which buildings or other large structures make the background too dark, or any other circumstances where you are not sure the averaged meter reading will give the results you want. With conventional techniques, you had to rely on experience and intuition to select an exposure compensation value. The OM-4 spot meter gives you more accurate results simply, automatically, and almost instantaneously.

When you press the Spot Button (See Photo 2), first the camera switches from center-weighted average metering to the spot metering mode. Then it measures the light in the central spot and locks the measured value into the auto exposure memory. This completes the spot meter operation. Afterwards, you can of course change the composition freely or even change the set aperture value (F number) (in this case, the shutter speed changes automatically to maintain the correct light value for the exposure). You can also freely set plus or minus exposure compensations of the metered value. (See Photo 3.)

After the exposure is made, the spot metered light value is automatically cleared and the camera reverts to the TTL Direct "OTF" light measuring mode. After taking a spot reading, you can cancel the light value stored in the auto exposure lock mechanism by moving the Clear lever.

Multi Spot Metering

This allows you to measure the light intensity at several different areas in a composition. It is useful when you need to consider a number of different compositional elements of varying brightness. This may be necessary when there are two or three main subjects, or when there are varying degrees of

subtle brightness in a single subject. It can also be used if measurements are necessary for the face and clothing of a portrait subject, along with the background, but with the emphasis on the face. Precise creative effects can be achieved by taking spot readings for each area, then another extra reading of the face.

Multi Spot Metering does not involve complicated procedures although the name seems to imply this. All you need do is point the camera at the area you want to measure and press the Spot Button. The light values for each spot you measure are automatically recorded, and displayed as dots in the viewfinder. In addition, the camera instantly calculates the averaged value for all the spots measured, and this appears as a bar graph in the viewfinder. After you have measured the subject brightness, composed your picture and pressed the shutter, the exposure selected will be at the last shutter speed indicated by the bar.

You can take as many light readings as you wish. As many as eight can be processed by the powerful microcomputer to instantly give an overall multi spot exposure value. Unlike exposure compensation settings based on experience and intuition, this system allows you to check each brightness value as it appears in the finder and instantly see the calculated exposure value. This assures an ideally suited exposure for the image you wish to create. A capability that used to require highly skilled and time-consuming techniques is now yours automatically, at the touch of a button.

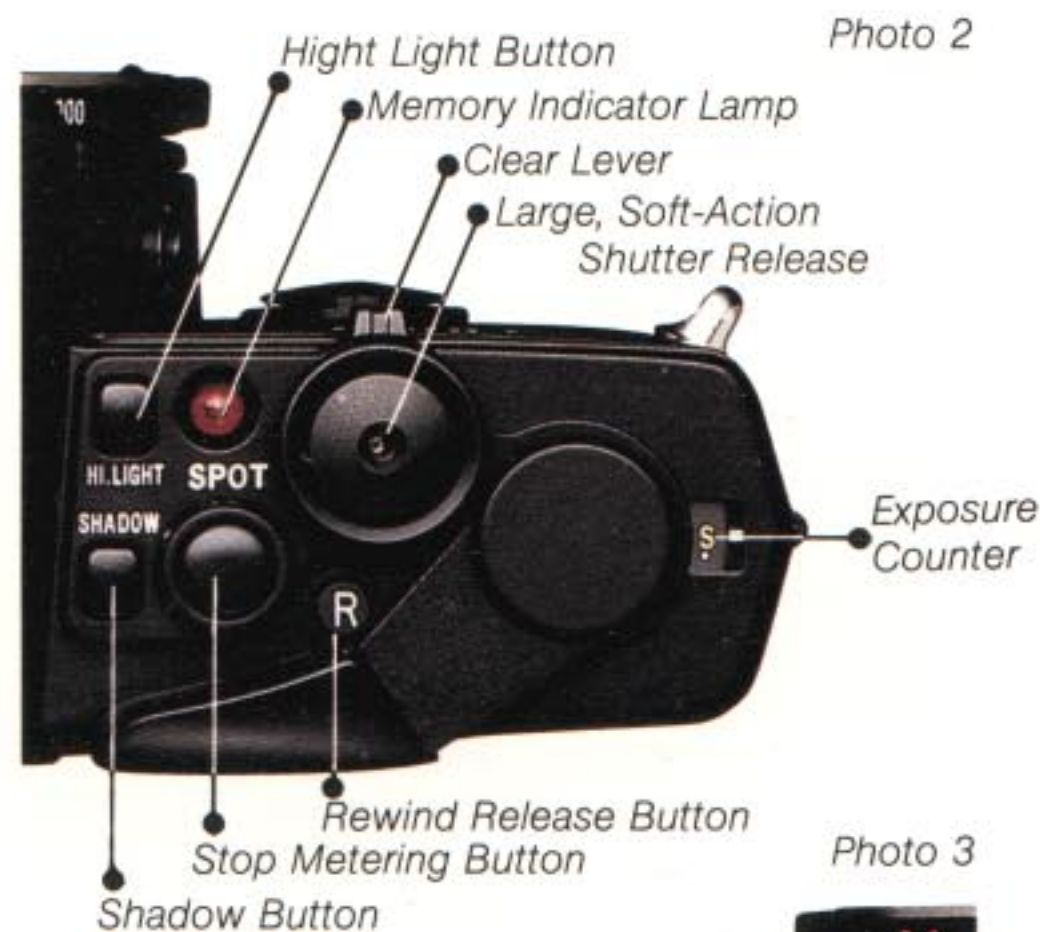


Photo 2



Photo 3

Highlight Control

This mechanism makes certain that when you shoot a white subject, it comes out white in the picture. The average subject will be made up of white, bright and dark parts. Conventional cameras are designed to reproduce the average of all these different brightnesses at a predetermined average brightness value (18% gray). If both white and black are mixed in the composition, then the white will be correctly reproduced as white.

However, in snowscapes, book copying work, etc., where the composition is predominantly white, the finished picture will be reproduced as 18% gray, or, in other words, it will be underexposed. With this kind of subject, using the Highlight Button will assure that whites are correctly reproduced as white.

When taking a spot reading of the area you wish to come out white on the film, press the Highlight Button. The exposure will automatically be compensated by plus 2EV to insure that you get a brilliant white image. In Multi Spot Metering, the exposure will be automatically compensated to make the brightest spot measured come out as a full highlight.

Shadow Control

This mechanism is used to make sure that black objects are photographed as black. When the whole composition is of very dark or black tones, the camera nonetheless reproduces them as an average gray. In this case, by first taking a spot reading of the area you wish to appear as black, then pressing the Shadow Button, an exposure compensation for that point of minus 2.7EV will be set to assure that it comes out a rich black tone on film. During the Multi Spot operation, the darkest of all the spots metered will come out on film as a full black.

Exposure Memory

This function enables you to memorize the exposure level of the shot, and take as many more frames as you like at the same exposure. The memory can be set in any exposure mode: TTL Direct "OTF" light measuring (center-weighted averaging), Spot Metering, Multi Spot Metering, or with Highlight or Shadow controls. This is an extremely valuable way to assure perfect exposures of stage shots when the background brightness is constantly changing, in panorama photography or in any situation when you need to take more than one frame at a predetermined exposure.

After the memory is set, the aperture can be altered freely and the shutter speed will be automatically changed to maintain the preset exposure value.

Whenever you wish to cancel a light measurement, from Spot Metering to the Memory function, simply move the Clear Lever to instantly cancel any stored information.

Automated Multi Spot.

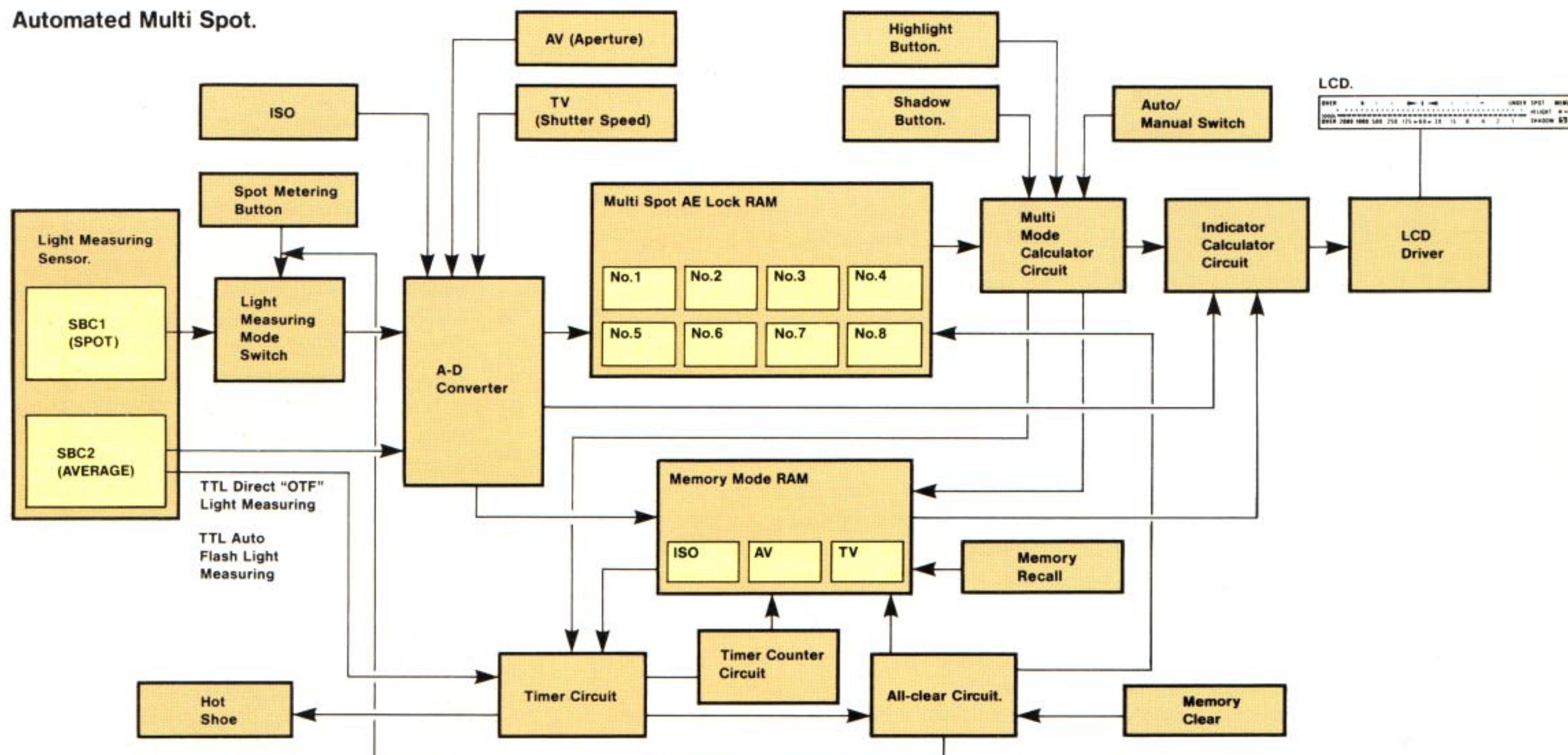


Diagram 7. Exposure control diagram

Manual Metering

For when you wish to adjust the exposure manually. You can choose freely between center-weighted average metering or Spot or Multi Spot Metering.

You can get the correct exposure setting by rotating the aperture or shutter rings until the end of the bar graph in the finder is aligned with the indicator arrows in the center of the display. The manually set shutter speed is also shown in the finder.

Viewfinder

The OM-4 features an extra large finder with a view field of 97% of the actual picture area featuring continuous dioptic adjustment from -3 to +1 diopters. (See Diagram 5.) Fourteen different interchangeable focusing screens are available to assure optimum viewing with any combination of system units.

The variety of light measuring methods available in the OM-4 calls for a great deal of viewfinder information, and means it must

Diagram 5. Eyepiece lens dioptic correction mechanism

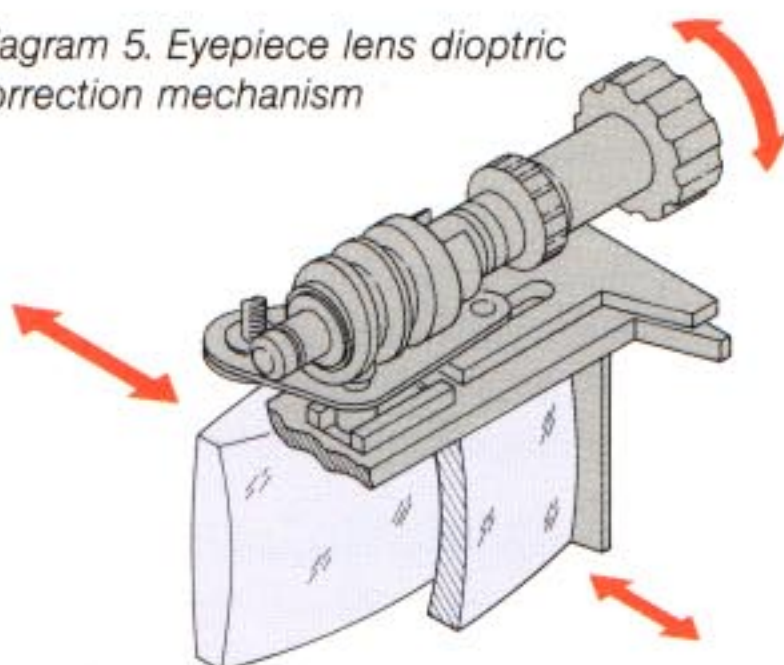
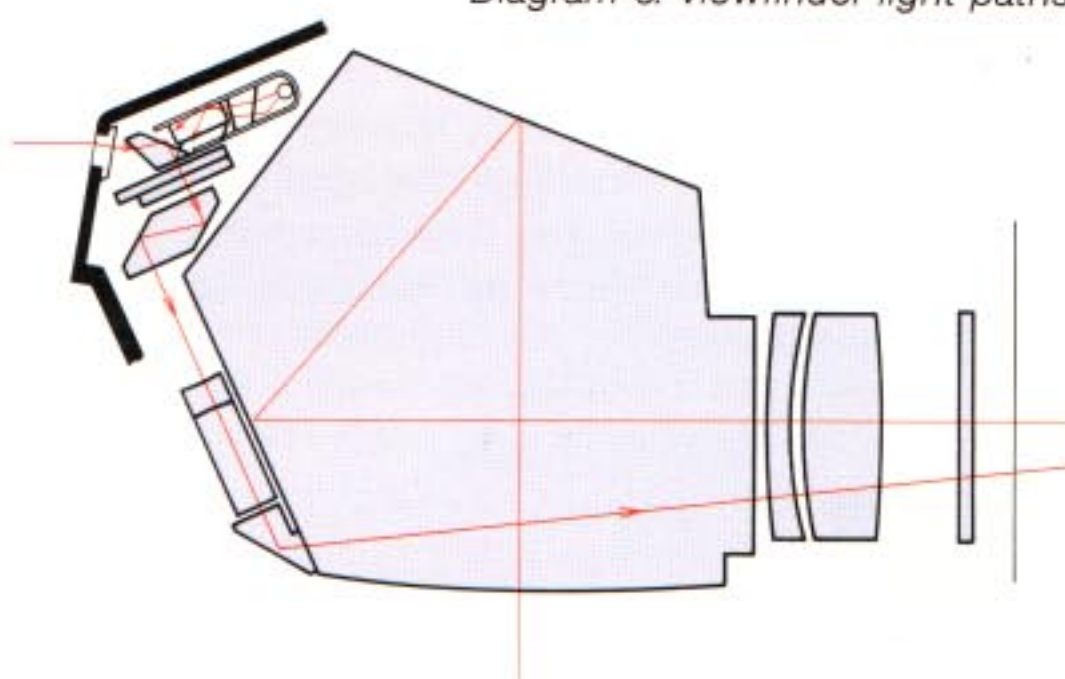


Diagram 6. Viewfinder light paths



be made exceptionally easy to see. Therefore a negative type large-size LCD is used. The display is located in front of the pentaprism, and the light path runs along the front of the prism to its base, passing through a condenser lens and parallel prisms to reach the viewfinder. It is normally illuminated by available light entering through the window in the front of the pentaprism section, but under dark conditions a special illuminator lamp may be used. The latter remains lit for ten seconds after the illumination button is pressed — a feature that is both convenient and energy-saving. (See Diagrams 3, 6.)

Electronic Circuits

A single unit is used as the light receptor element for both the direct light measuring and the viewfinder display. It features five chips in a four-package construction, with a sensor unit which combines in one package the complex SBC and head amplifier for the Spot Metering function and TTL Direct

“OTF” Light Measuring function, a 4-bit, 4K byte CMOS microcomputer, a large-scale bipolar LSI, incorporating an AD converter, and, a CMOS high-speed LCD driver. These are all integrated on both surfaces of an extremely high-density flexible circuit board. (See Diagram 7.)

The multiple programs, including TTL Direct “OTF” Light Measuring, Multi Spot Metering, Highlight and Shadow controls, exposure memory, TTL Auto “OTF” Flash control, etc., are squeezed into five different types, with a sub-routine stack function able to handle over 90 different kinds of instructions fast and efficiently.

When the shutter is released, the light reflected back from the film surface is measured by the SBC for TTL Direct “OTF” Light Measuring, while the shutter timer counter circuit controls the rear shutter curtain, and the intensity of the flash. During Spot Metering, the value is converted to an AD value and stored in the AE Lock RAM. At the same time it is displayed on the viewfinder LCD via the exposure calculator circuit and the indicator calculator circuit.

During Multi Spot operation, all the values stored in the AE Lock RAM are averaged, and sent both to the LCD driver and the shutter timer counter circuit to control the exposure. After the picture-taking process is complete, the All-Clear circuit goes into operation and returns the camera to the TTL Direct “OTF” Mode.

When Highlight or Shadow controls are used, the exposure value is recalculated

accordingly and fed into the camera controls.

In addition, there are a great many auxiliary circuits, including those for film speed (ISO/ASA), self-timer, battery check, etc. The four LSI chips and these auxiliary circuits are all controlled by the CPU on a time-sharing basis. In this way, electricity is conducted only to the minimum necessary number of blocks, making the circuit so energy efficient that it was possible to eliminate the "OTF" switch entirely.

Other Features

The OM-4 features some 30 different design improvements, including a completely new block-type shutter design to assure easy assembly and more uniform quality, running, drive and control functions. It has a low-shock full horizontal focal plane shutter which provides an accurate and constant 1/2,000 sec. shutter speed despite the very compact camera body. Together with the mirror air damper, this maintains the OM tradition of outstandingly low shock performance. (See Photos 4, 5 and Diagram 8.)

Also new is a 1/60 sec. mechanical shutter speed. A new motor, with rewind capability an exclusive for this type, can be attached or detached even when the camera is loaded

with film. The complex mechanism is given greater protection by a new showerproof construction.

The Motor Drive 2, which went on sale at the same time as the OM-4, also features showerproof construction. It features another remarkable first: a shock-free twin motor system. (See Diagram 9.) The Motor Drive has a built-in computer for extra convenience in handling and performance. The large-size T45 professional electronic flash also appeared with the OM-4. It boasts exceptional functionality and performance, doing away with the shoulder-pack-type power source previously indispensable with this class of flash unit, yet providing a recharge time as fast as 0.2 to 2.2 seconds. (See Photo 6.) Other new units include a unique array of lenses, including a 350mm F2.8, 250mm F2, 24mm super wide-angle shift lens, etc.

The Olympus OM System has made a major new advance in range and performance with its new camera, the OM-4. Experience the unique performance of the OM-4 for yourself, and let us have your valuable comments and suggestions so that we can make the OM System even more responsive to your needs. **VA**

Photo 4. Shutter block

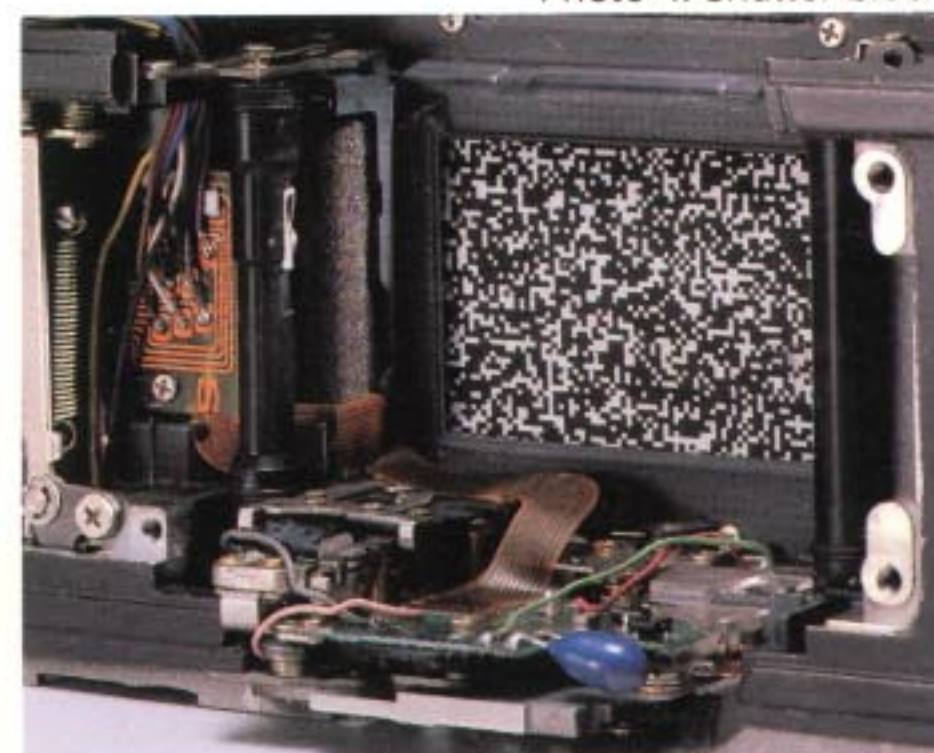
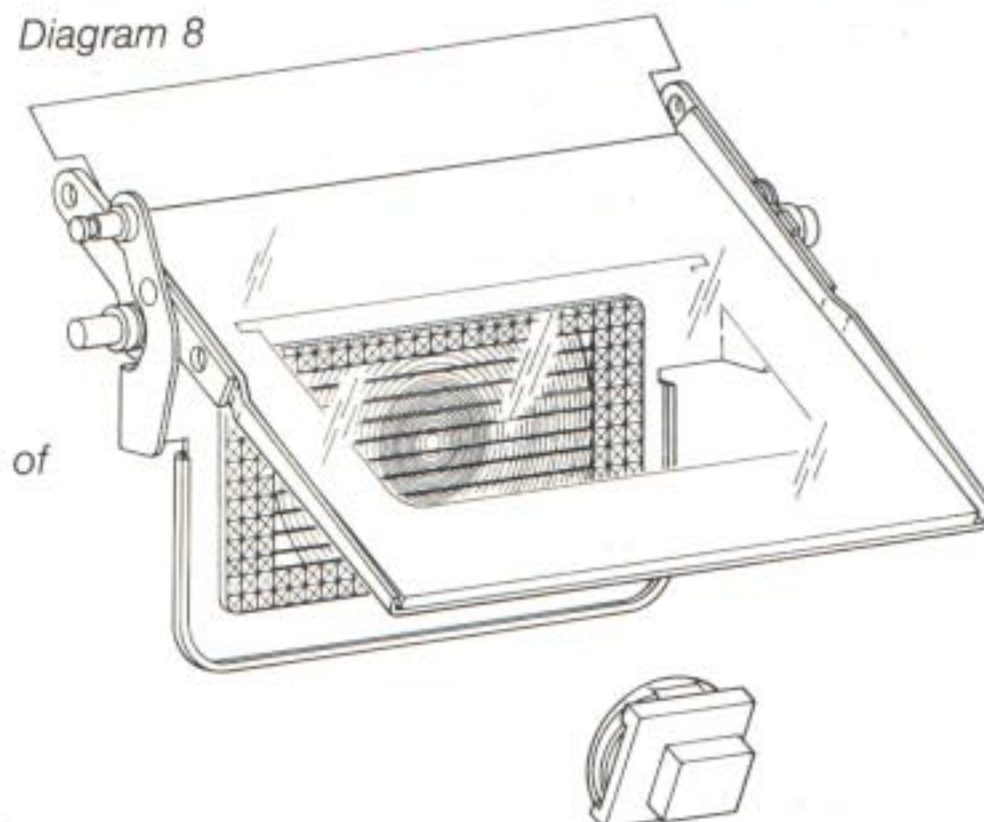


Photo 5. Multi Fresnel Mirror

Diagram 8



Multi Fresnel Mirror

The OM-4 features a newly developed composite mirror to assure accurate fulfillment of both spot metering and center-weighted average metering functions. The central part comprises an aspherical fresnel mirror laid out in a mosaic pattern, while the periphery consists of a pyramid type reflecting surface with diffusion characteristics.



Photo 6. OM-4 with Motor Drive 2 and Electronic Flash T45

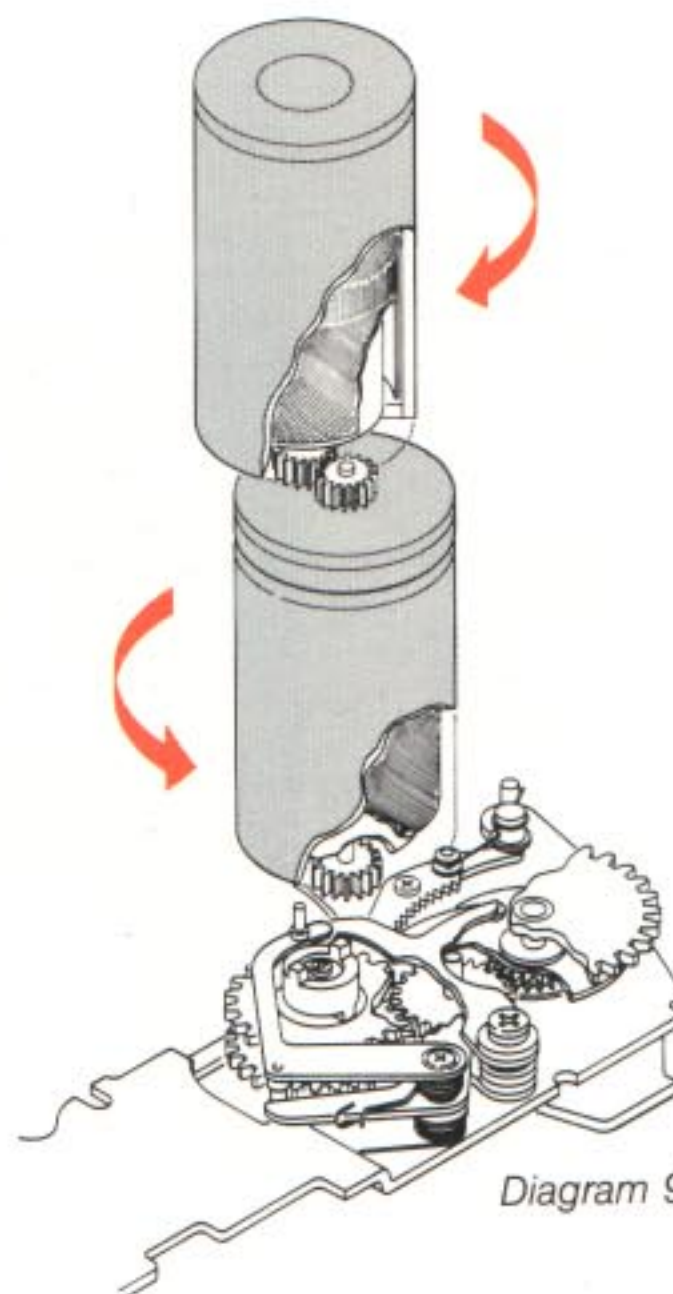


Diagram 9. Shock-free twin motor system

How Multi Spot Metering Works

by Akio Kojima

Single Spot Metering at the Touch of a Button

Almost everyone has experienced, at one time or another, getting a badly underexposed picture when shooting the face of someone with the sun behind the subject or against an extremely bright background, using a regular automatic exposure camera.

The picture is underexposed because a regular built-in exposure meter is designed to read the brightness of the whole picture area, either on a uniform "averaged" basis or, with the 'center weighted' type, with extra emphasis on the central area of the composition.

In other words, in addition to the brightness of the main subject, the exposure value is influenced by the extreme brightness of the background or peripheral parts of the picture. Consequently, when the picture is taken, the face of the subject, which is considerably darker than the background or the periphery of the composition comes out far too subdued.

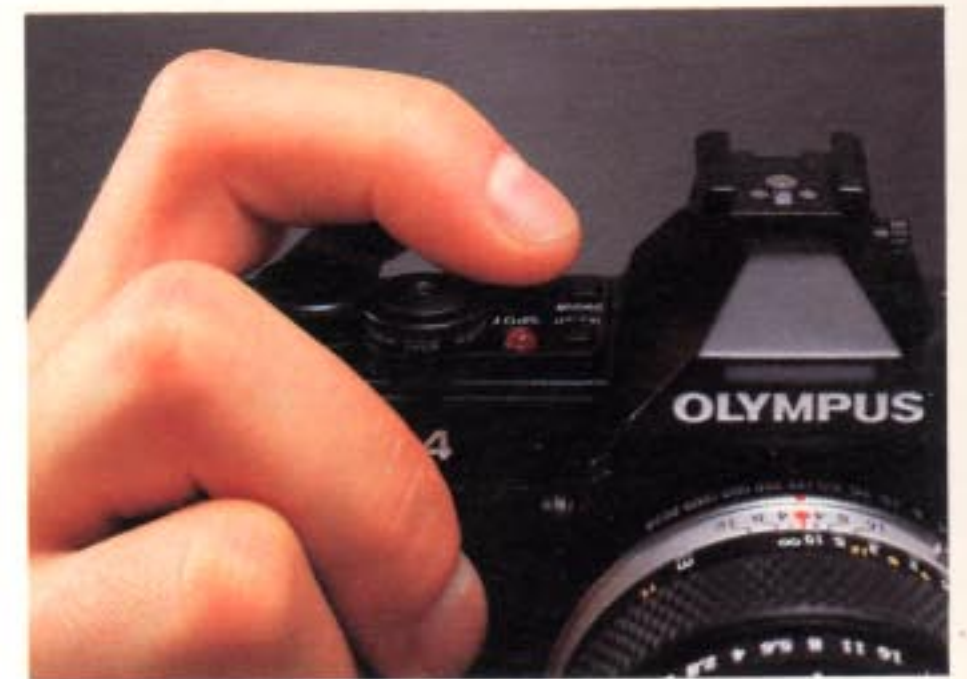
To prevent this kind of failure many cameras provide an exposure compensation mechanism. However, the degree of compensation required depends on many different elements in the picture. As there is no

way of knowing the exact value of the subject's face, the only alternative is to make an educated guess and hope for the best.

This presents many problems for photographers, particularly for professionals whose work depends on perfection. The photographer is forced then to use a separate spot meter in order to take careful readings of the subject's face separately and manually setting the exposure value obtained.

Using a separate spot meter is, however, very cumbersome and inconvenient for the average photographer. It can also be complex and time-consuming so there is a danger that the photographer might lose the chance of getting the picture he wanted.

The remarkable new OM-4 eliminates all these worries. It introduces a spot meter that is fully incorporated into the camera's TTL metering system, an exciting first for a single lens reflex. By simply pressing the Spot Meter Button you can take a selective light reading of whatever part of the composition you choose. Better still, when you press the shutter release to take the picture, the desired spot exposure value is set automatically by the camera's computer system.



Conventional averaged light measurement will give you pretty satisfactory results with normal subjects. However, conventional metering cannot handle backlit subjects, subjects with extremely bright areas, or compositions where the main subject is shot against an extremely dark background. This is where the spot meter function built into the OM-4 provides a fantastic advantage.

In a backlit interior shot with strong sunlight on the window as shown in Photo 1a, the regular averaged SLR meter reading leaves the subject's face hopelessly dark. However, when the OM-4 spot meter is used the result will be a perfect exposure. The face of the girl is centered in the OM-4 viewfinder to take a spot meter reading by pushing the Spot Button, the picture is recomposed as

Photo 1a



Photo 1b



desired and the shutter is pressed as shown in Photo 1b.

When using this function, the instant the spot reading is taken the light value obtained

is locked into the camera's auto memory. This allows you to completely change the composition after taking the spot reading without affecting the set spot meter value.

The one-spot metering is the simplest of several OM-4 advanced light metering functions, and the feature most frequently used by most photographers.

Photo 2a

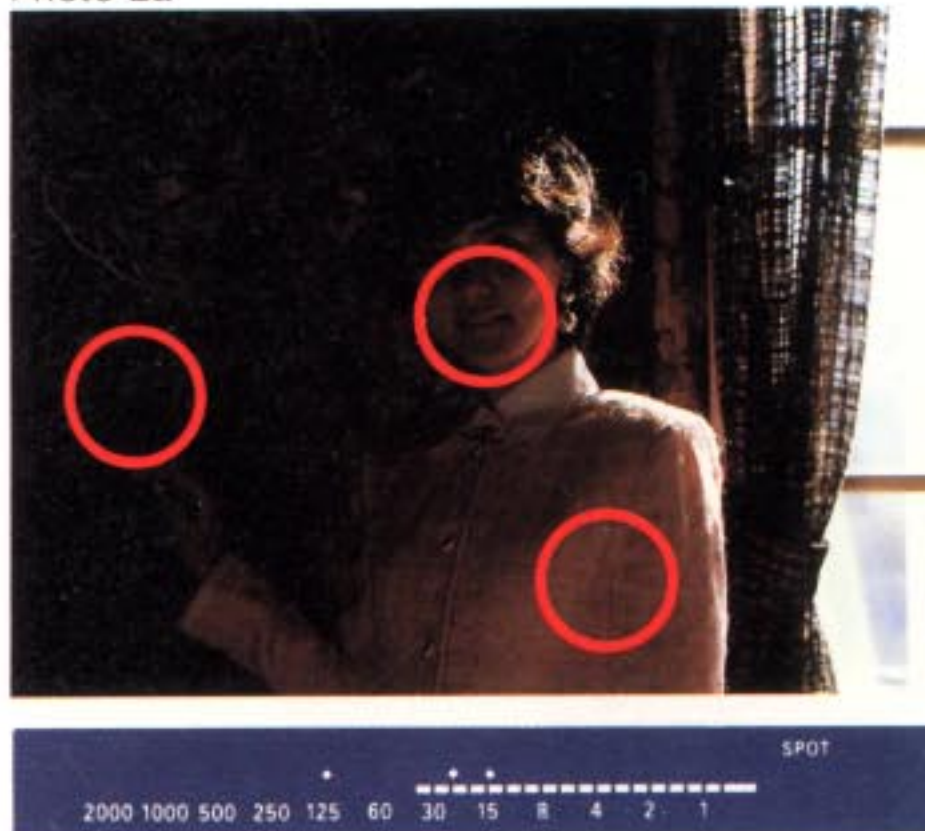


Photo 2b



Multi Spot Metering — An Advanced Technique with Push-Button Ease

The Spot Metering method is not limited to one-spot metering. Two, three or even more spot readings of any desired part of the composition are possible. And every time a spot reading is taken, the camera computer instantly averages out the latest exposure value with the averaged figure for all the previous exposure values, and shows the result on a bar graph in the viewfinder LCD. This computer-averaged value for all the spot meter readings is the value that is automatically set for the exposure.

This advanced technique, once limited to experts with the equipment and time to make an accurate but complicated assessment of exposure value, is now available in the simple and swift Multi Spot Metering function built into the OM-4.

For example, in Photo 2a, the strong sunlight coming directly through the window creates an extremely bright area, while the subject, standing against a dark wall which reflects hardly any light, also appears

extremely dark. This degree of contrast between the light and dark picture areas is too much for color film to handle. With an exposure based on an averaged meter reading, the sunlight streaming in through the window exerts an excessively strong influence on the composition and leaves the interior in a dismal tone.

In this case, in addition to the subject's face and figure, we also want to emphasize the mood of the interior as much as possible. This calls for expertise in choosing the ideal exposure value.

First, a spot reading is made of the center of the subject's face. Then readings are made of the lighter part of her dress, and of the wall in the background. The computer averages out these three readings to give the pleasing result shown in Photo 2b.

By exposing for an average of the three spots measured we get exactly the picture we intended. Obviously, in this case, the excessively bright value for the window has been intentionally ignored.

Using a conventional spot metering system, a photographer must go through the troublesome process of taking separate spot

readings of several different areas of the composition, then calculating the average value for all the readings in his head. He would then have to set the camera manually for the proper exposure. The OM-4 eliminates all these operations and allows the photographer to get a correct exposure automatically, making Multi Spot Metering photography extremely simple and rewardingly fast.

This convenience permits the photographer to concentrate on deciding which part of the composition to measure in order to achieve the creative effects he wants.

Decisions about how a photograph should be composed is a matter of a photographer's personal expression and creativity which cannot be relegated to processing by the camera's computer hardware.

Selecting the best areas of a composition for light readings and determining the number of readings required demands a certain amount of basic knowledge and experience about how film should be exposed. It is here that the photographer's talent and intent determine the final outcome. And this is where the OM-4 can be an especially attractive tool for experienced photographers.

Photo 3a



Photo 3b



The Highlight Control Makes Sure Whites on the Subject Come Out Truly White

Generally speaking, there are a few principles about the characteristics of measuring reflected light with a light meter that should be known.

Basically, there are two kinds of light meter measuring methods used in determining correct exposure. The first is the incident light meter methods, in which the intensity of the light source illuminating the subject is measured, and the second is the reflected light meter methods, in which the brightness of the light reflected off the surface of a subject is measured. At present, the light meters that are built into all cameras are the reflected light meter type.

The incident light meter measures the value of the brightness of the light source, without regard to the color or reflectivity of the subject. The reflected light meter, on the other

hand, measures the light value according to the reflectivity of the subject. The brightness values for a sheet of white paper and a sheet of black paper, under the same lighting intensity, will be totally different.

Because of this, a certain standard has been established for reflected light meters. They are calibrated to give a correct exposure for subjects with a reflectivity value of 18%. (This 18% figure coincides with the average value for human flesh.) Consequently, when an exposure is made following precisely the values indicated by the reflected light meter, both pure white subjects and pure black subjects will be reproduced in exactly the same intermediate gray halftones.

Since all regular automatic exposure cameras use the same standard type reflected light meter, a completely white subject covering the whole picture area exposed for the given value will be reproduced as a darkish gray not as white.

To correct this, the OM-4 designers provided a Highlight Control Button. When you have a white subject you wish to show as a bright white in the photograph, you take a spot reading of the brightest part of the subject and then press the Highlight Control Button. The subject is then exposed at a light value of plus 2EV above that indicated by the meter.

In Photo 3a, the largest part of the picture is taken up by the white blouse. If exposed for the indicated value with an averaged metering camera, the white blouse is rendered as a rather dark tone, and the face comes out quite unacceptably dark.

In Photo 3b, however, using the OM-4, a spot reading was taken first of the subject's blouse around the chest level, and then the Highlight Control Button was pushed. The result is that the white blouse comes out just as it should: a fresh, clean white.

Photo 4a



Photo 4b



The Shadow Control to Depict Black Tones as Rich, Deep Black

Using a conventional TTL camera metering system, subjects exposed for an indicated value that should be jet black do not come out black at all, but rather a fairly bright gray. If, for example, a picture is taken of a black cat, but the rich, glossy black fur cannot be faithfully reproduced, the mood of sensuous mystery that is peculiar to black cats will be completely lost.

To assure that the luxuriously deep, rich blacks that attract the viewer to the subject are depicted just as wanted, the Shadow Control Button is remarkably effective.

The Highlight Control and Shadow Control Buttons are both located on the top of the camera, but in positions that are intentionally not too accessible. The reason is that these controls are not needed constantly, and it was important to make sure they would not be pressed accidentally during the course of

normal shooting.

In contrast, the shutter release button is located in the easiest operating position, and also made extra big and high. The attention paid to human engineering in the OM-4 is further exemplified by the position of the Spot Metering Button, the second most frequently used control, to the rear of the shutter release and somewhat lower.

Photo 4b, is an example of the results using the Shadow Control Button to accentuate the warm blacks of this model in her black leather jacket, sweater and hat. With the averaged light reading of a regular TTL meter, the conventional automatic camera would give the results shown in Photo 4a, in which it is clear that the feel of the black leather is completely lost.

In this example, it might be possible to get a good effect just by taking a single spot reading of the model's face. However, all the rest of the picture would come out very dark. For the

kind of picture where the subject area with the most representative reflectivity is completely black, the use of the OM-4 Shadow Control Button ensures a good exposure.

When the Shadow Control is used, the exposure compensation value is minus 2.7EV. In my experience, the best results are obtained by first taking a spot reading of the shadow parts of the black subject before pressing the Shadow Control Button.

Photo 5



Photo 5c



Photo 5a



Photo 5b



Photo 5d



A Memory to Assure Accurate Exposures Despite the Background Changes

In addition to the various Multi Spot Metering functions, the OM-4 offers another very practical and useful feature.

An annoying problem that frequently occurs when shooting in the Auto mode outdoors in fairly constant bright natural light is the constant changes in the settings indicated by the light meter as the subject walks around and the brightness of the background changes. Although the main subject is always the same brightness, the different background brightnesses influence the meter readings, making it impossible to keep the model properly exposed.

The same kind of problem also occurs in evenly lit studio conditions. It is quite exasperating to have the exposure indication change every time the color or brightness of the backdrop is altered. At times like these it is

troublesome to take a new spot reading for every exposure, and it causes many good picture opportunities to be lost.

Fortunately, the OM-4's 'Memory' function prevents this.

After determining the correct exposure for the subject with a single or Multi Spot reading, etc., the exposure value can be locked securely into the camera memory by pushing 'Memory Lever' on the front of the shutter release button to the left. This allows you to continue shooting at the same value without continually having to reset.

Once the memory is set it remains locked in the camera memory for about an hour, unless a change is made before. When the 'Memory Lever' is pushed to the right toward 'Clear,' everything in the memory will be erased.

The photos shown here explain how this works. In the wide view shown in Photo 5, the model is walking from left to right and the camera is following her. Because the background on the left hand side is a bright

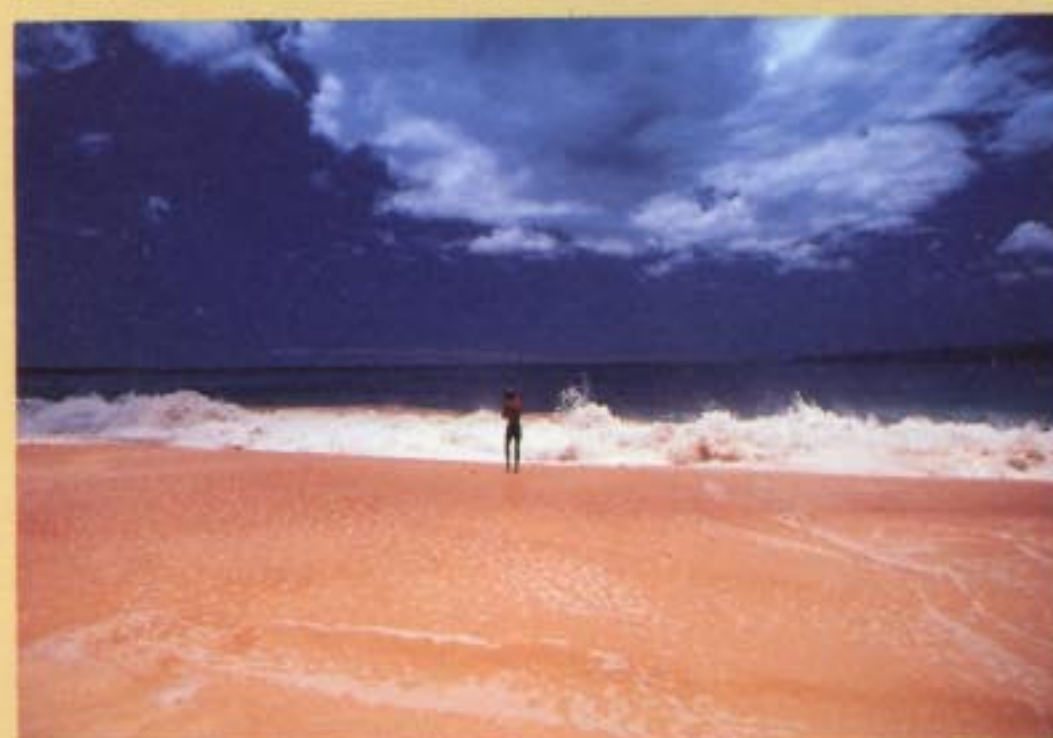
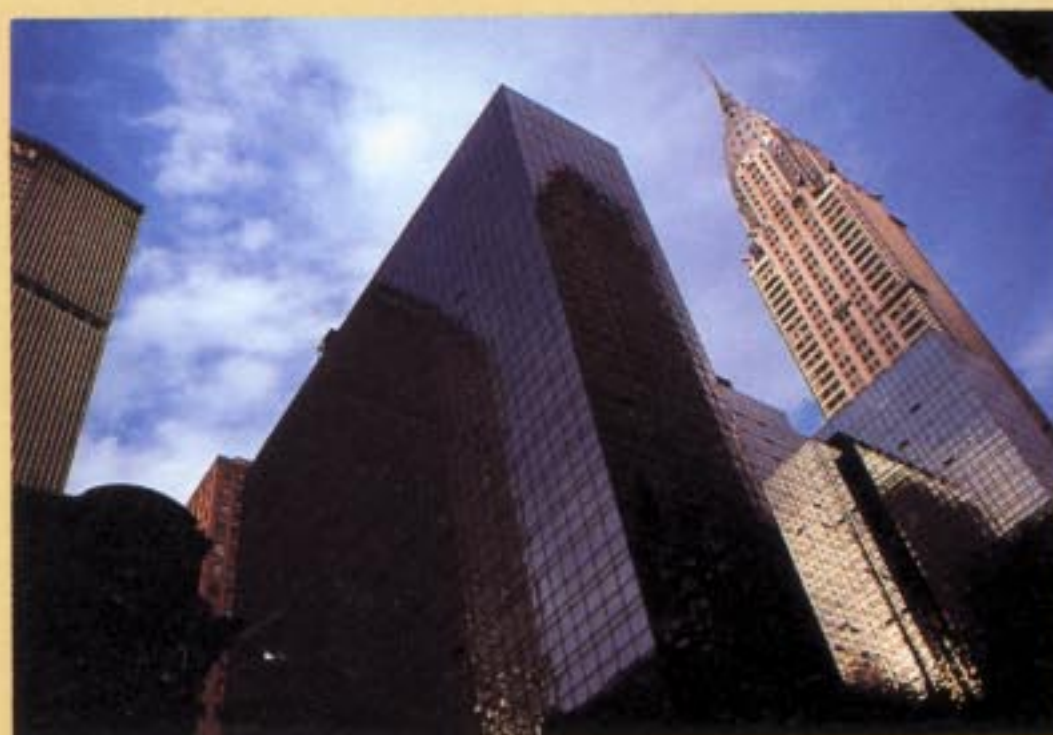
blue sky, the regular automatic exposure results in the model coming out too dark (Photo 5a.). When she moves to the right, the background changes to the rather dark ship's hull, so that the model is overexposed (Photo 5b.).

After getting the right exposure for the model with the OM-4 spot meter, the memory lever was set to lock the value in, and the model was photographed as she moved from left to right with the fine results shown in Photos 5c and 5d.

Despite the changes in background brightness, as you can see, the model is always correctly exposed.

Nowadays fashion photography puts increasing emphasis on the model's movements. And I am sure it is not necessary to point out how very effective this memory function can be in snapshots of rapidly moving objects, sports photography and many other fields too. **VA**

A Wide Variety



28mm	24mm
21mm	18mm

Photos by A. Orikawa

Wide-Angle and Super Wide-Angle Lenses

Almost without a doubt it can be said that it is interchangeable lenses that bring a certain flare to single-lens reflex photography. The main attraction of SLR photography, in fact, is the near unlimited possibilities of the interchangeable lenses, without which there would be no SLR photography as such. In a way, interchangeable lenses are truly the jewels of SLR photography.

The Olympus OM System was developed based on the concept that system accessory units such as interchangeable lenses, electronic flash units, etc., are not just accessories but integral parts of the system and photographic tools with the same level of importance as the camera itself.

The OM System has avoided designing each unit centered around the camera body. Rather each is considered from overall photographic standpoints of ease of operation and integration to achieve quality photography. The photographer should accord as much importance to selecting interchangeable lenses

and other system units as to selecting the camera itself.

The OM System now includes over 50 interchangeable lenses, ranging from the 8mm F2.8 fisheyes to the 1000mm F11 super telephoto, and includes a wide selection of zoom and special purpose lenses. Thus, the photographer is faced with the choice of selecting just the right lenses from the entire range to meet individual needs and purposes.

One might say that the most important feature to consider in selecting interchangeable lenses is the focal length. Depending on the focal length of a lens, the picture angle, or generally speaking, the area of subject matter that can be framed in the photograph, the overall perspective can change. A subject photographed from the same distance with lenses of different focal lengths will appear in different sizes and perspectives in the final picture. Choosing the right lens is even more difficult because within the same interchangeable lens system there are zoom lenses with multiple focal lengths, fixed focal length lenses having the same focal length but

different maximum apertures, special lenses designed for close-up work, etc.

Focal length is not the only basis for selecting a lens. The best way to choose lenses meeting individual needs and shooting requirements from the entire range of the 50 lenses available in the OM System is to look at the characteristics of each focal length group, as well as the special characteristics of each lens.

Characteristics of Wide-Angle Lenses

Almost anyone interested in SLR photography is familiar with the general way in which lenses are divided into wide-angle, standard and telephoto focal length groups. In this article, I will discuss the characteristics of wide-angle lenses in general along with the specific characteristics of the OM System Zuiko wide-angle lenses.

Wide-angle lenses, which are also called short focal length lenses, have the shortest focal length range of the three main lens groups. However, in the Zuiko interchangeable

lens group, the two shortest focal length lenses — the 8mm F2.8 and 16mm F3.5 models — are classed as fisheye lenses. This is because they produce an effect that is different from conventional wide-angle lenses. This difference can be seen as soon as you attach a fisheye lens to the camera and look through the viewfinder. With the fisheye lens, the first thing you notice is that the contours of the subject are rounded and unnatural, sometimes even uncanny in appearance. The effect obtained with the 8mm F2.8 model with its circular picture frame is particularly strange. In contrast, the lines produced with wide-angle lenses are generally straight. This is because lenses conventionally referred to as wide-angles have been corrected for aberrations, eliminating distortion as such. With fisheye lenses, distortion is deliberately not corrected so as to produce a unique effect.

Zuiko wide-angle lenses are further divided into super wide-angle lenses, covering the 18mm through 24mm focal length range, and normal wide angles, covering the 28mm to 35mm focal length range. Until recently, the 28mm lens was also classified as a super wide-angle lens, but with the proliferation of shorter focal length lenses, it is now considered as normal wide-angle. The perspective of the 28mm wide-angle was once considered quite strange, but this is no longer so.

Individual Characteristics of Different Focal Length Lenses

One of major differences of the wide angle lenses based on focal length is the picture effect of the lens. This is the basic reason for needing interchangeable lenses. The two major effects in wide-angle pictures are perspective effect and what is known as the "pan-focus" effect. The same area photographed at the same distance with a super wide angle lens, in contrast to a normal wide angle lens, will include more picture area and show a more pronounced relationship between foreground and background objects, or what is known as perspective. In this respect, the super wide angles have a much more striking effect than normal wide angles. Although normal wide-angles literally provide a wide-angle of view and a perspective which is more pronounced than that of the 50mm standard lens. Compared to super wide-angles, their effect is rather quiet, but can be made more pronounced, depending on how they are used.

The 35mm lens was once considered a true wide-angle lens, although, today, due to the wide selection of wide-angle lenses available, the 35mm wide-angle seems to be gaining status as a semi-standard lens. Its perspective effect is close to that of the standard lens, depending upon how it is used. Many photographers in fact prefer it over the 50mm standard lens because, while the 50mm lens offers a natural perspective, approximating that of the human eye when used in close quarters, the picture area is too limited to

produce a desired photo. In these situations the 35mm wide-angle with its near-natural perspective is truly handy and serves the role of a standard lens. Even though it is now recognized as a semi-standard lens, one should be careful not to forget that it is a wide-angle lens or ignore its wide-angle effects, which are hard to control if not used carefully.

The wide-angle effect of the 35mm lens does not appear very pronounced in the viewfinder. The danger of it as a standard lens is that the image seen in the viewfinder is deceiving. For this reason, if one is not familiar with it, it is best to use it for compositions emphasizing wide-angle perspectives, as in contrasting foreground subject matter against the background. For example, contrasting the broad width of a long stretch of road right in front of the viewer with the very narrow width at the horizon, or relating the broad base of a skyscraper to the narrow top of the tower in the clouds.



While the effects of a 35mm wide-angle lens are not strongly pronounced in the viewfinder, the prints you get might be disappointing because of perspective distortions that you did not intend. Photographs of people, for example, may show protruding hands and feet, disproportionate shoulders and other undesirable effects. 35mm lens users should keep in mind that it is a wide-angle lens, and care must be taken in how it is used.

The 28mm wide-angle, on the other hand, long known as a super wide-angle lens, offers true wide-angle effects and is probably the best choice among the wide-angles and super wide-angles. For beginners, in particular, it is better to start with a 28mm lens than go directly to the difficult-to-use super wide-angle lenses. The 28mm will also help them develop the skills of a photographer more quickly. Rather than reading about its advantages, a beginner would do well to get a 28mm lens and use it to see what it can offer. Because the effects with it are more natural than the extreme

effects of the super wide-angles, it is the universal standby of a great number of experienced photographers.

The 24mm wide-angle lens, with roughly half the focal length of the 50mm standard lens, is an important standard for photographers who use 50mm as a standard for the focal length of lenses they select. Using this standard, they have many possibilities for a wide range of situations. For example, by doubling the 50mm standard, which is twice the focal length of the 24mm lens, the photographer will arrive at a 100mm focal length. Doubling this, he gets 200mm which becomes 400mm when it is doubled. (In such a system, the 35mm wide-angle, halfway between the 24mm and 50mm lens, is also important.)

While the 24mm lens is classified as a super wide-angle, relatively speaking, it does not have an extremely short focal length and the perspective effect is not dramatically pronounced. This makes it the easiest to handle among the super wide-angle lenses. The perspective effect with the 24mm lens is, nevertheless, clearly noticeable and, if it is not used skillfully, it could produce surprises such as subjects appearing smaller than anticipated at middle distances. When skillfully used, however, it can be an important wide-angle lens, but it is best to work in close with the subject almost jutting out from the frame.

The 21mm focal length lens is where the truly pronounced effects of the super wide-angle lens begins. To use this lens effectively, one must be knowledgeable about the photography principle of "work in close" and be aware of the subject deformation that is produced by super wide-angle lenses. Using the 21mm lens, it is possible to get exaggerated wide-angle perspectives together with a pan-focus effect or, to play down both the wide angle effect and get unique images by choosing the picture angle carefully.

The 18mm lens, the widest of the wide angles in the Zuiko group, offers a 100-degree picture angle and is excellent for photographing at close quarters or in small rooms. This lens offers the most extreme perspective effect of the wide-angle lenses and requires a lot of experience to use these effects advantageously.

The OM System Zuiko Interchangeable Lenses

Some of the special features of the OM System Zuiko wide-angle lenses are particularly useful. One feature is the choice of two lenses of the same focal length.

For example, the 21mm F2 and F3.5 models. The main difference between them is the lens speed, which, in addition to focal length, is another important point to consider in selecting interchangeable lenses. Faster lenses, or lenses with a wider maximum aperture, such as the F2, of course, let in more light, hence, produce a brighter image on the



viewfinder screen and are easier to focus in dim lighting.

It is also important to note that wide-angle lenses have a deeper depth-of-field than longer focal length lenses and are harder to focus when pin-point focusing is required. In this respect, the faster wide-angle lenses are more advantageous as they allow you to use faster shutter speeds. This lessens the chance of camera "shake" which causes blurred images. The faster lenses are, however, more expensive and it may do just as well to have a slower lens, depending on whether you photograph often in low light. Ultimately, to decide which is the best for personal requirements, these factors have to be weighed: lens speed advantage vs. costs vs. need.

One factor that always had been considered in selecting faster lenses was bulkiness. This has been eliminated with the compact OM System providing the faster lenses that are far more compact than conventional models. Particularly notable is the 21mm F2 model, which has only a 55mm filter size and is the world's first F2 lens in its class. There is also the 24mm F2 model which is also the first F2 in its class.

The 28mm F2 model with a 49mm filter diameter is even smaller. In fact, the 49mm filter size is a common standard for the OM System interchangeable lenses. This filter size is offered on models from the 21mm F3.5 super wide-angle to the 200mm F5 telephoto

(the latter presently available in Japan only) which is very convenient for the many photographers who select their lenses based on filter size.

There are two more wide-angle lenses that are worth particular mention, especially for their technical merits. These are the Zuiko Shift 24mm F3.5 model and the Zuiko Shift 35mm F2.8 model. In addition to the standard wide-angle perspectives, these feature a special shift movement that corrects the wide-angle perspective which distorts buildings, etc., giving them an unnatural appearance. These lenses are very convenient for architectural photography. This added capability available on 35mm-format OM System cameras is a great boom to 35mm photography. (Until recently shift lenses were limited to larger format camera systems.)

Both of these models will be discussed in another article. The new 24mm Zuiko shift lens, which is the world's first super-wide angle shift lens, provides added advantage to the 35mm format in the world of architectural photography.

Recently, many high-speed films have appeared making low-light photography much more enjoyable. Subjects that have normally required a flash unit can now be photographed more clearly, more or less as we see them with the eye in low lighting. However, I feel that films with ratings higher than ISO 400 in contrast to other high-speed films, have shown a perceptible drop in quality because of pronounced grain. For these low-light photographs, I chose an ISO 200 film as a generally accepted high-speed color film that gives good results in low lighting. The fact that viewfinder was quite bright, and I was using a fast film, together with a fast lenses, made shooting quite easy. In addition, the compactness of the OM System Zuiko wide-aperture lenses was very convenient. **VA**

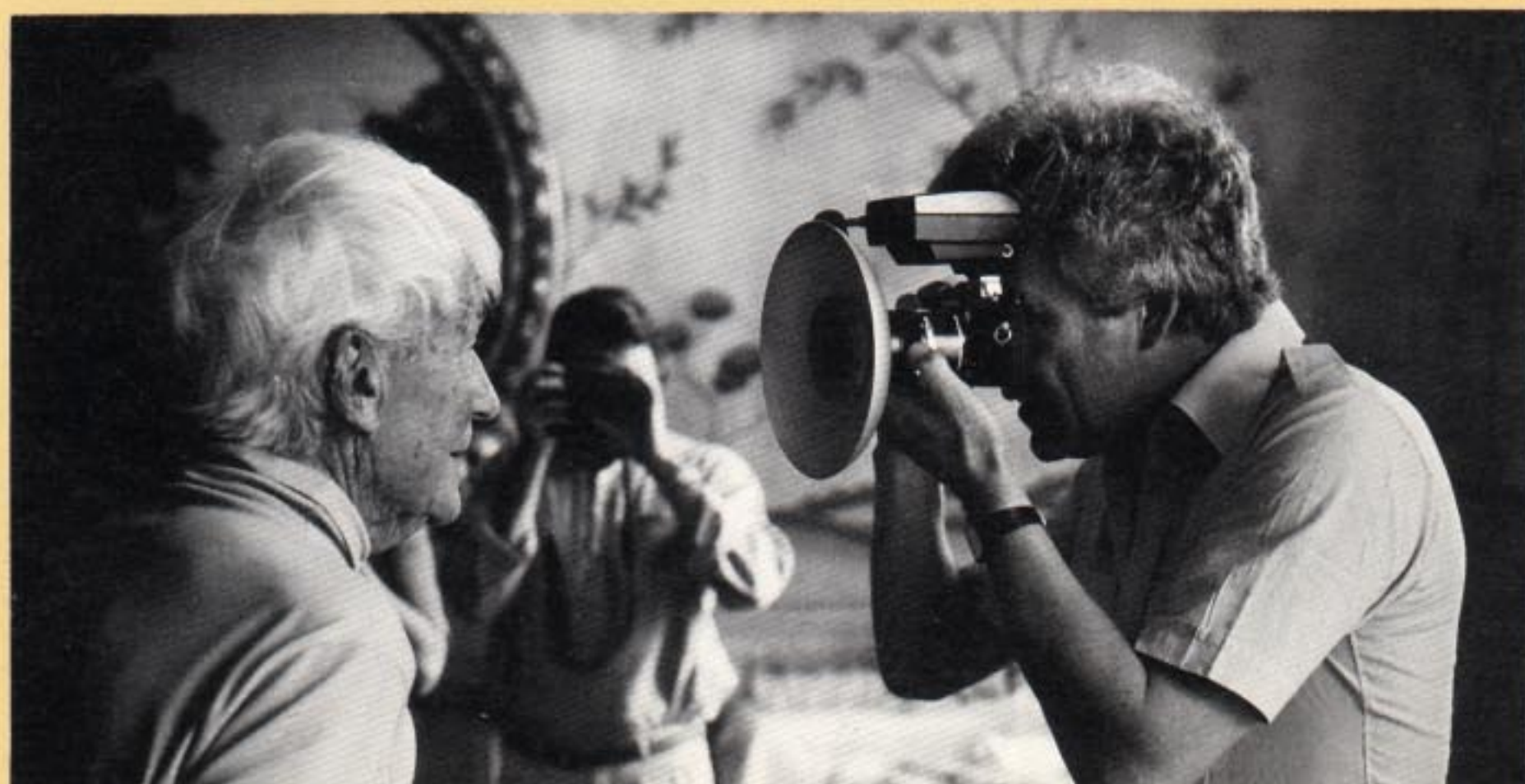
Kazuo Taira

Zuiko Interchangeable Lenses

⊙ Automatic correction mechanism against close distance aberrations

TYPE	LENS	ANGLE OF VIEW	OPTICAL CONSTRUCTION ELEMENT-GROUP	F-STOP RANGE	MIN FOCUS (ft.)	WEIGHT (oz.)	LENGTH	FILTER				
								48mm	49mm	55mm	72mm	100mm
SUPER WIDE-ANGLE	ZUIKO 18mm F3.5	100°	11-9	3.5-16	0.25m (0.8) ⊙	250g (8.8)	43mm				⊙	
	ZUIKO 21mm F2	92°	11-9	2-16	0.2 m (0.7) ⊙	250g (8.8)	44mm			⊙		
	ZUIKO 21mm F3.5	92°	7-7	3.5-16	0.2 m (0.7)	180g (6.3)	31mm		⊙			
	ZUIKO 24mm F2	84°	10-8	2-16	0.25m (0.8) ⊙	275g (9.7)	48mm			⊙		
	ZUIKO 24mm F2.8	84°	8-7	2.8-16	0.25m (0.8)	185g (6.5)	31mm		⊙			
WIDE-ANGLE	ZUIKO SHIFT 24mm F3.5	84° (max. 100°)	12-10	3.5-22	0.35m (1.2)	510g (18.0)	75mm					
	ZUIKO 28mm F2	75°	9-8	2-16	0.3 m (1.0) ⊙	245g (8.6)	43mm		⊙			
	ZUIKO 28mm F2.8	75°	6-6	2.8-22	0.3 m (1.0)	170g (6.0)	32mm		⊙			
	ZUIKO 35mm F2	63°	8-7	2-16	0.3 m (1.0)	240g (8.5)	43mm		⊙			
	ZUIKO 35mm F2.8	63°	7-6	2.8-16	0.3 m (1.0)	175g (6.2)	33mm		⊙			
	ZUIKO SHIFT 35mm F2.8	63° (max. 83°)	8-7	2.8-22	0.3 m (1.0)	310g (10.9)	59mm		⊙			

Olympus Elements II Cap d'Antibes

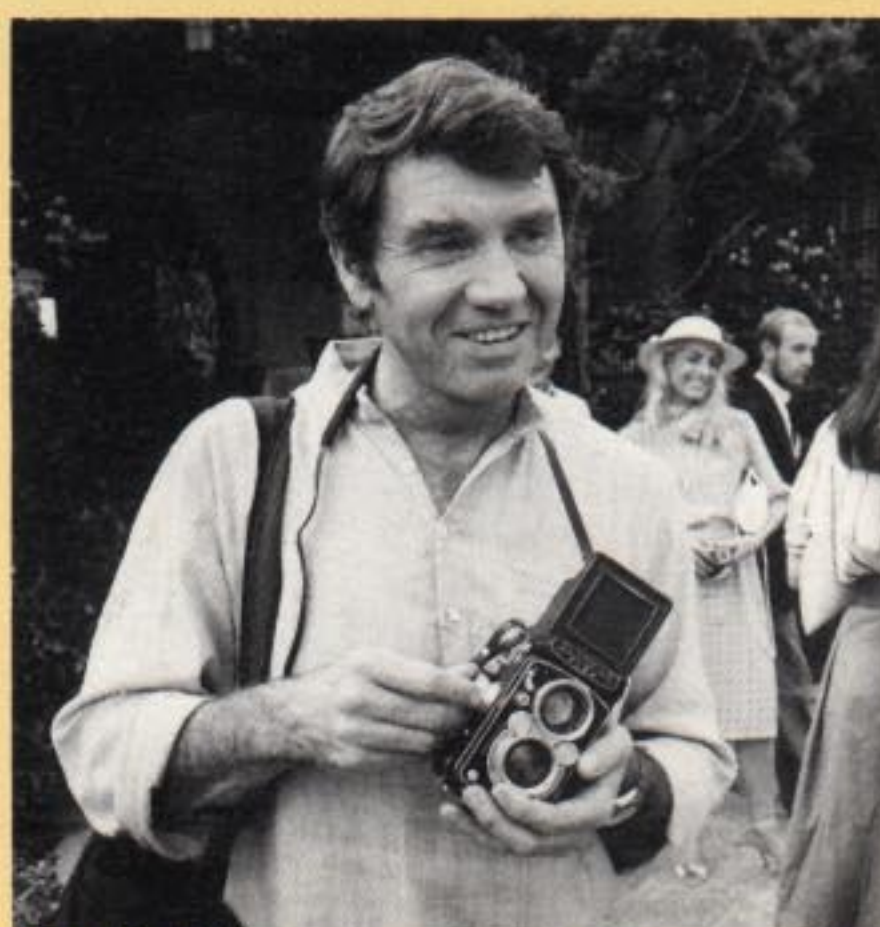


Jacques Henri Lartigue

Patrick Lichfield

From October 6 to 10, 1983 Olympus U.K. and Olympus Europa hosted Elements II, an informal meeting of nine of the world's leading photographers at Cap d'Antibes in the south of France. Those taking part were David Bailey, Ralph Gibson, Eikoh Hosoe, Jacques Henri Lartigue, Annie Leibovitz, Patrick Lichfield, Don McCullin, Helmut Newton and Alice Springs.

The event provided an opportunity to discuss future possibilities not only for Olympus cameras but for photography in its widest sense. The photographers present responded with great enthusiasm to the new Olympus OM-4 which itself was conceived in the spirit of returning creative control to the photographer.

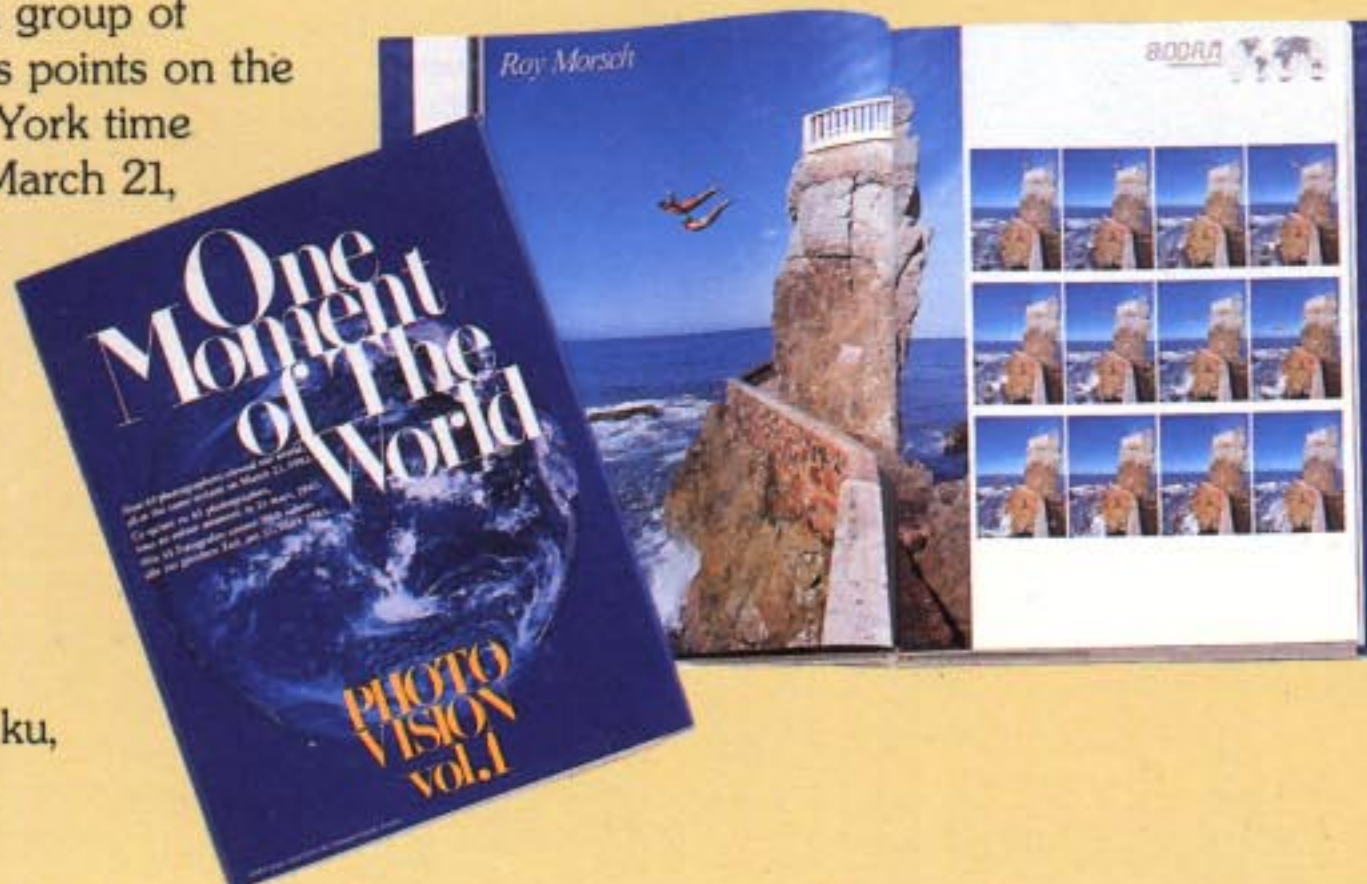


Don McCullin

PHOTOVISION Debuts

Olympus announced the introduction of a new book, PHOTOVISION Vol. 1, an annual exhibition of the world's great photography.

This year's PHOTOVISION is divided into three sections; "One Moment of the World," a compilation of photos taken by an internationally renowned group of photographers at various points on the globe at 9:00 a.m. New York time on the spring equinox, March 21, 1983; "Vision Then and Now," which includes a look at the history of photography and a look at the future through the eyes of Olympus designer Yoshihisa Maitani; and "An Image of Japan," a photo essay on Shinjuku, one of Tokyo's major commercial districts.



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Bronze cup for
the Most Excellent
Product Award



Olympus OM-4 Wins Acclaim for Versatility

The Annual Nikkei Product Awards recognize the most outstanding products released during the year. The recent 1983 contest chose 52 winners from 17,000 entries, including the Olympus OM-4 in the household appliances, cameras and automobiles division. Criteria include after-sale service, including the warranty, as well as development of consumer markets.

The announcement of the winners was made on February 6 at Tokyo's Hotel Okura.

One key to this kind of recognition, according to chief OM-4 designer, Director Yoshihisa Maitani, was expanding the recording capacity of the OM-4's central processing unit without sacrificing compactness.

To obtain a copy of PHOTOVISION Vol. 1, contact:

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Kon Sasaki's Macrophotography

Macrophotography Used to Be Hard Work

To give you a better picture of the wonders of the present Olympus OM System, I would like to tell you what close-up and macro-photography was like back when I first got involved in it in 1960.

The equipment we had then for macro-photography consisted of a camera with built-in range finder, a bellows with a general-purpose photographic lens and a Visoflex placed between the bellows and camera. When closer shots were required, I would replace the general-purpose lens with a microscope objective lens. I also used a device of my own creation, an enlargement lens and an extension tube for magnification. None of the excellent equipment available today existed at that time. Each photographer in macrophotography had his or her individual approach. It took a great deal of time and sweat to get the kind of photographs you really wanted.

Nature photography is very popular now. But I do not think that the situation is any different than it was 10 or 20 years ago. It was much the same, a lot of people wanted to emulate pictures of the great outdoors. Many times people would come and ask me to show them how to take outdoor pictures. Some even wanted to be taken on as an assistant. To each one, I would give a detailed explanation of the techniques for taking nature close-ups and assign a homework project. But no one ever came back to show me any work. The subject I was devoting most of my time to was the birth of small animals, particularly insects, and almost everyone who visited me then was very interested in the theme. I assumed they came because they wanted to do the same thing, but even after a detailed explanation of how to take the pictures and where materials could be obtained, most of them were never heard from again. But I think I know the reason.

I have stuck to my work, developed my own techniques and never saw any reason to hire an assistant. I also expected those I tutored to find their own ways and techniques. I think the reason no one came back was that they just gave up. Taking pictures with the equipment available then was just too difficult.

Let me illustrate this. Let us assume we are photographing an ant. With a 24mm × 36mm film surface it seems we would have



Hermit Crab; in laid eggs ×4

enough space to fit everything in, but remember that our subject is a moving insect. The speed of a moving insect can be astonishingly fast when you are trying to keep the viewfinder homed in on the subject. One second of confusion in getting the fine focus adjusted and the shot is lost.

But, hardest of all is determining adequate exposure for strobe lighting. If you are trying to capture the exact moment of birth of a small insect, the opportunity lasts but an instant. It takes hours, even days of preparation and waiting. The moment you are waiting for can happen at any time, day or night. You worry most while waiting whether or not your exposure is adequate and correct. It is difficult to obtain adequate exposure using strobe lighting for close-ups. This, I believe, was the greatest difficulty facing those who came for my introductory course years ago.



Kon Sasaki

No wonder they never came back.

Look at the table I completed in January 1967 for testing exposures in macrophotography. I used it to quickly determine the proper exposure from 1/2x to 7x magnification. The left column lists the film used for test shots. Above is the magnification and distance between the lens and the subject. At the bottom is the distance from strobe to subject. I added a color chart because I had to know the color brightness and reflectivity of the subject and to take into account the distance from the strobe to the subject. The chart on the right shows camera, bellows and extension tube combinations.



It took several years just to make these charts. Macrophotography as a whole took a great deal of time and effort. The lack of the right kind of equipment made things hard, and it's difficult to imagine what it was really like back then, especially with all the good equipment available today.

The Olympus OM System

I got my first Olympus OM camera in November of 1977. Strobe exposures for close-up and macrophotography are automatic and accurate, close to the ideal. The OM System is certainly a world leader. Electronically controlled exposure stops automatically when just the right amount of light passes through the lens for absorption by the film. The system accurately adjusts exposure in either natural or strobe lighting. As long as the operator does not make a mistake, the camera will take care of all exposure adjustments. If those youngsters who wanted to assist me years ago had only had this system, they would have showed up with excellent work.

The OM System solves the problems of

close-up and macrophotography under strobe lighting and has opened up the field to everyone. Much of the work done in nature photography today is of flowers and insects. Even beginners are able to come up with outstanding shots. The OM System has given much to these achievements.

Let us look at the system and see why it rates so much attention. The camera demonstrates its power best in its TTL Direct "off-the-film" Light Measuring method, especially the TTL "OTF" Auto Flash exposure. This is a tremendous aid in any photographic situation; worries over exposure setting are eliminated.

Next the lens. Olympus designers have worked hard to develop true macrophotography lenses. They've engraved the magnification next to the lenses name, as for example, on the 80mm lens Zuiko 1:1 macro. The Zuiko macro 20mm, 38mm, 50mm, 80mm and 135mm lenses were designed with magnification and distance between the lens and the subject in mind. These lenses can be changed according to the purpose you have in mind. They give excellent copy reproduction, fine focusing and natural color.

Choice of focusing screen has a great influence on close-up and macrophotography. If you are looking into a frame and focusing screen that is not clear and sharp, you could miss the precise moment for depressing the shutter. Eye fatigue dulls your timing and reduces the chance of getting the right shot. The OM System has 14 different focusing screens so that you can use just the right one for your purpose. I like the matte type 1-1, 1-4 and 1-11 for their extreme ease of use. Ability to change focusing screens according to the subject is not only convenient, it is a must for accurate, precise shooting. Making those

changes is really simple, too.

You will need a good bellows or extension tube for macro- and close-up photography and Olympus has both. The painstaking effort that has gone into their auto-bellows is plain to see.

Large bellow pleats virtually eliminate internal reflection. The slightly larger bellows adds weight and greater stability for indoor shots or anywhere else that mobility is not at a premium. Use the Telescopic Auto Tube indoors in the same way as you would the bellows, but you will find its greatest advantage outdoors. Its light weight and maneuverability are something you just cannot have with a bellows. The telescopic tube is probably the most advanced product of its type in the world. It is an easy-to-operate tube that can be securely locked in place. Changes in magnification are smooth and quick. Stability in hand-held use is remarkable.

In macrophotography and close-ups, the aperture is often stopped down for better depth of field. Increasing the distance between lens and film surface for higher magnification overrides the F value on the lens. Since even at 1:1, effective luminous energy may be reduced up to 2 f-stops, as magnification increases, the amount of luminous energy reaching the film becomes extremely low. This, of course, reduces shutter speed. That means small moving animals or grass blown by the wind will be blurred, you'll lose important details or your shot will be out of focus. The most effective way to eliminate blur and catch subject detail accurately is the skillful use of strobe light.

The OM System strobe provides 1/40,000 of a second flash and the computer in the camera body controls incident light and adequate exposure. The system truly satisfies all macrophotographic conditions.

Hibiscus x1/3



Combining camera body and OM strobe eliminates worries about overexposure. The great deal of effort macrophotography used to require could be attributed directly to the lack of accurate exposure measurement. It caused a lot of my associates to give up and leave the field, something few of us could understand today.

Since the OM System went on the market, the equipment, particularly that for close-up photography, has made astonishing progress. Difficulties in obtaining adequate exposure are all taken care of by the camera. Nature photography, pictures of small animals and plants, are being done by everyone and much more skillfully than ever before. This popularity and greater freedom of artistic expression is directly attributable to the TTL "OTF" Auto exposure for strobe.

My Macro System

I would like to tell you about the system I use for macro- and close-up photography. In indoor photography subjects are often very small and narrow. Most have to be taken at $\frac{1}{2}x$ to $3x$. The lenses I use most frequently are the Zuiko macro 38mm F2.8, 50mm F3.5, 1:1 macro 80mm F4 and the 135mm F4.5. I always carry a Zuiko macro 50mm F3.5



Macro system

attached to an OM-4 body. There are many possibilities with this combination and it fills the bill for most macro shots. It is a good combination for beginner or professional. But you have to use a little bit more care when taking $1x$ or $3x$ shots. If you are careless, you could wind up with a picture out of focus or a picture suffering from camera blur. Make careful preparations and use a tripod or strobe.

In outdoor photography, I concentrate on scenes of insect eggs or chrysalises. These pictures have to be taken while observing the growth stages. I try to observe as small an environment as possible, and set the shot to avoid any sense of artificiality. After directing the camera on the subject, I have to wait for the right moment to click the shutter. That is probably the most difficult part of the process. Making the wait as comfortable as possible

requires a number of contrivances and my indoor setup is the result of a series of improvements over the years. The wait sometimes takes two or three days and nights.

My outdoor setup is also arranged for convenience.

I use an OM-4 camera and I have two lenses ready: the Zuiko 1:1 macro 80mm F4 and the 135mm F4.5 with a Telescopic Auto Tube 65-116 rather than a bellows. I use the 135mm lens with subjects I cannot get close to, such as insects. The 80mm lens is for higher magnification. Usually when I go out, I have the Zuiko macro 50mm F3.5 on an OM-4 body and an Auto Extension Tube 25. It is an easy-to-assemble combination with great flexibility.

These are general-purpose combinations. But which strobe best suits which photographic situation?



Pansy $\times 2$



Garden Zinnia $\times 3$

The T32 and T20 electronic flashes are clip-on types, but they can be converted to grip types by attaching a power bounce grip. For Ring Flashes, I like the T10 Ring Flash 1 and the T8 Right Flash 2. The T10 has a polarizing filter to cut down reflections and the T8 has Reflectors 1 and 2 with diameters of 200mm and 150mm for soft, shadowless shooting. Use them when you want perfect shooting in lighting without shadows.

The most appropriate light source for outdoor strobe photography is the T28 Macro Twin Flash. Set the strobes in front of the lens, and you can change the lighting angle as you want. The strobes can also be used separately. Of course, a flash can be used indoors as well as outdoors, but the nicest thing about this lighting system is its ease of handling. This alone makes me happy because handling strobes used to be a cumbersome task. I would also like to mention that the T28 Macro Single Flash is available.



Long-legged wasp:
nest building and egg-laying $\times 1$

And there is more than one way to use a strobe, or extension tube or a bellows. I try to use every piece of equipment for 100% + efficiency. You have to make up for deficiencies by devising new ways of using equipment.

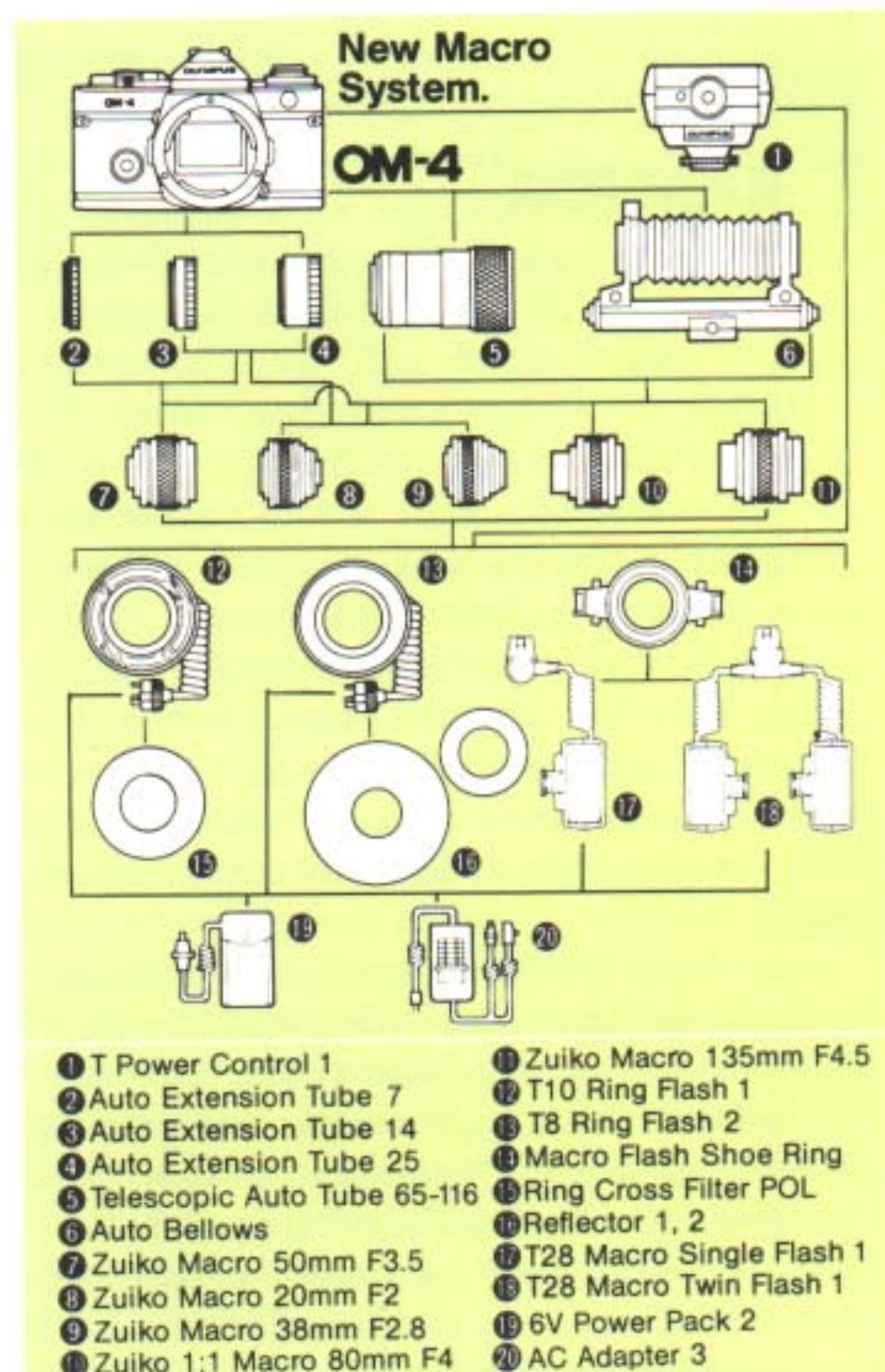
Anybody Can Use an OM System

Since the OM System first went on sale in 1972, a wide and truly wonderful range of functions has been put on the market. Up to 9 strobes can be simultaneously fired for accurate exposure using only the TTL "OTF" Auto Flash.

Of all the devices that can be incorporated into an OM-4 camera body, the small spot light metering method is the one you can use very effectively in measuring backlighting. The light from up to eight spots can be measured and the averaged value transmitted to the shutter mechanism. The Shadow and Highlight controls function to make blacks blacker and whites whiter. Memory exposure is available when necessary.



OM-4
+ Zuiko Macro 38mm F2.8
+ Telescopic Auto Tube 65-116
+ T28 Macro Twin Flash 1
+ T Power Control 1
+ Macro Flash Shoe Ring



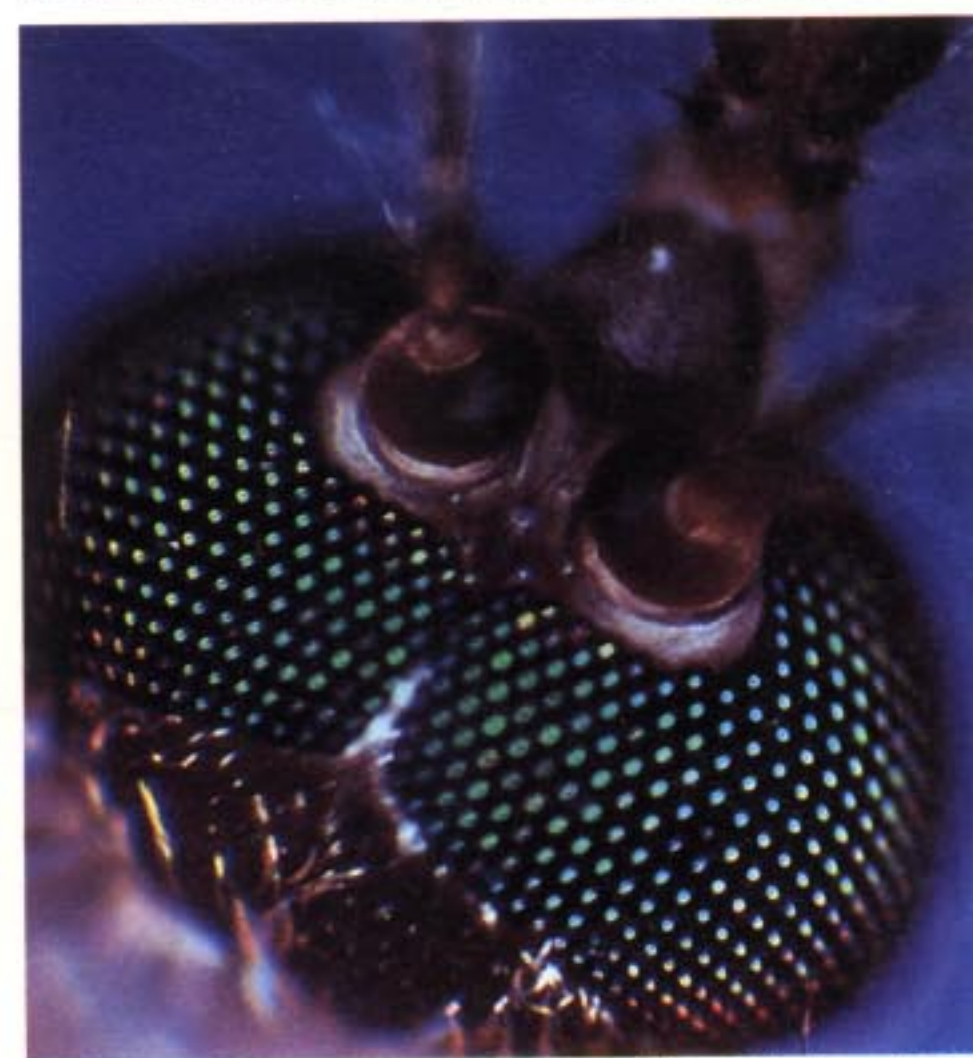
The Camera is Filled With Creative Design Ideas and Fine Detail

I do all of my work using the OM System and am always able to obtain satisfactory results without worrying about failure.

This is a system camera anybody can use to take beautiful pictures of any subject. OM



Sunflower $\times 1/5$



Mosquito head $\times 20$

System cameras are the only ones I can say this about.

The wonders of the OM System are shown by the increasing number of people actively involved in nature, close-up photography and photomicrography.

It has been 25 years since I started in nature macrophotography. It was a difficult field then and I have seen its entire ebb and flow. But now, before me, I see a wonderful camera system that even money could not buy in those days. It is even more surprising to me now to realize that I own such a camera. **VA**

Sports Photography

by Hideo Kawazu

How to Shoot Sports

It has been often said that sports is drama without a scenario because the outcome of a game or competition is determined sometimes only after a completely unexpected reversal of the expected results takes place.

Spectators describe sports events from their own individual standpoints. They also tend to predict what might be the outcome of such events in much the same way. Much to their excitement, such predictions and guesses sometimes come true.

Sports photography, however, objectively expresses the human drama in sports. What does it mean to "express the human drama in sports"? Is there an appropriate method of doing this? And, if photography is such a method, what kind of photographs are good sports photographs?

The average reader comes in contact with sports photography in a number of ways: in the sports page of the daily morning newspaper, in a sports newspaper that can be bought at the station newsstand, and the special weekly and monthly magazines that feature sports photography.

The sports photographs that one sees in

newspapers and magazines are rather conventional because these publications report the news and inform. This is especially true of newspapers, where news coverage has first priority. A shot of well-known pro-baseball player is featured because the interest lies in how many home runs he hit in improving his season average. A soccer photo may show who scored an important goal at a certain moment in a game. A rugby photo might show the play that led to scoring an important point. Among the sports photographs that can be found in the newspapers every day, no doubt these kinds of shots are the exciting ones, even though they tend to be rather conventional.

In spite of this, there are still many possibilities for professional as well as amateur cameramen to freely create sports photographs that are unusual. Let us then look at this aspect of sports photography, studying from the following four aspects:

- 1 — *Camera equipment*
- 2 — *Film*
- 3 — *Outfit*
- 4 — *Various sports-related information*



1 — Camera Equipment

The action in a sports event is usually fast and intense. Look at a track and field meet, for example. At several locations on a broad field and on the track various events are going on at the same time. Because of this the cameraman has to move about quickly which means that the selection of the camera equipment becomes very important.

I recommend using two 35 mm SLR bodies, one with a motor drive. The lenses should be chosen according to the sports event to be covered: a telephoto lens with a focal length of between 200 and 400 mm, and a 1.4x and a 2.0x teleconverter to make it more versatile and put you at ease; a wide-angle lens for snapshots; and, ideally, a zoom lens with a focal length of 100 ~ 200 mm. It is useful to have a light meter for exposure readings.

2 — Film

As sports action is fast, you need high-speed film. And while color itself is important, attention should be paid to getting good color contrast. You can do this by using the finest grain film as the shooting conditions will permit. For indoor sports events and events held at night, high-speed color film is the only real choice. For outdoor events in fine weather, use ISO 64 reversal film.

Shooting sports scenes does not necessarily mean being limited to fast shutter speeds. I like to use slow shutter speeds at times.

Choose the appropriate film based on the weather condition, the season and the type of sports event you are going to shoot. When shooting indoors, determine beforehand whether the lighting is daylight type or tungsten type.

Avoid using a tripod if possible. While moving around and trying to catch the action there usually is not sufficient time to mount the camera on a tripod. If the lens is too heavy for hand-held shooting, I recommend using a light monopod.

Small equipment is easiest to use in sports photography. Camera, lenses or motordrive should be as small as possible and lightweight.

One could also say that shooting sports scenes is a kind of sport in itself, as it demands physical strength, mental strength and constant improvement.

3 — Outfit

It can be said that agility makes good sports photographs. It would therefore be out of place to come to a sports stadium wearing shiny leather shoes. Sneaker-type light shoes are more suitable. A jacket with big pockets, a so-called "cameraman coat," or the kind of jacket used for fishing, is also useful. In the summertime, use a light jacket of the same type. Shooting a soccer game or a rugby game in wintertime can be very cold work. Use a down jacket and, most important, a pair of nylon-type overtrousers.

One often sees cameramen carrying a camera bag with its contents beautifully arranged. A bag filled to capacity, however, can prove to be very inconvenient when it comes to actual shooting or to changing location on the field. Therefore, it is important that the camera bag should have extra space. A hard case can be convenient as it could serve as a chair or a support, but when moving around a lot it will quickly become a nuisance. A soft bag is better. Another alternative is a backpack-like bag that can be slung over the shoulder.

I have three bags or more, each arranged for different types of work.

4 — Various Sports-Related Information

The successful outcome of your shooting will depend heavily on having a lot of essential sports-related knowledge at your command before setting out on your task. It will help you to make important decisions correctly. Decisions such as the selection of the main focal length of the lenses you are going to use, the selection of appropriate film and the choice of a suitable outfit.

Another important point is to know well the type of sport you are going to shoot. This does not necessarily mean knowing the rules of the game, but rather to have an understanding of the game. Apart from shooting sports, one should, if possible, also like sports.

The attractiveness of a soccer game is as different from that of a rugby game as the attractiveness of a gymnastics event is from that of a rhythmic gymnastics event. Each sport has its own way of fascinating people and each individual spectator has his or her own way of being fascinated. In the same way, the distinctive character and expression of a sports photograph mostly depends on the individual cameraman's taste and priorities.

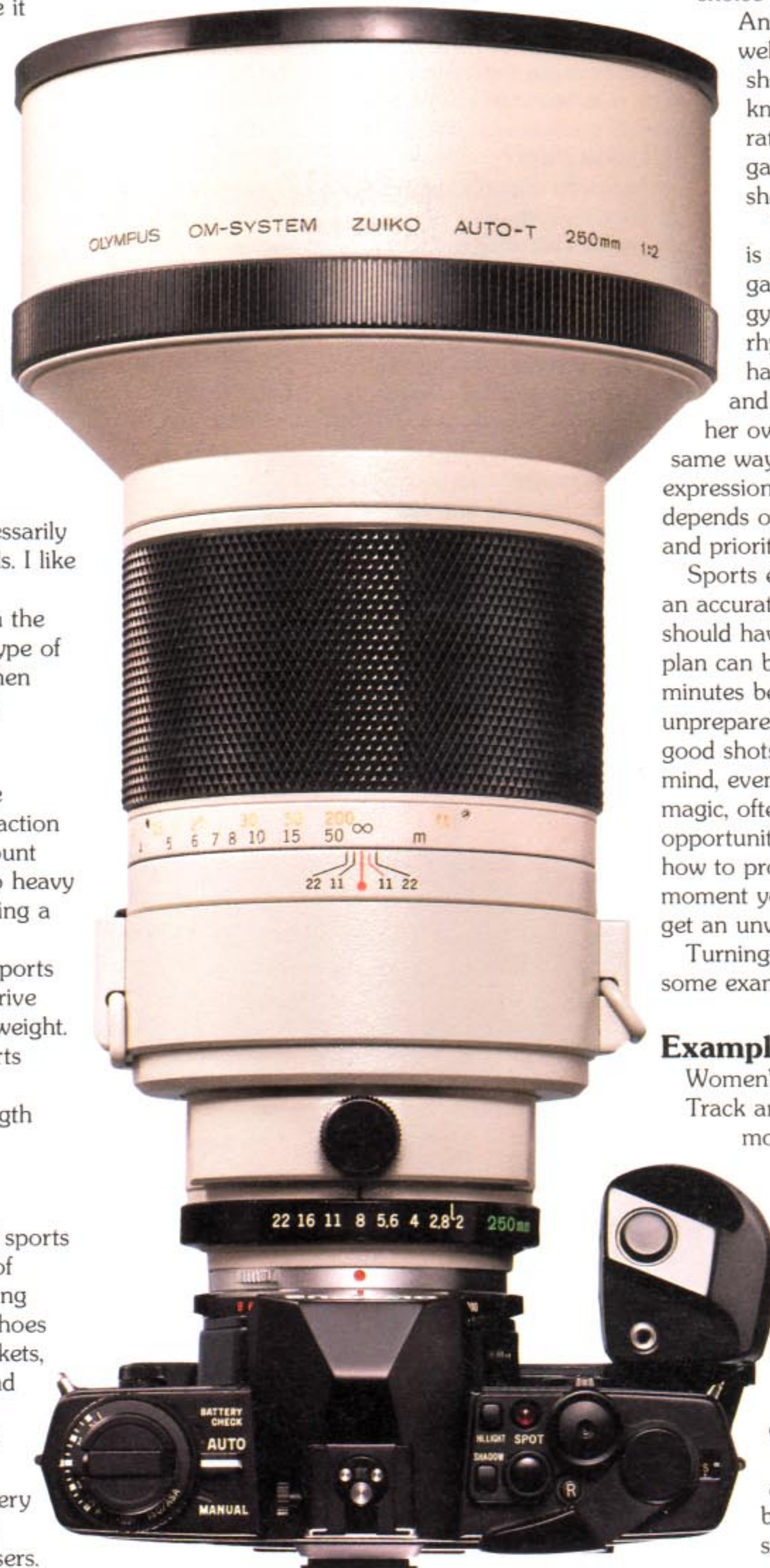
Sports events do not progress according to an accurate plan. The cameraman, however, should have a plan on how to proceed. The plan can be set up the night before or only minutes before shooting. Showing up unprepared will most probably hamper getting good shots. Starting with at least some plan in mind, even not a detailed one, will, as if by magic, often reward you with a real opportunity. If you push ahead with no idea of how to proceed, most likely, at the decisive moment your timing will be off and you will get an unwanted, useless picture.

Turning then to practical use, let us look at some examples and shooting techniques.

Example 1

Women's 100-meter hurdles.

Track and field events are my favorite motifs. This photo was taken in the Olympic Stadium in Montreal — the grass and tartan track creating a beautiful contrast in the dazzling sunlight — with a 400 mm telephoto lens, using Kodak Kodachrome ISO 64, from a position high in the grandstands. I wanted to emphasize the brightness of the colors and the composition of the scene and chose the focal length of the lens accordingly. The photo tries to broadly represent the world of sports in a single shot.





400mm F6.3 1/500

Example 2

Again, women's 100-meter hurdles, from the side. Although a fast shutter speed was used, the photograph still beautifully expresses each individual athlete's lively motion.

During events such as the Olympic Games, cameramen are assigned working spots and cannot move around freely. During the preliminary events there may be some opportunities, but, as there are always official attendants around, one cannot change positions as freely as one might like. Constant changing would make one a familiar face anyway, and moving up and down the grandstands, carrying heavy camera equipment, requires great efforts. If one is constantly moving it is possible to get pictures that are different from the ones other people take.



400mm F6.3 1/500

Example 3

High jump.

This is fascinating and impressive to experience. Watching the athletes during practice sessions, studying their jumping style and the like will help to determine a good position for taking your pictures. Stopping down the lens too much can make a background a rather disturbing factor. Therefore, opening up the lens blurs out the background and emphasizes the subject. In such a situation, shooting with both eyes open



600mm F6.5 1/500

comes in handy. Use one eye for the viewfinder and the other eye for monitoring the athlete's running approach. When using this technique with the telephoto lens the subject appears to each eye to be considerably different in size. It is difficult but helps to avoid things like frame-outs and inaccurate shutter timing.

Example 4

Soccer, a game of speed and constantly changing directions in action, is extremely difficult to photograph. During the World Cup soccer matches in Spain, however hard I tried, throughout the entire one month period, I



300mm F4.5 1/500

could only manage a few satisfactory pictures. I find that to follow the ball, and bring it into focus, does not provide good photo opportunities. It seems to me better to single out a good player, aim at him and wait for him to get the ball. The example photograph was taken during the Toyota Cup. Because the sky was overcast and dark, I used high-speed film but because I wanted to be able to also express the brilliance and colorfulness of soccer, I slightly overexposed the shot. On the other hand, it seems best to underexpose the shot in rugby to emphasize the intense manliness.

Example 5

A flashy, grim-looking helmet symbolizes an exciting, truly American-style sport, American football. It is a type of sport that is said to require brains as it is a complex game with countless different formations. The players move around so skillfully that sometimes the



400mm
× 1.4 teleconverter
F22 1/15

cameraman fails to locate the ball. Using slow shutter speeds, depending on the players' movements, the play being executed and the direction of the playing, can create quite interesting shots. It could be said that this kind



of sport is very suitable for slow shutter speeds, which is one of my favorite techniques. Slight underexposure will help to avoid flat pictures.

Examples 6 and 7

Rhythmic gymnastics has been rapidly gaining popularity. The beauty of the participants contrasts with the dominant tendency today in women's gymnastics, where the contestants are constantly getting smaller and more childlike. The elegance, grace and charm can be found in abundance in rhythmic gymnastics.

As we deal with indoor sports in this case, special attention has to be paid to whether the lighting is of daylight type or of tungsten type. Shooting with high-speed film requires some adjustments and precise exposure control becomes a vital point. **VA**



180mm
F2.8 1/500



180mm
F2.8 1/500

THE XAWAY

Take Your XA Jogging

By Richard Bellak



Self-timer on Olympus XA enabled author Bellak to get himself into this shot.

The Olympus XA is the perfect camera to carry when you don't want to carry a camera. It is so light and compact that it can ride around on my belt in a tiny suede case that was meant to house a king-size pack of cigarettes. The camera accompanies me wherever I go — almost — and I am seldom aware of its presence, until I need it, of course.

I like this full-frame 35-mm because its Lilliputian dimensions are useful to me in a way that no other camera is. And more importantly, I have found that it deserves to be taken seriously as a completely professional photographic tool.

In addition to its compactness (102 × 64.5 × 40mm/4 × 2.5 × 1.6 inches), and lightness (225g/7.9 oz) the XA's other best feature is the ease with which one can "fast draw and shoot."

An especially ingenious and aesthetic design permits the user to turn on the power and unlock the shutter release by simply sliding the lens/finder cover (which acts as a dust barrier) 20mm/3/4 inch to the left with a click. A tiny 13mm/1/2-inch "stick" that juts out just below the lens allows for dual-image rangefinder focusing. The shutter release is electromagnetic and so sensitive that intent to shoot is almost all that's necessary to trip it.

Exposure is determined by setting the aperture (from f/2.8-f/22); the camera does the rest, automatically. I always try to keep the aperture set approximately to the surrounding light situation. It takes me about 6 seconds to draw the XA from its case on my hip, slide the lens/finder cover open, focus, and photograph something or somebody that has stirred my visual imagination.



The dime-size Zuiko 35-mm f/2.8 lens is excellent — quite sharp, but with one flaw: very slight vignetting. This is only apparent when photographing something with a continuous-tone background.

Two features of the camera that I especially enjoy are: the shutter with speeds that go from 1/500 to 10 full seconds; and the electronic self-timer, with 12-second delay, that both blinks and beeps. The self-timer and long-exposure capabilities are quite useful for shooting self-portraits and scenes in which there is only a hint of light. In both these situations, I simply set the self-timer, prop the camera on some fairly solid object, and very gently touch the shutter release. Occasionally, I include myself in the shot when the scene calls for it, or when I simply want to have some self-indulgent fun.

A tiny, specially designed electronic flash is available for the XA. It screw mounts easily to the camera body, has both automatic and manual modes, and weighs in at an incredible 65g/2.3 oz (without the 1.5-volt AA battery that it requires).

Biography — Richard Bellak

Richard Bellak has been photographing people for 15 years. He prefers available light and working unobtrusively, and yet "close in." He is self-taught and specializes in picture stories and psychological portraiture.

Besides photographing, he is a fair runner and mountain climber. Last summer he spent 3 weeks bicycling through the Perigord in France where he consumed gallons of excellent French wine which complimented some superb country cooking.

Film loading is quick and simple. Advancing is done by a nifty rear-winding thumbscrew. Rewinding is accomplished by pushing a release button and turning a tiny crank that a clumsy person might have some difficulty with. Film speed range is a reasonable ASA 25 to ASA 800. Backlight compensation is possible through a control that lengthens the exposure by almost two stops.

Focusing through the tiny viewfinder is not quite a delightful, sensual experience. When I make the mistake of shooting too long without a break, my vision starts to go blurry. Then I yearn for my Leica. Overall, however, I think the XA is a rather marvelous camera, though certainly not for every situation and probably not for everyone.

In a pinch, however, when you don't feel like toting a camera, it's perfect. The cleverly designed Olympus XA is uncomplex, travels well, and seldom disappoints. If it were a wine, it would be a Beaujolais. **VA**

OM Magazine Story

OM Magazine was first introduced at Photokina 1980. It appealed to the public instantly, and with the interest created, its first edition was sold out immediately. Nowadays 20,000 copies of each edition are published in German, and 5,000 copies in French.

The title "OM" does not relate directly to the OM camera owners as often assumed, but stands for Olympus Magazine. Accordingly, not only OM cameras but also the OM System units as well as Lens Shutter cameras such as AFL or TRIP AF are regularly covered in it.

The fundamental concept of the OM Magazine is that Olympus would like to insure owners of valuable cameras can always have information that they are entitled to as part of the after service when they purchase a camera.

In this connection since 1976 we have been producing a series of books titled "Edition Olympus". It has been well accepted by the public and dealers alike. Such publications, however, cannot always be up to date like a magazine which is published 4 times a year. In fact, such "After Sales Service" is to be encouraged to remain if it is essential to the owners of a system camera to develop new activities again and again so as to maintain the enthusiasm for photography.

The editors concentrate on publishing suggestions and hints that are comprehensible to the average amateur. Consequently, OM Magazine is composed of the following sections:



Editing staff: From left to right:
Wilhelm Opitz (Technics)
Dietmar Meyer (Lay Out)
Christoph Kunheim (Concept and pictures)



The first pages are dedicated to "Editorial" which treats problems and introduces photographers of a "Portfolio," with explanations for the technical reasons that led to the above.

The second part is "Forum" with important and interesting news, announcements of photo contests, Olympus novelties, and information about film.

Under "Practical Aid," suggestions show how to shoot certain photos with Olympus cameras; for example how to make passport photos for the whole family close-up photos of jewels, photos of children, or how to shoot with "available light."

The following section called "Equipment for special uses" gives recommendations on what kind of equipment to take along, for example, on study tours, and, of course, references are repeatedly given to new Olympus cameras and system units. Queries to the editors are also answered here.

A considerable part of the magazine is dedicated to the portfolios, in general three portfolios are published for each issue. They include the excellent works of famous

photographers and amateurs. OM Magazine helps Olympus to make important contacts in the world of active photography. The "testimonials" it receives are the best proof of sophisticated Olympus products. It is of great importance that the magazine gives the impression of high quality because it is directly related to the Olympus product quality.

OM Magazine is currently available in German and French. It is published 4 times a year in January, April, July and October. The major part of the German version is distributed in Germany, Austria and Switzerland. Also it is sold in photo shops.

The French copies are in distribution mainly in France, but also in Belgium and Switzerland.

The readership is made up of all social classes since the enthusiasm for photography does not depend upon social status.

OM Magazine contributes a great deal to the image enhancement of Olympus Optical Co. and Olympus cameras.

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Photographing Dew Drops

by Goro Watanabe

Unexpected discoveries with the camera. The focus for this first issue is on the beauty created by reflections. The Grand Prix winners of the 4th Olympus Photo Contest are introduced.

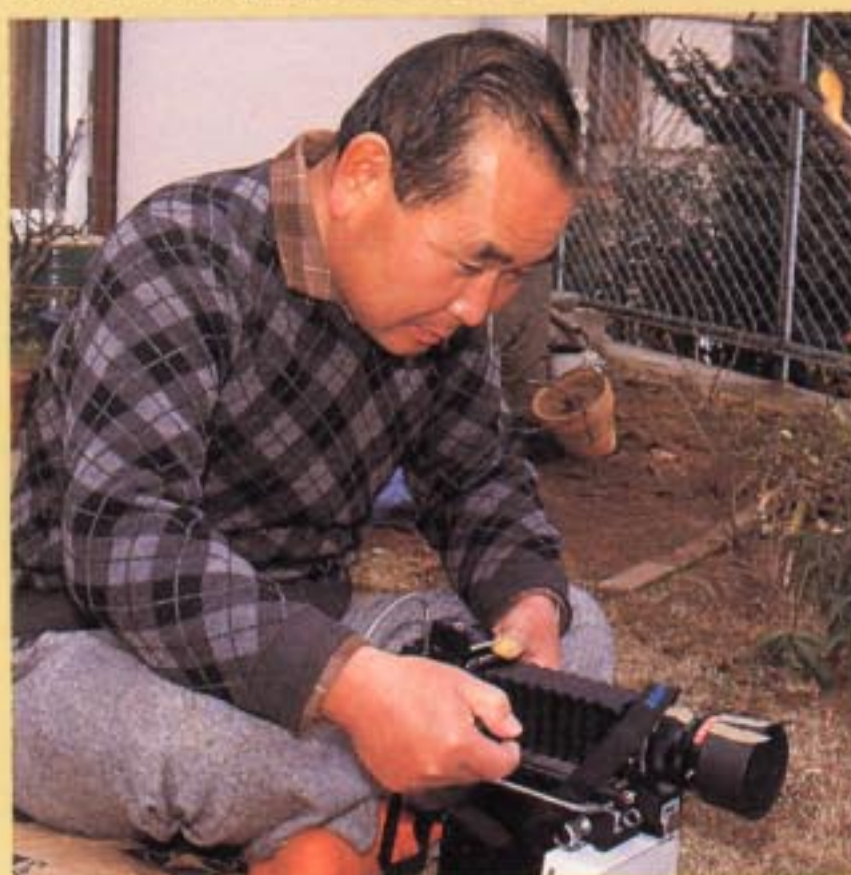
I first started hiking in the mountains more than thirty years ago and found there an environment that teaches much about the mysteries of life. I remain captivated by the magnificent, awe-inspiring creations of nature that abound in those peaks and plateaus. Eight years ago I spied something so beautiful that I knew I had to try to capture it on film.

The number of photographs I have taken and found truly satisfying are so few I could count them on my fingers. I doubt that anyone else completely understands the feelings I have when I see a completed photo that I think is truly a masterpiece. Through such works I know the wonders of life.

I would like to tell you how I came to



Kochoran (papilionaceous flowers)



Mr. Watanabe photographing

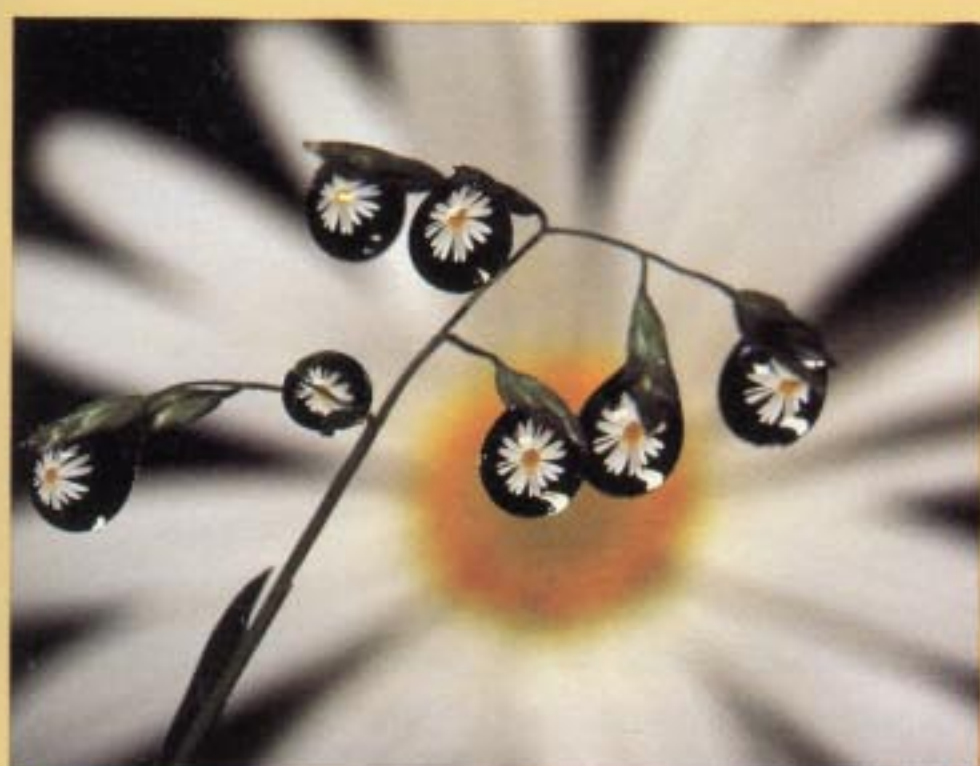
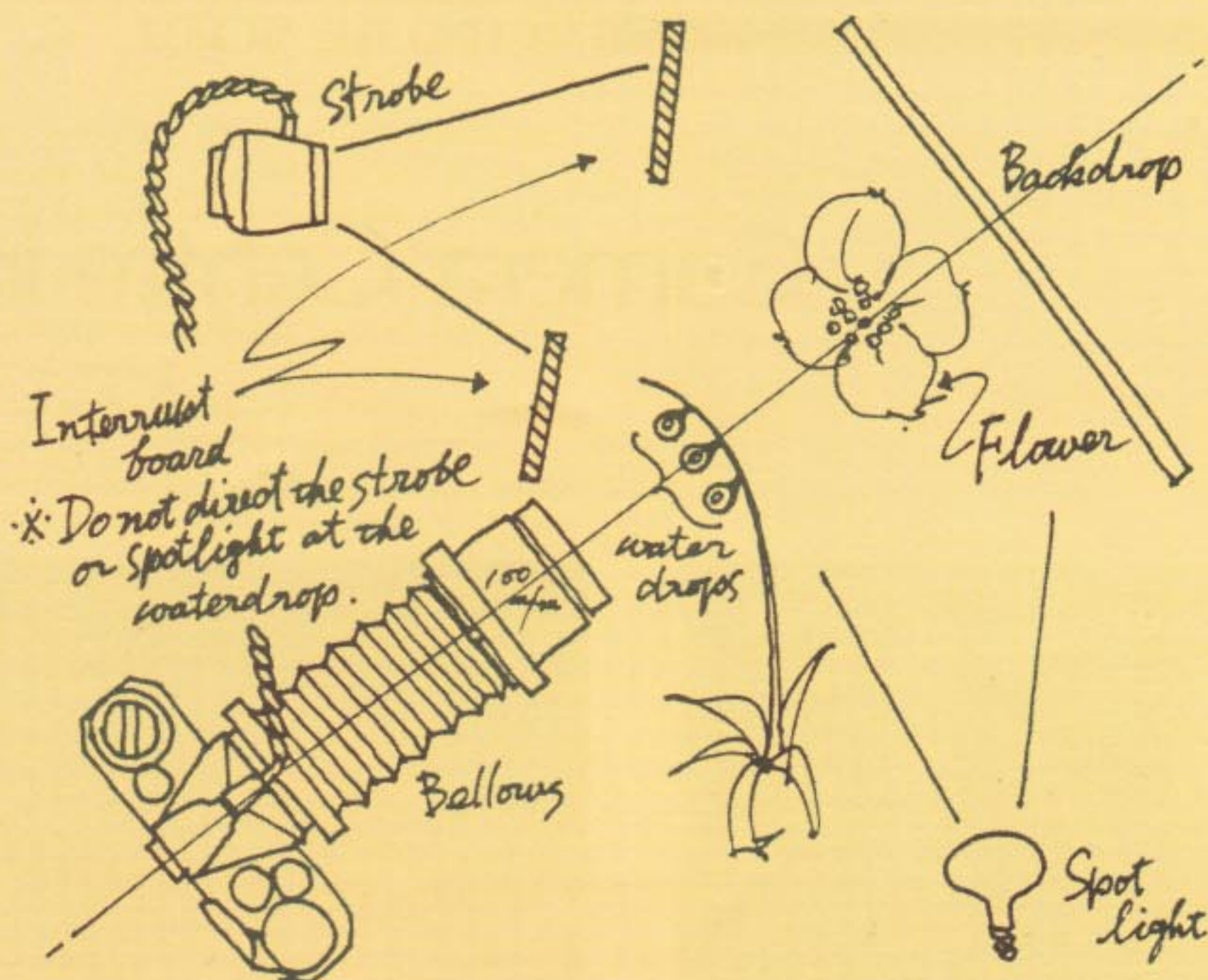
create a photograph called "Dew Drop." One morning I was heading toward Mount Santo and the rain from the previous night had covered the grass with myriads of drops that appeared almost as if they were alive. The branches and leaves were laden with millions of glistening jewels. Nature had created a spectacular symphony of light. I moved close to one of the drops and looked at it very closely. I was overwhelmed. I could see the mountains, the trees, the grass and the flowers through them. All of what was outside was captured in a micro world.

Beethoven wrote his Sixth Symphony in the woods of Heiligenstadt. His feelings then were expressed in these words, "All Mighty of

the woods, I am happy here. Your Voice speaks to me through each tree." Those were the feelings I had when I set to work in our garden to get on film what would eventually be an award-winning scene of that magnificent micro world.

Creating a photograph like "Dew Drop" took hours, days and months of painstaking effort. When it was done, I felt like a second Columbus, it had taken almost a year to reach my destination.

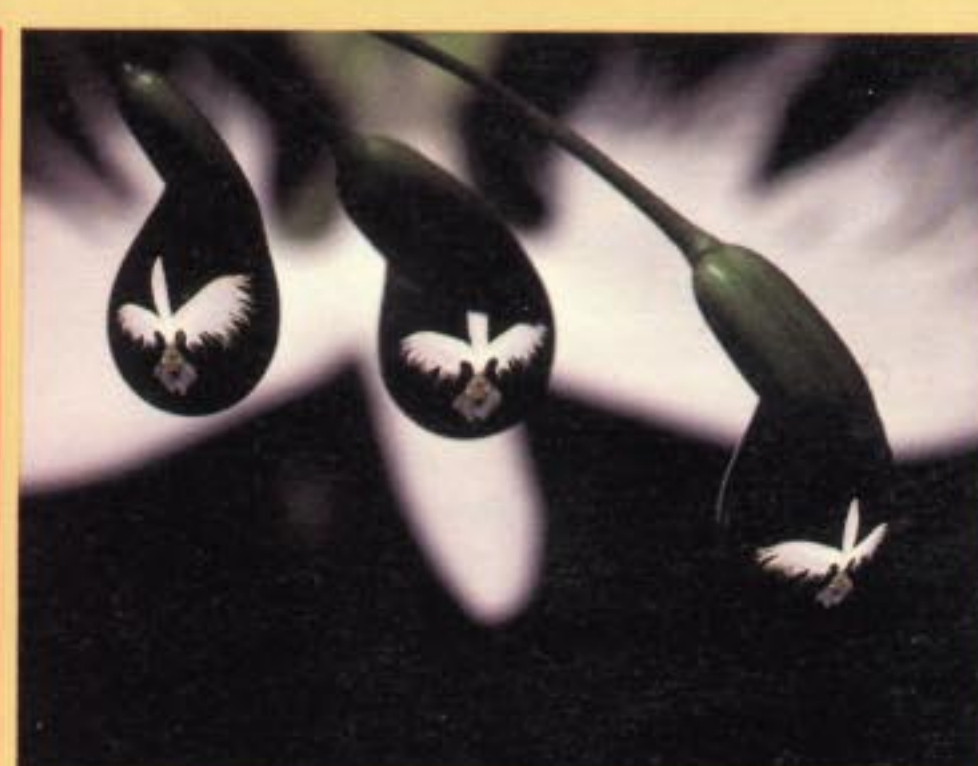
During that time, my wife helped me out a great deal. In fact, I don't know how I would have completed the project without her. The drops would fall due to vibrations or the wind. I would yell at her to be quiet, to move the flowers to the left or right, to set the background closer or farther away. She would get upset, run in the house and vow never to help me again. I would calm down, apologize and plead for her help again. Then, together, we would come up with new ideas



Marguerites



Poppies



Orchids

and the scenes would have to be totally redone.

Looking through the viewfinder into the overwhelming miniature world, I would turn to my wife and tell her to take a look. She would say "marvelous," "beautiful" and give me new suggestions which we would incorporate into the project. I was like a little child babbling with oohs and aaahs. The end product is an example of true cooperation.

I would like to tell you how we took these water drop pictures. We used the Olympus OM-2 camera system. I know I would not have been able to take these pictures if I had not had a TTL Direct "off-the-film" Light Measuring camera like this one. The exposure is just too difficult. The camera was fitted with the Zuiko 100 mm lens, and I also used a bellows, strobe and spotlight.

For the color background we used two or three packages used to hold photographic paper, Kodak for the yellow and Gekko for the blue.

One of our best ideas was a medical syringe to get just the right kind of drops on the tips of leaves. The ideal drop is three to four millimeters in diameter. If any bigger, they tend to fall off right away.

The flowers should be small, the best diameter about five centimeters. In this photograph we used kochoran (papilionaceous flowers), marguerites, poppies and orchids.

Now attach the lens and bellows to the camera body and head out to the fields or garden. Look at the grass and trees through the viewfinder. If you think you have found the right shot, imagine how it would look with dew drops. Of course, it would be best to find exactly what you want right away.

Now use the syringe and place a few drops of water on the tip of a branch. What do you think of the picture composition?

Next, place a flower behind the dew drop and look at it. Make sure you have just the right position. Remember that the drop is like

a fish-eye lens and the entire background will show through it. The background requires meticulous preparation.

Since your subject is small, make sure that you do not fan the air or cause any quick moves that will move the subject. The slightest vibration will cause the drop to fall off the leaf or twig. An umbrella is very effective for both lighting and sheltering your subject from the wind. This method can be used to good advantage.

Do not place the strobe or spot light so that its light goes directly into the water drop. If you do, you will just get a reflection of light back into the camera and your shot will be ruined. If the light is not on the flowers or grass you will not get the effect you want. Some of the light must also be directed at the backdrop. This can be controlled by using tracing paper or something similar, using the film's latitude to completely turn the backdrop dark, you can eliminate complex backdrops. **VA**

Camera Centre in London



In a very short period of time London's Olympus Camera Centre has achieved a highly respected status, and can now claim to be England's leading, and most influential photographic gallery.

Major exhibitions by some of the world's best known photographers have created an excellent level of awareness at all levels of photography, from the budding amateur to the dedicated professional. The addition of work from photographers perhaps not so well known to the masses, but respected by aficionados of the medium, have ensured that the gallery retains a progressive image and appeals to a wide and very influential cross section of the public.

The first Olympus Gallery was opened in 1979 at the prestigious Ritz Colonnade, in Piccadilly — right next door to the world famous top class hotel. The Gallery quickly established itself as an important venue with exhibitions that included the work of Bailey, Lartigue, Lichfield and Bonington, as well as becoming an important venue for keen Olympus users, and potential Olympus customers.

The Gallery, however, was very small, limiting not only the amount of pictures that could be shown but also the amount of visitors it could contain — popularity of exhibitions such as the Lichfield Royal Wedding Album resulted in queues of people simply waiting to get in!

Larger premises were obviously required and in 1982 the Olympus Gallery moved to its current and equally prestigious location at 24 Princes St., W.1. This prime site, just off Regent Street (the most popular shopping mile in the UK), is a perfect location, with two floors capable of housing two major exhibitions.



The Gallery is manned by a staff of five Olympus personnel and is open from Monday to Friday, between 11:00 a.m. and 6:30 p.m.

The ground floor displays a photographic exhibition once every four to six weeks, and the photographers and artists whose works have been displayed have been a varied and popular mixture of names.

Display cabinets around the wall hold the full OM System, and new products such as the OM4, 350mm F2.8 lens and T45 flashgun, and they have helped to create an enthusiastic level of interest. The Olympus museum is a popular section of the Gallery and contains a good cross section of early Olympus models as well as an eye-catching Gold Olympus Trip — produced in recognition of one million compact camera sales in the UK. Fully stocked brochure racks

ensure that specification details are always close at hand, and the Gallery's resident OM expert is available to answer specific questions.

A television monitor at the window relays pictures from an Olympus video camera pointing out to the street, and illustrates the Gallery involvement with video.

The full video system is on display in the basement area of the Gallery, and a comprehensive video editing studio has been installed for Olympus video owners to use. The suite can be rented on an hourly basis for editing, audio dubbing, tape copying, film transfer, and titling. With over 40 special effects for picture mixing, a high-quality sound deck, and frame by frame tape control, the quality and accuracy of the Olympus Video Editing Studio will make it a very popular and hard-worked department of the Gallery.

The main basement area has a dual function and can be used either as a second photographic gallery or can be transformed to a video theatre, thanks to an overhead video projector. A recent twice daily playing of a show titled "A Historical Look at Pop Promo" resulted in every seat being filled for every performance!

A workshop, stocked with test equipment and an important selection of spare parts is manned by a full-time camera technician, and whenever possible repairs will be carried out

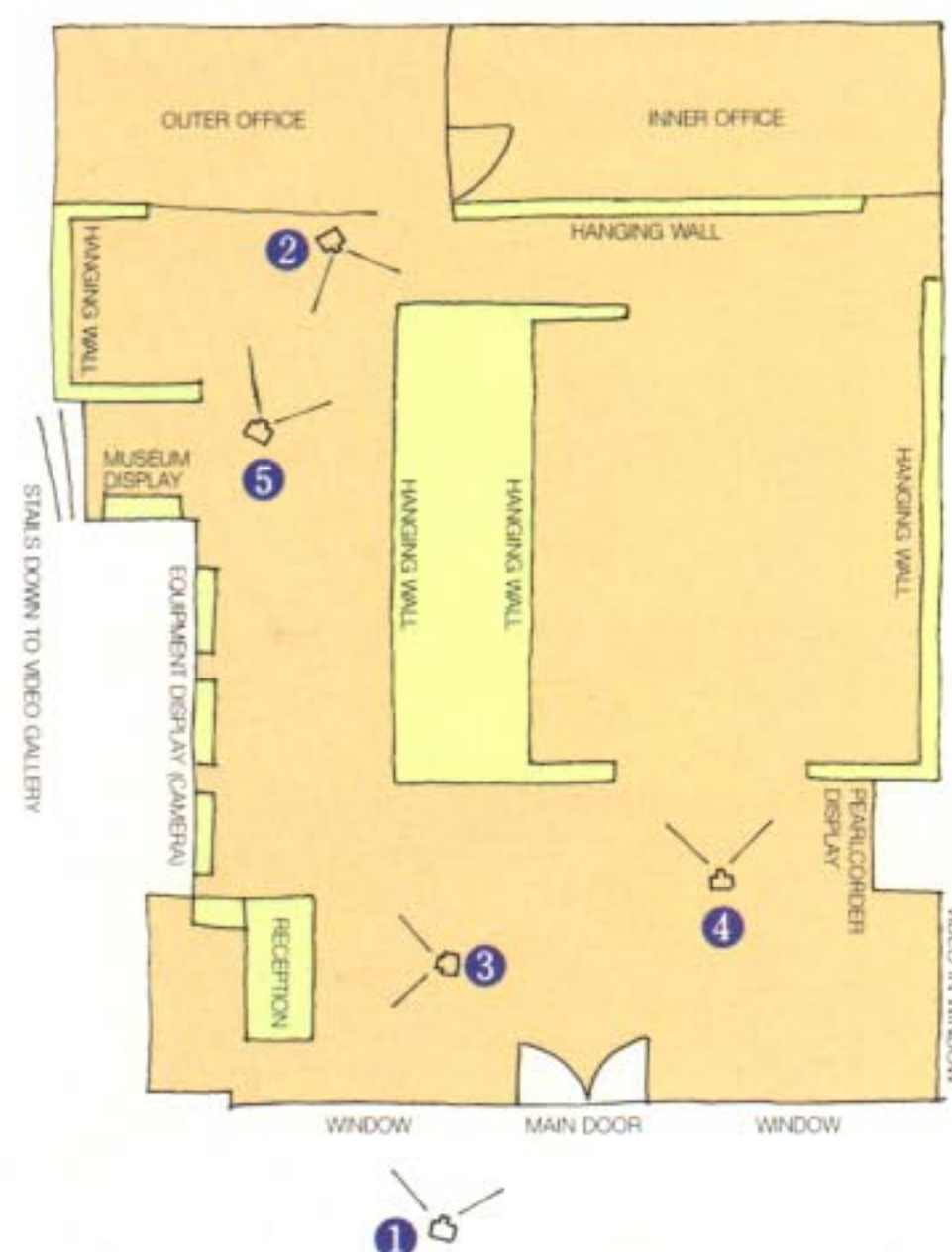
on the spot — a service that is much appreciated in the summer months by tourists from all over the world.

A prestigious boardroom completes the Gallery's facilities and allows Olympus personnel to entertain clients at a prestigious company showpiece, that leaves a lasting and very favorable impression.

Books, exhibition posters, catalogs, postcards, photographic magazines, and design and advertising newspapers are on

sale at the Gallery reception. The prints that are actually being exhibited are also usually available for sale, and because the Gallery is keen to support and show the photographic greats of the future as well as the present, such photographs will fast become valuable collectors' items.

Shows at the Gallery have included the work of David Bailey, Terrence Donovan, Helmut Newton, Ralph Gibson, Ralph Eugene Meatyard, Pat Booth, Annie Liebowitz, John



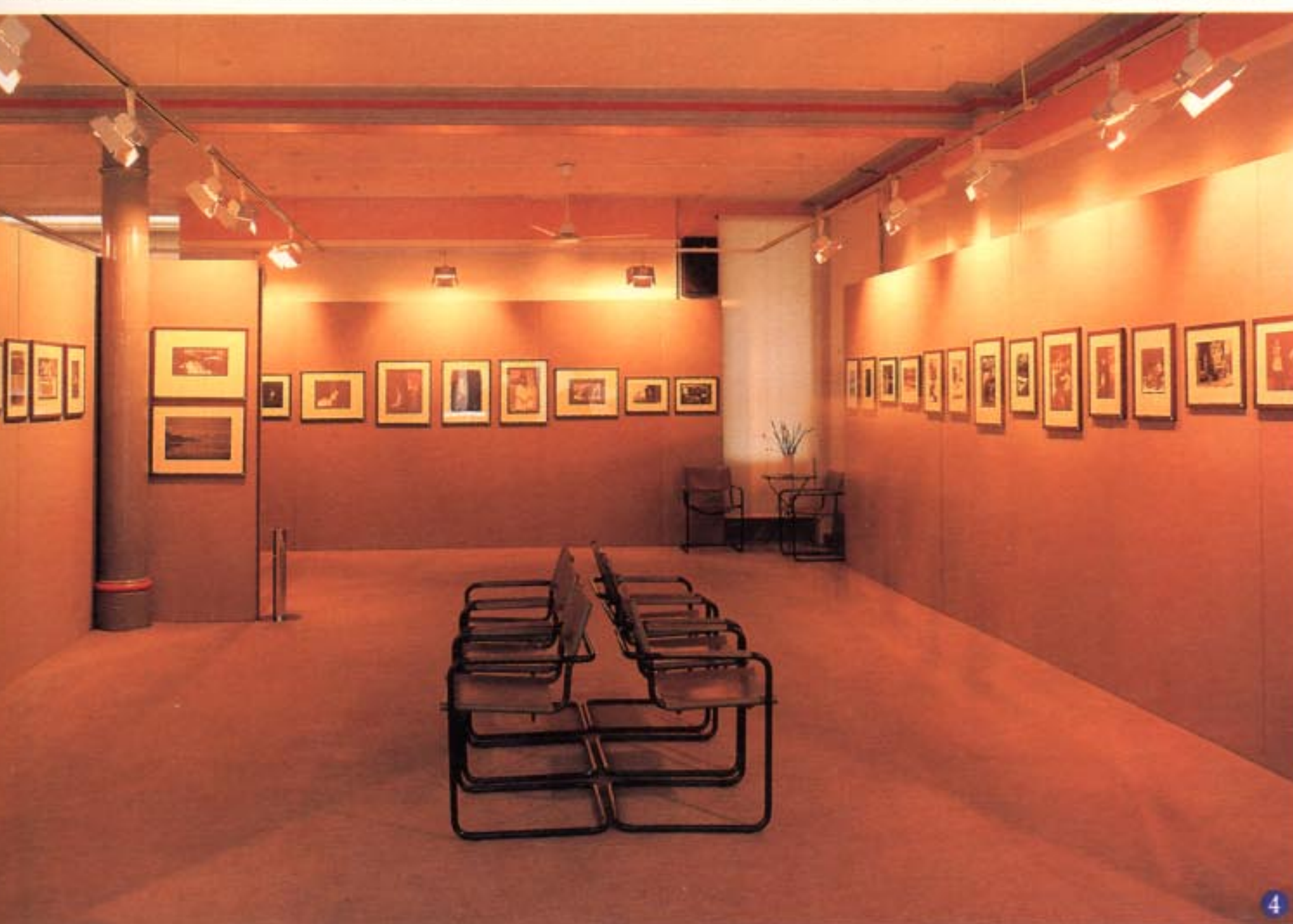
Piper and Alice Springs, as well as the winners of competitions backed by Olympus such as the Daily Mirror Young Photographer of the Year awards, and the Olympus Wrangler Jeans Photographic Competition.

All the exhibitions have been well attended, and the Gallery remains open in the evening to allow the office worker and late-night shoppers, to have the chance of seeing the show, and examining the equipment.

One exhibition in particular caused a major furore in the world press, when a group of feminists attacked the gallery in protest over the photographic content of Helmut Newton's 'Big Nudes' exhibition. The resultant publicity aroused much curiosity, which resulted in the Gallery being busier than ever!!

The Gallery will continue to show a wide and varied cross section of photographic work, which can only help to stimulate interest in both the Gallery and more importantly photography as a whole.

Once the individuals interest in the medium has been aroused, it is confidently expected that he will remember Olympus when it comes to actually buying a camera, and will continue to reap the full benefits of the Gallery long into the future. **VA**



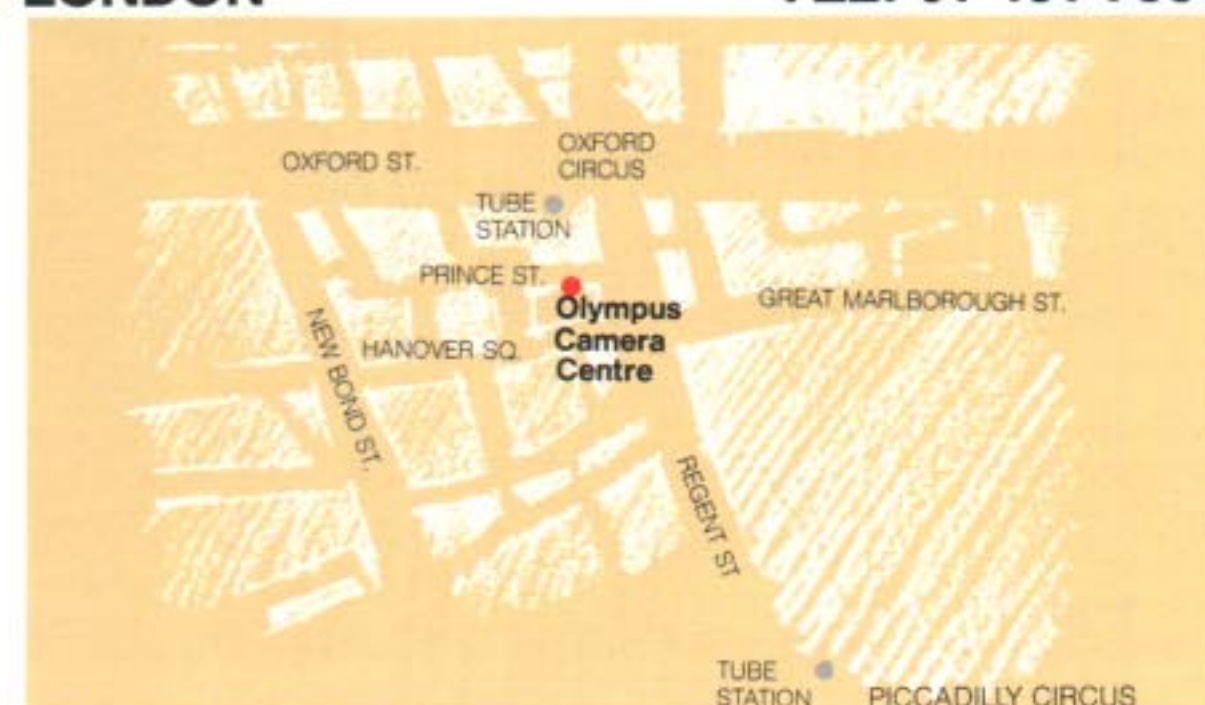
OLYMPUS GALLERY — LONDON

Forthcoming exhibitions include:

Les Femmes	To celebrate the 90th birthday of Jacques-Henri Lartigue we are showing 88 photographs, dating from 1903 — 1981, of Lartigue's 'Women.'	June 5 — June 29
Andre Kertesz	Another famous Olympus user celebrates his 90th birthday in July and we are exhibiting photographs he took on three recent visits to Paris.	July 3 — July 27
Bruce Weber	American Olympic Team (Gallery I)	July 31— Aug. 24
London Salon	83rd Annual Exhibition (Gallery I)	Aug. 28 — Sept. 8
	Wrangler/Olympus Competition (Gallery II)	Aug. 6 — Aug. 24
	Killing Fields (Gallery II)	Sept. 17 — Sept. 28

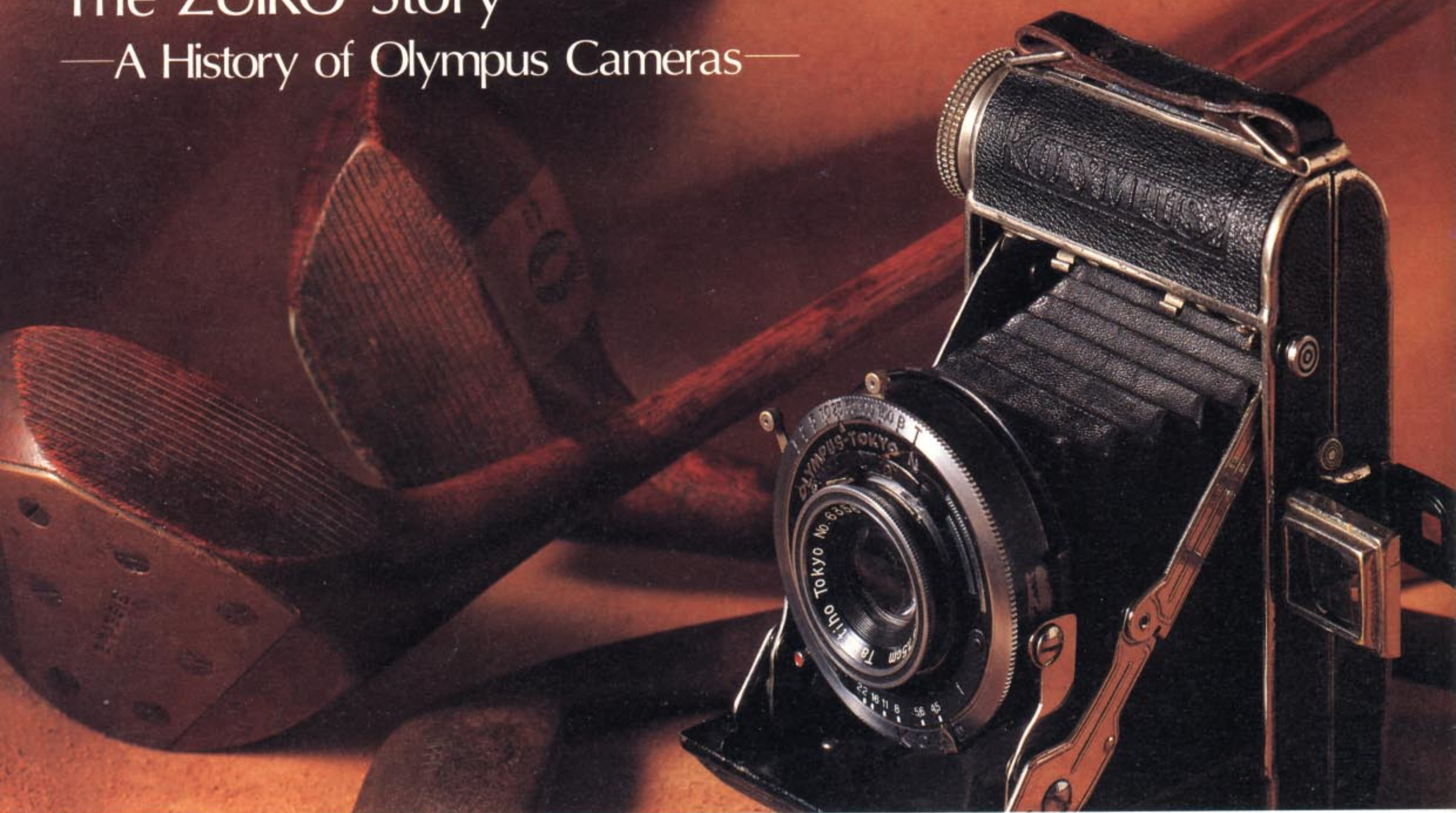
LONDON

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The ZUIKO Story

—A History of Olympus Cameras—



Birth of Zuiko Lens and the Cradle of Olympus Camera

The place was a 10-square-meter darkroom. The only light in the dark came from a screen on the table with an enlarged test chart image projected upon it. Two men, engineers, were standing next to the table. One of the men silently handled the focus adjustment of a projector while the other examined the details of the projected image. After a while, the second man said simply, "next" and the first man replaced the lens that had been mounted on the projector with another lens. He adjusted the focus of the new lens and the second man examined the details of the image on the screen, looking first at the center, then at the four corners. The first man then rotated part of the lens barrel until the image was out of focus. Again he handled the focus adjustment of a projector and the image

became sharp again. The second man examined the chart image once again.

"Well, well, it's fine. Well done!"

Looking at each other in the dim light reflected from the screen they both broke into a smile.

This was the moment, one day in June 1936, when the No. 1 lens in Japan, the first of the Zuiko series, was born in the Shibuya factory of the then Takachiho Mfg. Co., Ltd. (the direct predecessor of the present Olympus Optical Co., Ltd.).

The lens, Zuiko 75mm F4.5, which was completed that year, was soon incorporated, together with the Auto-Compur shutter, into a camera body manufactured by Praud. The assembled semi-format (4.5 × 6cm)-type camera was then put on sale. This was the Semi-Olympus, the very first Olympus camera.

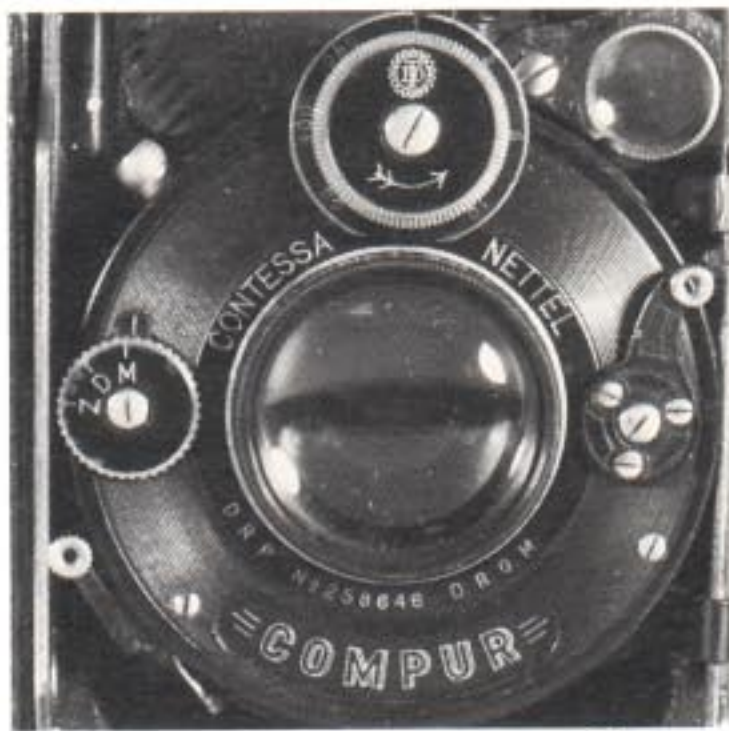
Japan's economy, which had hit bottom

during the depression in the early Showa period (in the mid 1920s), had begun to prosper around 1935, and the interest of the public in photography was also gradually increasing. With this trend, spring cameras for 120 roll film which take 4.5 × 6cm format became the rage replacing cameras using 6.5 × 9cm-size plate/pack film. Soon a large variety of cameras using "semi" in their names were being produced in Japan.

Japanese cameras are now considered the best in the world, but around that time the Japanese camera industry was still in its infancy, and the camera market was in a period when German products or foreign goods were being worshipped. Taking advantage of this situation, many pirate versions of various German-made cameras were being produced, disrupting the efforts of serious domestic manufacturers who were trying



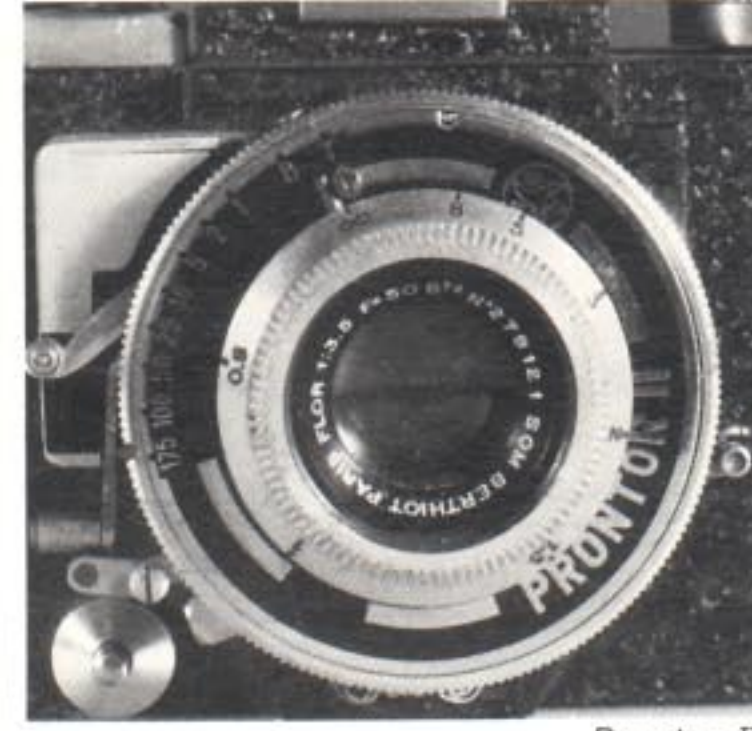
Compound Shutter



Compur



Auto-Compur



Prontor II

to produce excellent quality domestic cameras.

The first Olympus camera (4.5 × 6cm, semi-format) made its appearance in such an environment. The production was small, but the camera was welcomed by the public because of the outstanding combination of the excellent Zuiko lens with the Compur shutter. However, soon the importing of Compur shutters was stopped and the Koho shutter made its appearance to replace them.

Lens shutter No. 0 was successfully made on an experimental basis at the Mizuho Optical Research Laboratories in Hatagaya and named "Koho." It was immediately used for the Semi-Olympus (4.5 × 6cm) in 1937.

The lens shutter, which works as an integral part of the photographic lens, had been almost completely developed about that time by Friedrich Deckel, a German machine tool manufacturer. The shutter blades for exposure and the stop blades for the aperture-control of lens were placed between two threaded barrels for lens-fixing. The front threaded barrel had a mechanical part on its periphery. The shutter sizes were, in order of size from smaller to larger, No. 00, No. 0 and No. 1, etc.

The shutter consisted of three blades that opened and closed with high speed to allow exposures to be made. A brake was used to control the movement of the blades while they were opened. By controlling this brake it was possible to get variations in exposure time. A clockwork gear train was used for the braking mechanism and thus the mechanical shutter mechanism was established.

The Deckel "Compound Shutter," used initially, utilized air resistance as its brake. It had a small cylinder and piston. This shutter was naturally affected by temperature, altitude, humidity, and so on. When the gear brake was adopted, the name of the shutter was changed to "Compur." In the initial "Compur Shutter" the speed control was done using two separate small disks, one for T(time), B(bulb) and I(instant) and the other for high-speed exposure controls of from one second to the maximum shutter speed for I(instant). Later the separate disks were integrated so that all the controls were on a single speed ring set around the periphery of the shutter. This type was called the Auto-Compur shutter. In addition, the number of the shutter blades was increased to five and a stronger spring added to increase the maximum shutter speed by one step. This was the Rapid Compur shutter. The maximum speeds for these shutters were, respectively, 1/300 sec. for Auto-Compur No. 00, 1/250sec. for Auto-Compur No. 0, 1/500sec. for Rapid Compur No. 00, and 1/400sec. for Rapid Compur No. 0.

Around the same time, another shutter also appeared in Germany with the same dimensions but a different mechanism. This was the Prontor II of Alfred Gauthier. Its maximum speed was lower than that of the Compur, but it had a very well set up light shutter operation and it was priced lower than the Compur. These two shutters can be regarded as typical lens shutters of the German photographic industry after World War I.

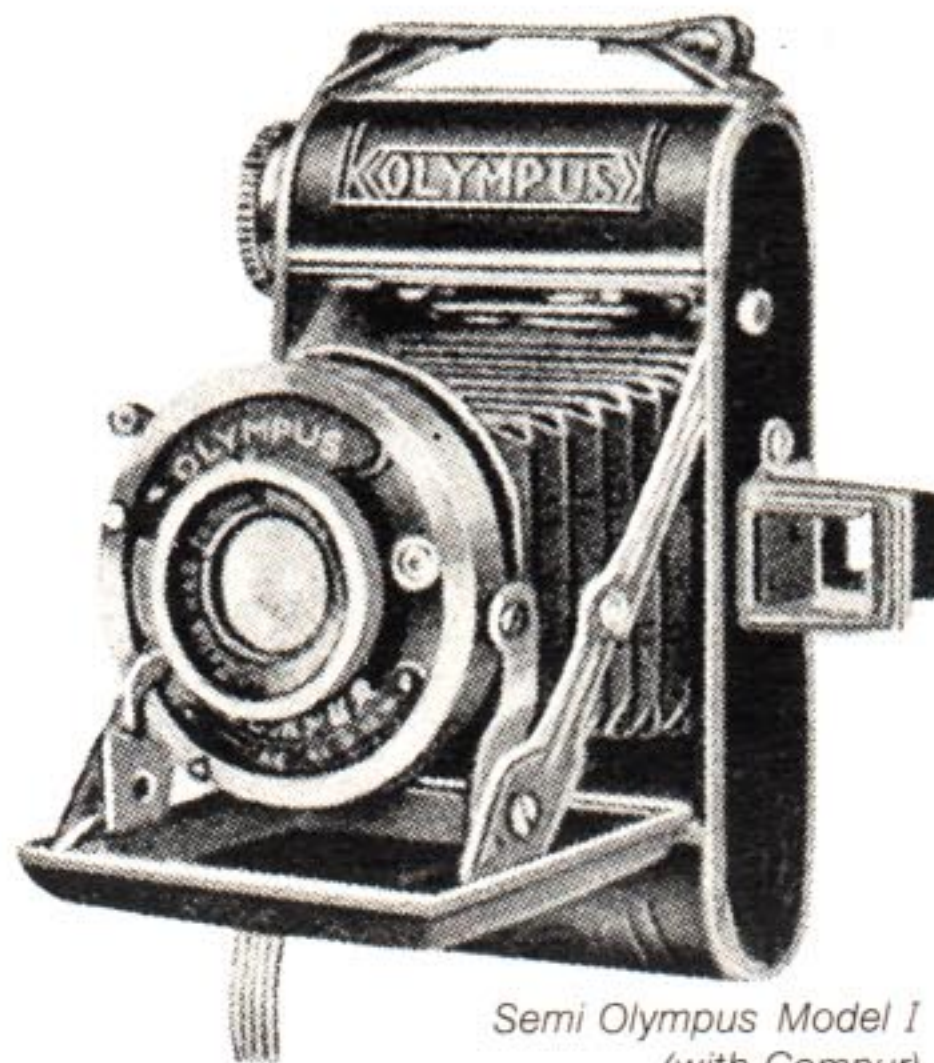
The Koho shutter was produced on the model of the Prontor II standard size No. 0.

Semi-Format (4.5 × 6cm) Semi-Olympus and World War II

Olympus cameras progressed from the Semi-Olympus (semi-format type, 4.5 × 6cm) to the Olympus Six, with a lens unit combination of a Zuiko lens with a Koho shutter. However, World War II compelled OLYMPUS to increase its production of weaponry optics forcing it to suspend manufacture of cameras. This was compounded by the destruction of the main office and factory in an air raid on May 26, 1945. The resulting fire completely destroyed



Semi Olympus Model II



*Semi Olympus Model I
(with Compur)*



Olympus Six



*Semi Olympus Model I
(with Koho)*

the production equipment for the Koho shutter.

Looking back at cameras during the period around 1937 they seem so simple even though progress was made from folding cameras (portable cameras) to spring cameras.

Folding cameras were designed so that the camera is readied for exposure by opening the front cover, pulling the lens/shutter-support front plate forward, and adjusting the lens focus. Spring cameras were designed so that, with the single manual operation of depressing a latch on the camera body, the front cover

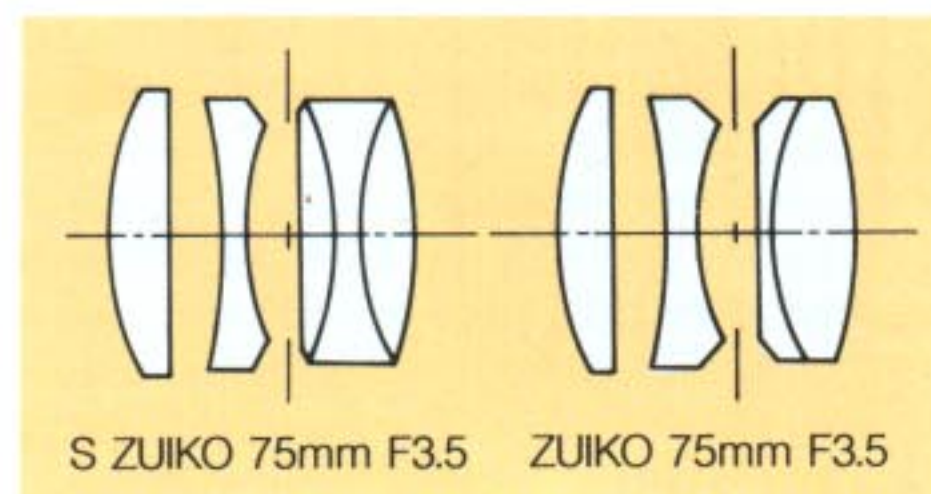
spring opens, and simultaneously the link motion of the folding arms supporting the cover allows the lens/shutter-support front plate to move up and snap into a fixed position. At the same time, the folded inverted Galilean finder automatically opens and the camera is ready for exposure.

Focusing was done either by moving the lens/shutter unit back and forth in the helicoid system on the front plate or by moving part of the component lenses in the unit with a fixed shutter and front plate. The 4-element-3-group Tessar-type lens (including Zuiko), after the Zeiss Tessar which was famous at the time, or the 3-element-3-group triplet-type lenses had a focal length that varied according to the change in interval between the first and second lens elements. Because the interval change had little effect on aberration, back-and-forth focus adjustment was generally used in spring cameras. This was called "frontal focusing." These cameras had no release button like that found in today's cameras. It also had no film-wind stopper or double-exposure prevention mechanism. Exposure was done manually by directly pushing the shutter release lever, or by use of a cable release. The basic rule for preventing double exposure or rewinding of unexposed film by mistake when using roll film was to be sure to wind the film one frame just after pushing the shutter release. Each frame of the film could be identified by a number seen through a small covered opening in the back lid of the camera. When the Semi-Olympus II (4.5 × 6cm) made its appearance it had these features. With this model, both the excellence of the Zuiko lens and lightness of the Koho

shutter were highly praised. However, a body release mechanism appeared at long last at this time and was incorporated into the camera body. There were also criticisms that a camera of this size should have been of the Six-format type. I decided then to start improvement work to change the model into a Six-format-type camera. I was urged by my design people to push the work even though we were short-handed because of production work on weaponry optics. The result of redesigning was the Olympus Six, and with it the Zuiko 75mm F3.5 lens. Two versions of the Olympus Six, one with a Zuiko F3.5 and the other with a Zuiko F4.5, were placed on sale in 1940.

The body of the Olympus Six was an assemblage of pressed steel plates and modeled after the Ikonta Six. It had Olympus Six Baldax-type folding arms which had also been used in the Semi-Olympus. The Ikonta Six used a No. 00 shutter while the Olympus Six used a No. 0 shutter because we were planning to equip it with a Zuiko F2.8.

The optical glass that was used for the Zuiko 75mm F4.5 and F3.5 lenses was partly a domestic product, used in combination with glass manufactured by Schott (Germany). As the war moved into full swing, Schott glass became unavailable. Still with hard work, we were able to complete the design for a 5-element-3-group lens in which the rear group consisted of three elements with domestic material only. All of the Olympus Six camera lenses designated "S Zuiko" that appeared during the closing days of World War II to the early days after it were all of this 5-element-3-group type.



Postwar Camera Boom and Olympus Six

World War II came to an end on August 15, 1945. The Japanese were quite at a loss at what to do in the aftermath of their miserable and tragic experiences, particularly as they suffered from a great lack of everyday necessities. It was during this period of confusion that the Japanese camera industry made its first step toward growth. The Takachiho Optical Co., Ltd. (the direct forerunner of Olympus Optical Co., Ltd.) also immediately moved into preparations in September 1945 for the reconstruction of its production lines.

However, I felt uneasy about whether or not cameras would really sell in such a war-devastated environment. What put an end to our uneasiness was the enthusiasm of U.S. military personnel for cameras. The "Photographic Industry in the Showa Period," published by the NIPPON SYASIN KOGYO TUSINSYA LTD., reported in its September 1945 issue on the U.S. Occupation Forces

camera fever. The report indicated that "Tokyo camera stores, doing business in spite of the disheartening war damage, are surprised at the large number of customers who visit their stores. Any camera sells well as long as there are supplies."

Thus, the production of Olympus Six cameras was resumed without delay, and the first shipment was made in the spring of 1946. This was the first step for the reconstruction of OLYMPUS. In the Suwa factory plans were already under way for the improvement of Olympus Six.

In 1948, the Olympus Chrome Six camera, the fruit of the improvement plans, made its appearance. Unlike a conventional body make-up of a combination of pressed steel plates, the Chrome Six was die-cast. This improved the accuracy as well as the strength. The side of the camera body was aventurine-chrome-plated. It had a fixed Newton finder and an accessory shoe beside it.

And, at the same time, long-awaited Zuiko 75mm F2.8 made its appearance. Thus, the Olympus Six with a Zuiko F3.5 lens was called Model I and the one with a Zuiko F2.8 lens was called Model II (photo).

In 1949, the company changed its name from Takachiho Optical Co., Ltd. to Olympus Optical Co., Ltd. so that the company's name coincided with the products' name.

And in 1951, Olympus Chrome Six Model III was developed. Model III, with a novel film plane stabilizer, had much more reliable focusing accuracy. The film plane stabilizer contributed to an overall solution to a serious problem of flatness of the film caused by the basic structure of roll film; i.e., the structure of the film in which the backing paper and the film are together wound around a spool. The film plane stabilizer functioned to provide the spool on the film-feed side with a reversible rotating force in order to apply a tension to both the film, stretched at the focal plane and the backing paper. This kept the film flat and in a given position. The film plane stabilizer was very useful for any roll film camera as long as it had no complicated film-winding path in the camera.

Film Surface Stabilizer



From Ultra-Miniature Cameras and Gastro Cameras to the Rise of 35mm-Type Cameras

With the appearance of the Olympus Chrome Six Model III, spring-type cameras using focusing by eye could be considered to have reached an almost complete state of perfection. Further progress could only be



Olympus Chrome Six Model I



Olympus Chrome Six Model II



Olympus Chrome Six Model IIIA



Olympus Chrome Six Model IIIB

achieved by developing a camera with a coupled range finder as well as a built-in film stop mechanism. Such progress, however, was not realized until 1954.

Let us look back then at the trends in the Japanese camera industry from 1945 to 1954.

Spring cameras, which were popular in prewar days, required this popularity again after the war. A particularly noticeable development during this decade was the ultra-miniature camera boom. The ultra-miniature camera used a spool roll film with a paper backing that was 17mm wide with a 14×14 mm negative frame and 10 exposures. Among the many models of ultra-miniature cameras there were the Micro, Guzzi, and Snappy. Another type of ultra-miniature camera also appeared which used 16mm movie film to produce 10×14 mm-size negatives. This was popular chiefly among U.S. military personnel. It went through an impressive boom period but lost popularity most likely because the photographic emulsion used with them was too grainy and hampered the practical use of these cameras.

These cameras had a limited following for a while because one manufacturer persisted in producing them and a band of die-hard enthusiasts continued to buy them until the 110-type camera appeared on the market.

At the same time there was another way in ultra-miniature cameras in a special field. This was the gastrocamera that was introduced by the late Mr. Tatsuro Uji at the meeting of the Society of the Clinical Surgery, Japan, in November 1950. The gastrocamera was the result of joint research by Dr. Hayashida of the Surgery Department, Koishikawa Branch, Tokyo University Hospital, to which Mr. Uji belonged, and Olympus. It used 6mm-wide film.

The first gastrocamera was a long and narrow tube, 12mm in diameter and 800mm long with an approximately 60mm long camera head housing a lens and a lamp. The head was designed with a removable cap at the tip to allow a film cartridge about 6mm wide and 280mm long to be inserted (see Photo).



*The world's first gastrocamera
(for taking photographs inside the stomach)*

This camera was used later also in diagnostic research of stomach disorders by the Internal Medicine Department under Dr. Tasaka at the Tokyo University Hospital. Further research and development eventually resulted in its being made available for practical use with the introduction of color film. Thanks to the development of fiberoptic techniques, the camera was further improved to allow use in biopsies as well as small-scale surgical operations. This has been the great contribution of the endoscope and the Olympus gastrocamera to the field of medicine.



Olympus Six Model IV



Olympus Six Model V



Olympus Six Model RII

The ultra-miniature camera boom was followed by the twin-lens reflex camera boom. In the meantime, 35mm-type cameras were making slow but steady progress.

As for the Six-format-type cameras, the Olympus Chrome Six went rapidly through several model changes, Models IV, V and RII, during the 1954–5 period. Model IV was developed by putting an independent range finder on the Model III body. In contrast, Model V, a focusing-by-eye type, and Model RII, with an independent range finder, had new body designs and were available with an F3.5 Type A lens and an F2.8 Type B lens, respectively. The finder was designed to allow selection of visual fields by means of a

changeover lever. Film winding was done by a lever on the back of the body (Model RII had a film stopper for 6×6), and there were no projecting parts on the top cover.

A close look at the front lens frame of Model V or RII reveals a hairlike line as is shown in the photo, on the frame edge where the markings for close range indication of the



Hairlike Focus Compensation

range scale are. This is what may be called a "compensation scale" for the change in focal point caused by stopping down the lens. The scale was a device to allow better focusing, and may be the only one of its type in the world.

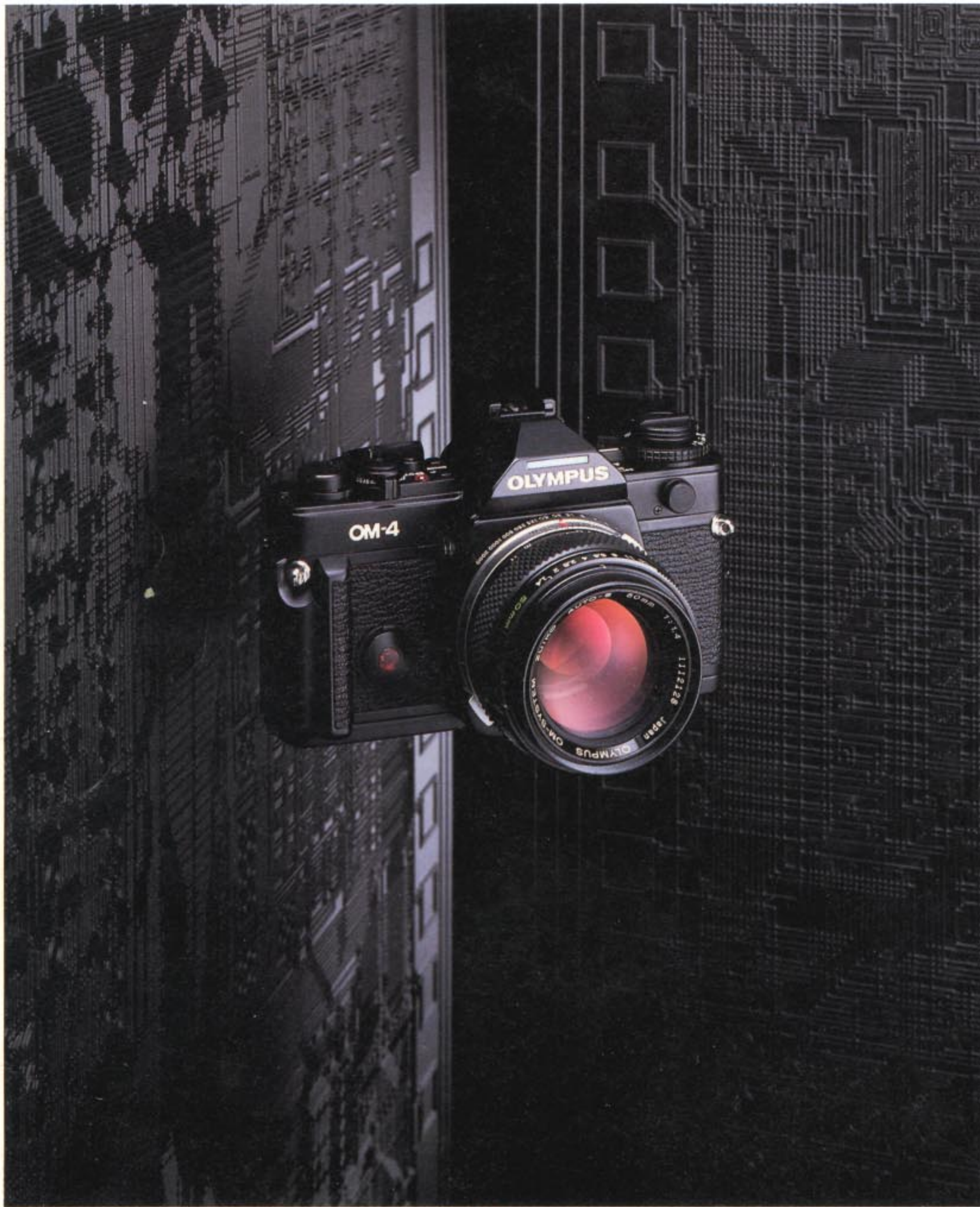
The photographic lens was designed to allow the best focal point position to be shifted as the lens is stopped down because of residual spherical aberration. The shift is generally negligibly small. However, when focus adjustment is made by rotating the front lens with a focal length as long as 75mm, it is important when rotating the front lens outward to adjust by focusing on a subject at close range. The above hairlike scale is used for compensating the focus shift. In the photo, the reference line represents the 1.5-meter range at open aperture, and the extreme left point of the hairlike scale corresponds to the 1.5-meter range at the F8 lens stop. This means that the reference line should be used when shooting at open aperture; if using this point at F8 and the middle point between them at F5.6.

These model changes, as a means of further increasing the market share of the Six-format-type camera whose production had reached as many as 5,000 units per month, came virtually too late. Twin-lens reflex cameras and the spring cameras were destined to disappear from the market before the rise of 35mm-type cameras with the global drift toward deflation around the end of the Korean War. The Olympus Chrome Six also came to an end with its Model RII. (The next installment will describe developments from Olympus Flex to the advent of 35mm-type cameras.) **VA**

Eiichi Sakurai

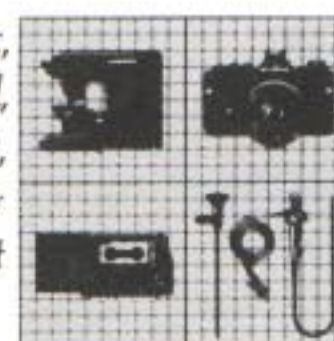
Eiichi Sakurai's profile:

Eiichi Sakurai was born in Japan in 1909. He graduated from Tokyo University Technology Department with a mechanical engineering degree, and after joining Olympus Optical Co., Ltd., as a member of the project team, developed their first camera. In 1974 he retired as senior executive director. He is also famous as an amateur photographer and his photographs express the nostalgic impression of his youth. He has held a successful exhibition at The Art Institute of Chicago.



OLYMPUS OM-4. New Generation Electronics for Multi Spot Metering.

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Medical,
Microscopic,
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