The Simple Handling of High Technology! The New OM-2 Comes with All the Extras of Spot Metering and Program Function

by Yoshihisa Maitani

When the OM-2 was announced in 1975 it was the world's very first camera to feature TTL Direct "Off-the-Film" ("OTF") Light Measuring, making it possible for the camera to control every element of photography up to and including the intensity of the flash emission. Now, ten years later, TTL Direct "OTF" Light Measuring has been adopted industry-wide as the metering system of choice for top-of-the-line single-lens reflex cameras.

The newly introduced OM-2S PROGRAM is solidly based on all the achievements of the original OM-2 and the many improvements it has undergone over its ten-year history. In addition it introduces a Manual/Spot Metering system, plus another world first: TTL Direct "OTF" Light Measuring in the Programmed AE mode.

Spot Metering is more than ever an essential feature for truly creative photography. The Spot Metering function was highly acclaimed in the Olympus OM-4, where it was first introduced. In the new OM-2, Spot Metering has been adopted specifically for the Manual mode, at last giving true meaning to the Manual mode capability. In recent years, manual operation has served more as a sales point than a really useful feature, and it has suffered virtually complete neglect in actual photographic situations.

The Program function in the new camera was specially developed by Olympus to take advantage of TTL Direct "OTF" Light Measuring. It's a world first. And, astonishingly, it features full interchangeability with regular OM System Zuiko lenses and other system units. There are no modifications, and there is no need to replace previously owned OM System units. It's a remarkable example of the Olympus commitment to the OM System—and loyalty to its customers.

In the Aperture-Priority AE mode, the OM-2S PROGRAM performs just like the previous OM-2, with a superb command over the gamut of photographic subjects.

All this goes to demonstrate that the new OM-2S PROGRAM is a camera that will appeal to a wide segment of the photographic public, from professionals impressed by its performance and versatility to the average amateur who loves its exceptional ease of use.

Being based on the OM-2, the new camera naturally features the same tough, durable construction. The shutter mechanism and related parts are of high strength tempered steel. The bearing section utilizes ball bearing trains for the smoothness and robustness to stand up to super fast motor drive operation. The upper and lower body panels which protect the camera from the outside and from knocks and scratches in use are, of course, of metal construction. Nowadays when competing program cameras nearly all adopt plastic upper and lower panels, the OM-2S PROGRAM marks the introduction of a new genre of camera on the market. It has the convenience of programmed exposure capability. But along with that it offers the performance of spot metering and the toughness to stand up to rough professional handling.

OM-2S PROGRAM

Many professional photographers are reluctant to experiment with new performance features. In a sense they are very conservative. Way back when through-the-lens exposure meters were first introduced, they shunned these new-fangled devices and insisted on using their own awkward independent exposure meters. And when auto exposure systems were first introduced, they shied away from them in just the same way.

However, with the passage of time professionals, too, have begun to take advantage of these features, until today they have become just as indispensable for professionals as for common photo enthusiasts.

The idea of the Programmed AE mode was exactly the same. Professionals didn't want to hear about it. Today, though, several years after the program format was first introduced to SLRs, they have at last come around to admitting that there are certain circumstances where it is legitimate and even useful to shoot in the Programmed AE mode.

When we look around at the program cameras that have been available until now, we see that they are predominantly of plastic construction and really not suitable for the kinds of strain imposed on a camera by professional use. That is what led to the idea that it was time to produce a program camera able to stand up to professional punishment. To make this concept a reality, Olympus took the OM-2—a camera widely used and liked in professional circles—as a base, then added program capability. Going one step further, Spot Metering capability was added, too. That, in a nutshell, is the basic design concept of the OM-2S PROGRAM, a camera that retains the advantages of TTL Direct "OTF" Light Measuring, and supplements them with program and Spot Metering functions.

External design

Although the new camera incorporates five LSIs including an ultra modern microcomputer, a viewfinder LCD indicator optical pathway, an entirely new aperture-control mechanism, and other electronic functions, the body design conforms precisely to the appearance and dimensions of previous OM camera bodies. This is to permit full interchangeability with already available OM-System units such as motor drive and winder, flash, bulk film back, etc. The modern camera market is characterized by the appearance of new models that require the purchaser to buy new motor drive units, etc. and even a new collection of lenses. Olympus emphatically rejects this approach, and has guaranteed the integrity of the OM System through the appearance of each new OM camera model.

The pentaprism section is a vital element in determining the camera's "image." Because the accessory shoe is now fixed, the shape is somewhat different from that of the original OM-2 although the clearly angled "delta cut" remains. At the same time, an effort was made to coordinate the design with the new brand image leaders, the OM-4 and OM-3. Their influence is clearly seen in the lines, and the position of the brand and model identifications.

As far as the controls are concerned, the main consideration was to retain the much praised handling qualities and "feel" of the original OM-2. Anyone who has used the OM-2 will take naturally and effortlessly to the OM-2S PROGRAM. The detachable grip designed for the OM-4 can also be used on this camera. As befits a top-quality camera, the finish, like that of the OM-4, comprises a double layer of matte black paint over black chrome plating. The result is unusual durability in use.

Construction and viewfinder

The main body follows the construction of the OM-2, with two separate diecast aluminum structures forming a tough body skeleton. Both upper and lower body panels are also of metal construction, assuring along with the diecast body the ruggedness to withstand the roughest treatment.

The viewfinder display is shown in Fig. 1, while the optical pathway of the finder display is illustrated in Fig. 2. The display is located in the same position as in the OM-2, to the left of the viewfinder image outside the viewfield, in a vertical array. As in the OM-4, the display itself utilizes a large scale LCD to show the information in white on a blue background.

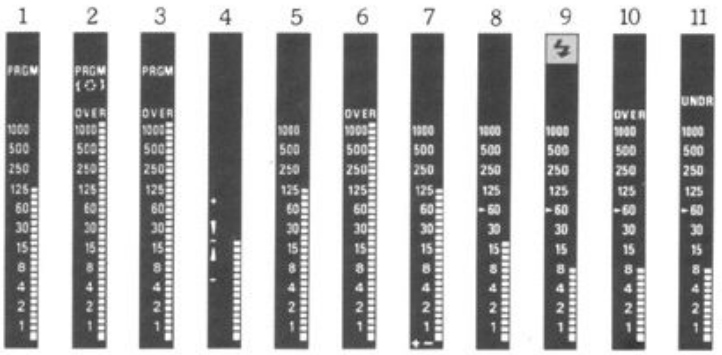


Fig. 1 Viewfinder Indications

1. During TTL Direct "OTF" Programmed AE mode
2. Flashing warning to indicate lens aperture is not closed down enough during Programmed AE mode
3. Flashing overexposure warning during Programmed AE mode
4. Manual/Spot Metering display
5. TTL Direct "OTF" Auto mode display
6. Flashing overexposure warning during Auto mode
7. Exposure Compensation indication
8. Flash indication
9. Full flash charge indication flashes to confirm correct flash exposure
10. Flashing indicator to inform flash shot was overexposed
11. Flashing indicator to inform flash shot was underexposed

In Programmed AE mode and Aperture-Priority AE mode the shutter speed is indicated. In Manual/Spot Metering mode, the degree of variance from the standard recommended exposure value is shown in 1/3 f-stop increments by an easy-to-read analog bar graph display.

The viewfinder display can be read easily even in dim light thanks to a translucent white window set in the front of the upper body panel, through which light from the outside is channeled by a light guide to illuminate the LCD. The LCD is located in a position that is optically equivalent in distance to the viewfinder screen. The LCD image illuminated by the light guide is further directed to the viewfinder magnifier lens via a small prism attached to the lower part of the incident surface of the pentaprism. The merit of this type of construction is that the optical pathway of the finder display can be located along the side of the pentaprism section, thus allowing the size of the pentaprism section itself to be reduced to the smallest possible dimensions.

The reason the light window was located on the front of the camera facing the subject is that this assures it will not fall into shadow from the photographer's headgear, etc. It is also in a position that is not likely to be blocked by the photographer's fingers.

The built-in illumination lamp is attached to the upper part of the first reflecting surface of the light guide, and functions to illuminate the finder display when there is not sufficient outside light. It features an automatic 10-second switch-off to conserve battery power.

The viewfinder magnifier lens is of 2-element-in-2-group construction and produces a 0.86X magnification viewfinder image with a 50mm F1.8 lens at infinity.

The finder viewfield ratio is 97% of the actual taking area both vertically and horizontally, the ideal ratio for professional use.

Focusing screens are changed in exactly the same way as with the OM-2, and a total of 14 different interchangeable screens are available in the OM System.

The shutter is based on a unit type newly

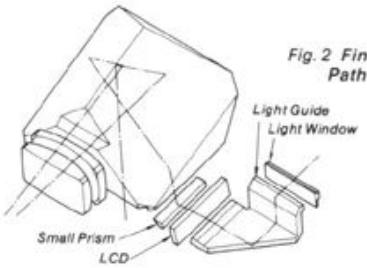


Fig. 2 Finder Light Path Diagram

developed for the OM-4. It features a cloth curtain, with horizontal travel, and electromagnetic control that allows a top speed of 1/1000 second. In fact, the influence of the new OM-4 shutter design can be seen in several areas. There are many improvements in the travel, drive and control mechanisms, and still greater stability and accuracy at high shutter speeds. Further refinement and strengthening of the brake mechanism assures even smaller shock and noise values. High-speed revolving parts are equipped with ball bearings and special lubricating fluid for superior durability and low-temperature performance. And, naturally, the leading shutter curtain features a random pattern light reflecting surface as with the previous OM-2, which is used during TTL Direct "OTF" Light Measuring modes.

The new camera has a shutter lock mechanism that functions as an automatic warning that batteries are depleted. The mirror remains locked in the up position, while the leading shutter curtain is locked closed. To unlock it, the shutter speed ring should be turned to the red 1/60-second position or "B". These two shutter speeds are mechanical, so they can be used even when the batteries are exhausted.

Exposure measuring methods

1. TTL Direct "OTF" Light Measuring (center-weighted average metering):

In Programmed AE and Aperture-Priority AE modes, the camera uses the TTL Direct

"OTF" Light Measuring method introduced with the original OM-2. Instead of metering the light immediately before the exposure in the conventional way, this method measures the light during the exposure, as the light actually reaches the film. Consequently it is incomparably more accurate.

During both of these operational modes, the same exposure system guarantees exceptionally accurate and versatile flash photography, with any of the OM System T Series flash units.

The light sensor is located in the base of the mirror box. It is used both for TTL Direct "OTF" Light Measuring for the actual exposure, and to provide light value indications for the finder display. Since the sensor is inside the mirror box, accuracy is unaffected by the possibility of stray light entering through the camera eyepiece. Another advantage: even with clear field type interchangeable focusing screens, both the viewfinder indication and the actual exposure are completely accurate.

2. Spot Metering:

In the Manual mode, the OM-2S PROGRAM switches to a Spot Metering system based on that devised for the OM-4. The light value is measured for only the central part of the finder image (corresponding roughly to the area covered by the microprism section of the standard focusing screen, or about 2% of the total picture area). This provides the photographer with an exceptional degree of creative control over the exposure—and feeling—of the final composition. It is most useful for backlit subjects, studio photos using special lighting effects, compositions with sharp contrasts in brightness and other tricky lighting situations. The photographer is free to choose precisely which area of the composition should receive the optimum exposure setting.

The OM-2S PROGRAM automatically selects Spot Metering when switched to Manual. Operation is extremely easy. Simply center the camera on the part of the composition you wish to expose for (for example, the face of a portrait subject), select the appropriate aperture and shutter speed to center the bar graph at the correct exposure value, and you have set the desired spot reading. Now you are free to compose the picture as you like, and release the shutter. The finished picture will accurately reflect the effect you had in mind when you planned the shot.

In recent years, with the increased convenience and sophistication of auto exposure cameras, the Manual mode has become something of a relic, a feature to keep the purists happy, but one that is in fact very seldom used. The special Spot Metering function in Manual mode of the OM-2S PROGRAM gives this mode meaning and usefulness again.

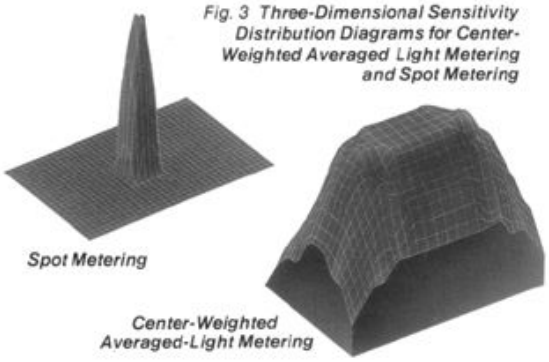
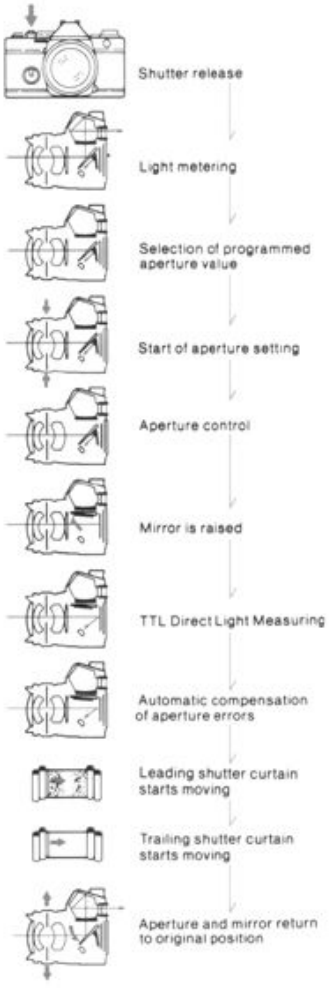


Fig. 3 Three-Dimensional Sensitivity Distribution Diagrams for Center-Weighted Averaged Light Metering and Spot Metering

Fig. 4 TTL Direct "OTF" Program Operation Sequence



Programmed aperture setting

1. "OTF" Programmed AE:

The OM-2S PROGRAM incorporates the world's very first TTL Direct "OTF" Light Measuring Programmed AE system. TTL Direct "OTF" Light Measuring, unlike previous shutter control systems based on an exposure memory device, measures the light that actually reaches the film at the instant of exposure. Consequently it is able to compensate even for changes in brightness after the shutter is released.

Based on the light measuring system of the OM-4 (located inside the camera in the mirror box section) the innovative Olympus aperture control system in the OM-2S PROGRAM utilizes a new type of aperture governor and an extremely responsive aperture control magnet. The new system has the enormous advantage of making it possible to use regular, unmodified OM-System Zuiko lenses in the Programmed AE mode. The only settings needed for TTL Direct "OTF" Programmed AE operation are switching the camera mode selector to PROGRAM and closing the lens aperture down to the minimum available value.

2. "OTF" Program function:

The program chart shows the shutter speed-aperture coupling pattern using the 50mm F1.8 lens as the standard. Starting from slow shutter speeds, the lens is set at wide-open aperture until the shutter speed reaches 1/60 second, with only the shutter speed changing as brightness conditions vary. At shutter speeds faster than 1/60 second, the

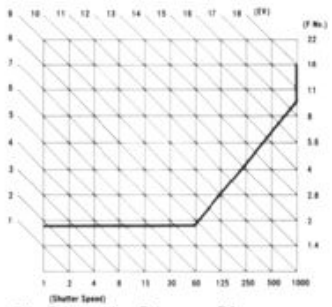


Fig. 5 Regular Program Diagram

program coordinates changes in shutter speed and aperture at a 6/5 inclination as shown on the graph. A major consideration of the program design was to keep shutter speeds as high as possible for general use in order to minimize camera shake. For still more intensely lit subjects the aperture is progressively stopped down to provide increased depth of field.

3. Variable "OTF" Program:

The adaptation of TTL Direct "OTF" Light Measuring allows the photographer to tailor the program to his own specific requirements, by intentionally setting specific aperture values on the lens. In effect, this means the photographer has an unlimited choice of program settings, and the ability to predetermine depth of field while retaining the convenience of program operation.

Fig. 6 shows the program pattern obtained when the lens aperture is intentionally set to F5.6 in order to assure the desired depth of field. And, as the exposure accuracy is quite unaffected by the selected aperture setting, any number of program patterns can be set, as you can see in the same figure.

Although the lens aperture should be set to the minimum for normal program operation, sometimes surprise shots catch the photographer with a different lens setting. Most program cameras respond by giving a wrong exposure and ruining the picture. But the OM-2S PROGRAM will, as we have seen above, still give correct exposures. The only proviso is that the shutter speed for the subject must be within the 1/1000-second maximum speed available. If the subject is too bright, the overexposure situation is indicated in the viewfinder by this symbol (⟨o⟩) and the word "OVER" flashing on and off on the LCD display. There is also a PCV audio warning to make doubly sure no pictures are accidentally lost if the lens aperture ring is inadvertently turned while taking the camera out of the case, etc.

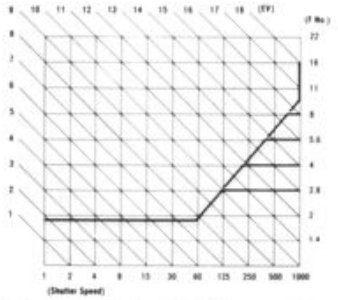


Fig. 6 Continuously Variable Program Diagram

4. "OTF" Program Flash function

"OTF" Program Flash is possible when any of the OM System T Series flash units is used. The flash unit will fire automatically whenever it is switched on and the shutter speed is 1/60 second or slower. In this situation, the camera's program automatically shifts three aperture settings to the special Flash Program. The flash emission at this predetermined aperture is then regulated by the camera's TTL Direct "OTF" Light Measuring system to assure a perfect exposure. As with the OM-4, the results of the flash exposure— whether the picture was correctly, over- or underexposed—are shown immediately afterwards on the viewfinder display.

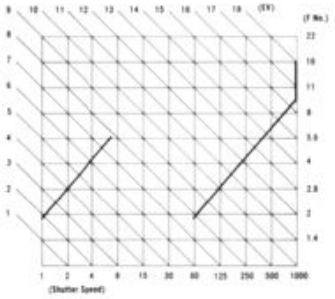


Fig. 7 Program Diagram with Use of T Series Flash Unit

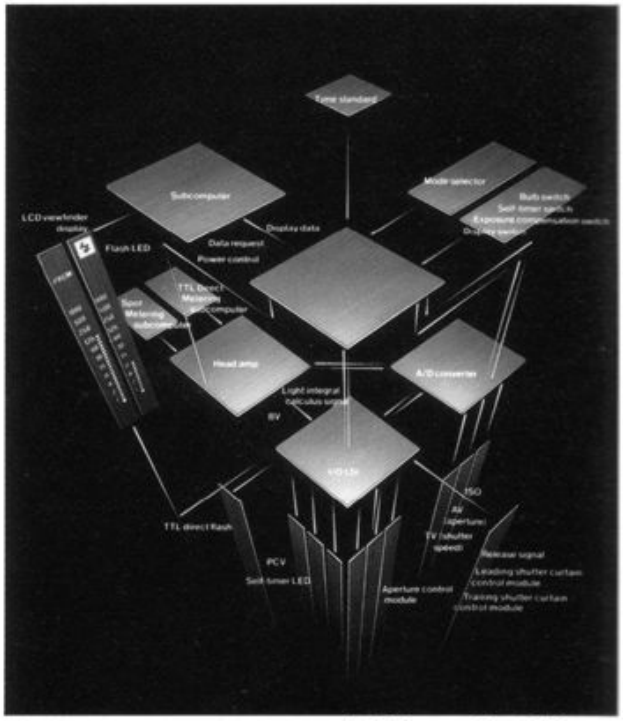


Fig. 8 Exposure Control Diagram

The meaning of a true system camera

The important thing about a true system camera is that it can shoot virtually anything. And that goes all the way from astrophotography of stars and planets, to photomicroscopy of minute organisms. Obviously, though, that kind of versatility calls for more than just a basic camera body. To achieve precisely the kind of performance you need, you have to assemble together a number of different, modular system units. The possibilities are staggering. But so is the investment. It is practically impossible to buy an entire photo system at one time. The way to build your own system is to start off with a small number of units, and add new ones when they are needed. That's just plain common sense.

Unfortunately, many photo systems do not allow you to build up a system gradually over the years. Just when you have built up an impressive investment in equipment, the camera model and the entire system change. You can't use your old system with one of the new cameras. You can't use new system units with your previous equipment.

Olympus was determined not to get that kind of a reputation. One of the central design concepts of the OM System was to maintain complete compatibility among system units, regardless of the time they were purchased and of the appearance of new OM camera models. This concept has been faithfully adhered to, with the result that the OM System is not only the most comprehensive available, but affords virtually 100% interchangeability among all camera models and system units. Therein lies the true meaning of a system camera.

It therefore goes without saying that the new OM-2S PROGRAM can use all OM System Zuiko lenses without modification. In the same way motor drive and winder units, bulk film backs, etc. are also compatible.

Summary

As you can see, the OM-2S PROGRAM has taken on a completely new and exciting role. From the convenience of program photography to the unbeatable exposure accuracy of Spot Metering for full creative control, the new OM-2S PROGRAM covers a truly remarkable range of photo skills and techniques. At the same time it serves as a perfect introduction to the comprehensive OM System. This new camera is both an opportunity and a challenge, allowing you to put more into photography and get more out of it than ever before. VA