

Number

11

# OLYMPUS®

The International Magazine of Photographic Information 1989

## VisionAge



### The Secret of the Best-Selling Camera Worldwide – “The AF-1 Twin Story”

An analysis of all the features of this superior compact camera and a disclosure of the secrets of its advanced technology.

### A Report by an Intrepid Photographer – “Erasing the Borders”

The establishment has been unable to cast its mold over a Moroccan-born photographer.

### In the Forest of the Blackstone Eagle Owl – “The Birds of Northern Japan”

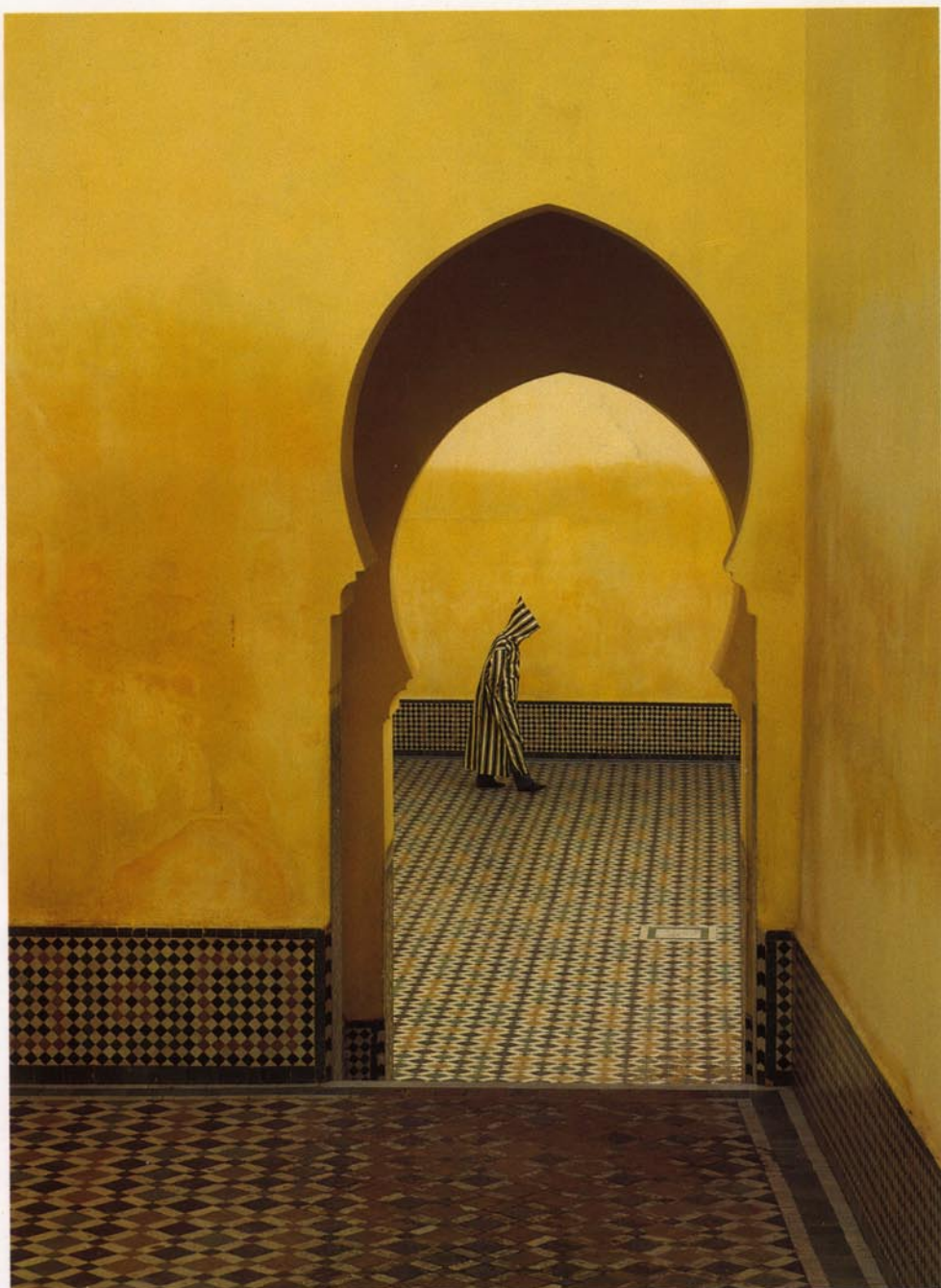
A photo-report from Hokkaido, called the last refuge in Japan for nature and a paradise for birds.

### Turning Everything Upside-Down – “The Olympus XA Story (4)”

Pursuing an unknown lens design, the relentless battle of numbers with a computer started up in earnest.

### The Grand Prix Winners for '88

An introduction of the excellent pieces awarded prizes in the Third Annual Olympus VisionAge International Photo Contest '88.





# VisionAge

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## Foreword from the Editors

We would like to present VisionAge No. 11.

In this issue of VisionAge, we have made a break from the traditions of the previous ten issues. Here, we have tried to incorporate as many opinions and requests from our readers as possible, and have used new methods of editing which we hope will carry us in new directions.

One addition that we have made is the inclusion of many articles that do not simply concentrate on the mechanics or techniques for using cameras, but which are geared for people who take photos or use a camera as part of their daily life.

In the article TECHNICALLY SPEAKING we thoroughly analyze the Olympus AF-1 Twin\*, and the creativity that made this such a

superior camera. This camera has continued to be a best-seller worldwide.

In our TECHNICAL REPORT we also focus on the new "concept" camera, the Olympus AZ-300 Super Zoom, which is very popular in many countries. In a photo-documentary, we also introduce you to the Silk Road running through Asia.

We started our new PHOTO TECHNIC SERIES with a great demonstration of little-known methods of reversal film which provide good results. These should be useful for beginners and advanced photographers alike.

Naturally, we have included feature articles which introduce the work of photographers from many different countries.

NATURE PHOTOGRAPHY is an article explaining the nature protection campaign of Olympus.

We believe that, as usual, we have provided a full fare which will







Erich Hartmann

satisfy both amateur and professional photographers.

In the article NEWS FROM OLYMPUS, we report on novel developments for new products such as the Olympus OM-4Ti BLACK\* and the unique O-Product camera. With these cameras you can definitely say that we are creating new fashions in camera design.

We have even inserted an article about the awards for the Annual Olympus VisionAge International Color Slide Photo Contest. This contest provides camera enthusiasts around the world with a rare chance to display their work to a worldwide audience. In this way, we help to improve the quality of photography, year after year. We eagerly look forward to your pleasure and enjoyment of this issue of VisionAge.

\*Infinity Twin, Infinity Super Zoom 300, OM-4T BLACK in North America.

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### 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.*







### Richard Kalvar

As a photojournalist, Richard Kalvar has covered the Ocean-Hill/Brownsville school strike, the British coal miners' strike, essays on French families, and English life. Most recently he has been covering the political aspects of American life for the Public Broadcasting System weekly program "USA: People and Politics," and for American and European magazines. He is also working on a major essay on the Fortune Society for Time-Life Books. Portfolios of his work have appeared in *Creative Camera*, *Zoom*, *Photo World* and other leading publications.



## Susan Meiselas

Susan Meiselas was born in 1948. After the special study of pedagogy at Harvard University, she learned photography. She participated in Magnum in 1972. In 1976, she published a photography book, "Carnival Strippers." She did not intend to photograph war sites, but while she was traveling in Nicaragua, a civil war was being waged, and she stayed there to photograph the realities of war. For this series of reports, she was twice awarded the Capa Gold Medal. Today, she aggressively photographs incidents in Central America. In 1981, she published the book "Nicaragua." She lives in New York. Currently, she holds the position of vice chairman of Magnum's New York regional office.



## Magnum Photos

Magnum Photos is an association of some of the world's leading photographers, established in 1947 in Paris, largely through the efforts of the late Robert Capa and Henri Cartier-Bresson. By bringing together the finest photographic talent in an organization that emphasizes humanism and technique, Magnum has enriched our civilization with some of its most memorable photographic images. Magnum is headquartered in New York and Paris, and at present has a total of 40 full members, associate members and contributing photographers.



# The AF-1 Twin Story

An interview with Tatsuya Suzuki  
(Manager, Product Development Department, Consumer Products Division) and  
Akiteru Kimura  
(Engineer, Product Development Department, Consumer Products Division).

Tatsuya Suzuki (TS)



Akiteru Kimura (AK)



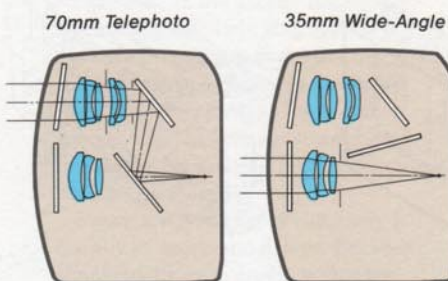
The recently announced AF-1 Twin, a fully automatic 35mm compact camera featuring an innovative twin lens system, was the brainchild of a team of technicians at Olympus' Hachioji Research Center. Earlier this year, VisionAge spoke with two key members of the team, Mr. Tatsuya Suzuki and Mr. Akiteru Kimura. This is the story they told . . .

VA: In undertaking development of the AF-1 Twin, what overall goals did you set?

AK: Well, we knew we wanted it to be a weatherproof, go-anywhere kind of camera. And we knew we wanted it to have a zoom or tele-wide lens. Since tele-wide offered the advantage of push-button convenience when switching focal lengths, we opted for that. Above all, the camera had to be compact — and much better than any-

thing any other manufacturer could make.

VA: At what point did you come up with the idea of using a twin lens system?



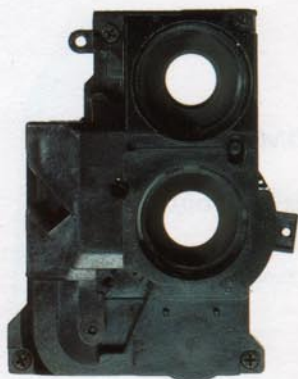
TS: Well, let's see. . . . At first we toyed with the idea of using a conventional tele-wide system with a lens barrel extension. But weatherproof integrity cannot be assured with such a set-up, and there would always be the danger of impact damage when the lens was extended. The twin lens system, on the other hand, allowed us to eliminate the moving lens barrel and provide the additional security of a sliding lens barrier.

When designing cameras, I believe the reliability factor is extremely important. Because whatever the situation, the camera owner should not have to worry about the camera.

But fitting the twin lens system into a compact, weatherproof body wasn't



Shutter Unit



Cut Model of AF-1 Twin



easy — or cheap. Because unlike telewide cameras that simply insert two additional lenses behind the wide-angle lens when they are switched into telephoto mode, the AF-1 Twin contains a complete five-element telephoto lens in addition to its wide-angle lens.

In the end, however, we decided to go with the twin lens system because it seemed to offer the best overall performance. But it was a solution we arrived at only after much deliberation.

VA: Wasn't there a problem fitting two complete lenses in the body? You said earlier that you wanted the camera to be compact, above all . . .

TS: Indeed there was. Primarily because the swing-arc of the bottom mirror — there are two mirrors in the system — occupied the only space available for the shutter motor. So we knew we would either have to eliminate the shutter motor or make the camera taller. Since compact size was a primary goal, we decided to develop a one-motor system. Successful development of this one-motor system was certainly one of the most vital steps in the entire design process.

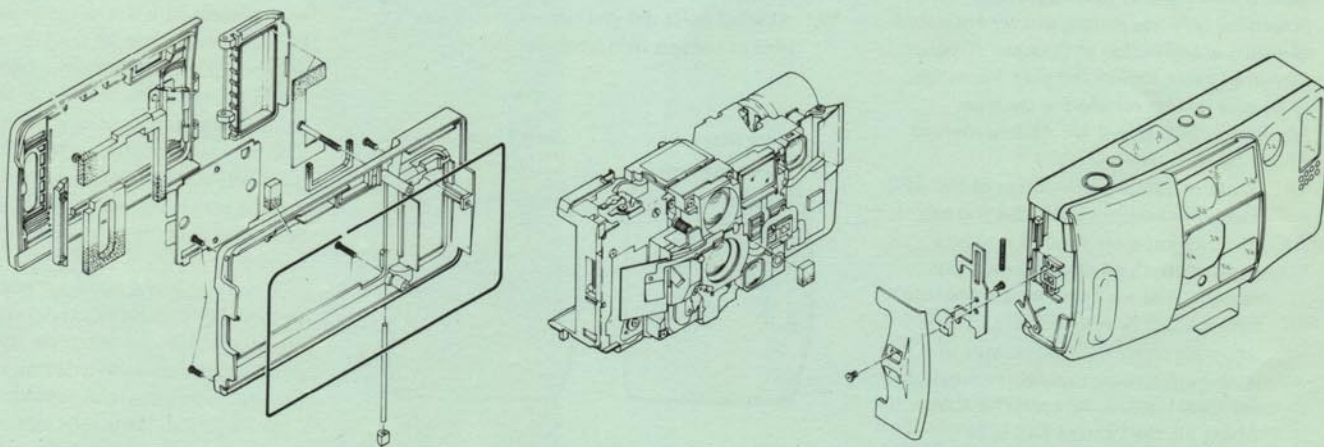
VA: Are there any other technical advances incorporated in the AF-1 Twin?

TS: Yes. Because we equipped the AF-1 Twin with a 70mm telephoto lens, we wanted to improve the accuracy of the active infrared autofocus system.

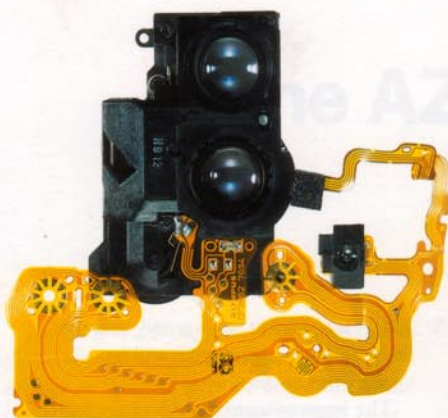
One solution would have been to increase the distance between the infrared illuminator and sensor windows. But here again, this went against our goal of compactness. So instead of separating the windows more — and increasing the size of the camera, we developed a more accurate AF system.

VA: Was this new AF system something that you were working on indepen-

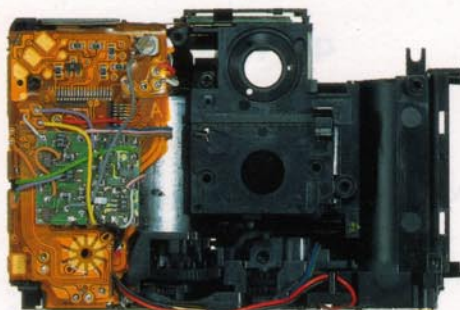
Unit Assembly Diagram



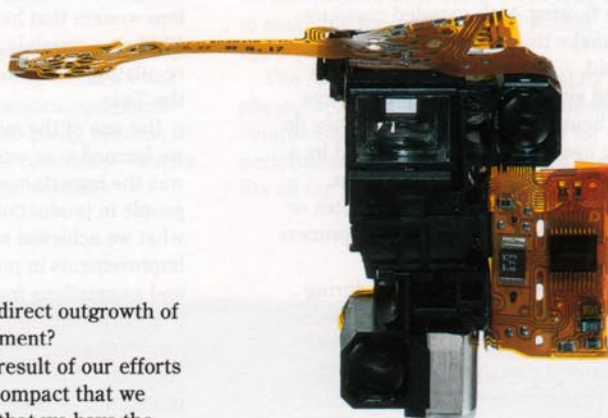




Twin-lens, Shutter Unit. Shutter FPC (Flexible Printed Circuit Board)



Body, Film Advance Unit, Main Circuit Board.



AF, Viewfinder Unit Autofocus.

dently, or was it a direct outgrowth of the Twin's development?

TS: It was purely as a result of our efforts to keep the Twin compact that we developed it. Now that we have the technology, though, we intend to utilize it in future products.

VA: To return to the question of using one motor to operate the film advance and shutter release mechanisms. . . . On the one hand, the shutter release mechanism would seem to require extremely fast response, while the film advance mechanism would seem to require considerable torque. How did you meet these disparate demands with a single motor?

TS: This was indeed a very difficult problem — how to drive these two different mechanisms with a single motor. This was the toughest technical problem we faced. In the end, we were able to design a differential gear unit — similar in principle to the ones used in automobile drive train assemblies — that provided the solution.

VA: Is this the first time a differential gear system like this has been used on a camera?

TS: No. It's the second. We also used a differential gear unit on the AF-10 that allowed us to drive the shutter release and AF mechanisms with a single motor. On the Twin we applied essentially the same technology, but in

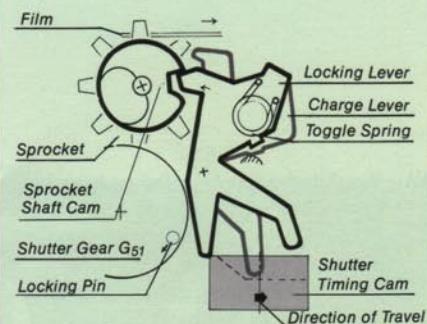
a more advanced form.

There are actually two differential gear units in the Twin. One splits drive power between the shutter unit and film advance mechanisms. The second splits shutter unit drive power between the shutter blade opening and closing mechanism and the autofocus mechanism. This allows drive power to be instantly redirected to the appropriate mechanism.

In the first instance, the switchover from shutter release to film advance is effected via a cam and ratchet mechanism. In the second instance, an electromagnetic switching system is used. So overall, you might say that the solution was one of simple mechanics. Mind you, an extremely high level of precision has to be maintained during the machining process, but the solution itself is quite simple.

I have always believed simplicity is the key to successful design. Because simplicity leads to products that are more compact, more reliable, and easier to use.

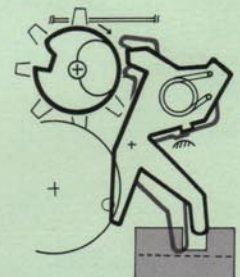
# Film Advance & Shutter Release Drive Power Switching Mechanism



① When the shutter is activated, power is directed to Shutter Gear G51 which rotates to operate the shutter while the film advance Sprocket is held locked by the Locking Lever.



② Activated by the Shutter Timing Cam, the Charge Lever rotates. This reverses the direction of the Toggle Spring pressure, causing the Locking Lever to rotate and release the Sprocket.



③ Immediately after the shutter release sequence is completed, film advance begins. The Locking Lever, having released the Sprocket, now locks Shutter Gear G51 while the Sprocket rotates to advance the film.



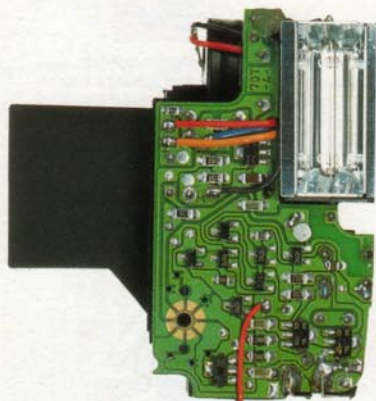
④ During film advance, the Sprocket Shaft Cam causes the Charge Lever to rotate, reversing the direction of the Toggle Spring pressure. This in turn causes the Locking Lever to reverse direction and lock the Sprocket.



VA: You did give the AF-1 Twin a four-shot Continuous mode, though. . . .

TS: Because it was well within the capabilities of the camera just as it was designed. We could, in fact, have set it up to shoot an entire roll of film in Continuous mode. But that's not the point, is it? Because in any normal shooting situation, you can adequately capture a sequence of events or action in four frames — more than that is usually a waste of film — and we always keep the actual shooting situation in mind when we design.

The flash unit is a good example of that, too. There, we developed a high-powered voltage booster and a way to regulate the power. This gave us the power we needed to go with the 70mm lens, and allowed us to regulate it during Continuous Flash operation for faster recycling. Because in the type of indoor situation where Continuous Flash mode is generally used, the subject is rarely far away, and flash power can be lowered for faster recycling. Again, it was the end-use situation we had in mind. . . .



Flash Unit

VA: Is this the first time a tele-wide camera has been made available in a flat, lens-barrier camera?

TS: Yes, I believe so. . . . I've always been a strong proponent of lens-barrier design. Lens-barrier cameras look sleeker and simpler, for one thing — especially with the barrier closed. The overall lines are more flowing, with rounded contours that make the camera comfortable to hold.

And since cameras spend far more time being carried around than they do being used, the protection offered by a lens barrier is also very important.

VA: Are there any interesting anecdotes or episodes from the development process that you could share with us?

TS: Well, let's see. . . . At one point during development we discovered that we had improved the response time of the mechanical components so much that the calculation speed of the on-board microcomputer became the limiting factor!

AK: One time, I stayed up late assembling one of the prototypes. When I was finally finished — it must have been about four in the morning — the camera wouldn't work. Then I found the film advance sprocket, which I had somehow left out! Because it was supposed to be installed early in the assembly process, I had to strip everything down almost all the way again. I was so frustrated! (laughter)


TS: Maybe you shouldn't tell our readers that you were working until 4 a.m. People overseas already seem to think of Japan as a nation of workaholics. (laughter)

Seriously, though, I think it takes that kind of commitment if you really want to produce something new. And it's a challenge; not just some job that has been thrust on you, but something you want to see through to completion yourself. If I'm not mistaken, Thomas Edison was also known to stay up all night when he was working on something new.

VA: Do you think we'll be seeing much AF-1 Twin technology in future Olympus products?

TS: Yes. A lot of what we learned, and the technology we developed, will be applied to new products.

The improvements in AF rangefinder electronics that I mentioned earlier will certainly be utilized. And there are some new grinding and coating technologies that we developed for the twin lens system that have broad potential. We'll also certainly use the flash power-regulating technology we developed for the Twin.

But one of the most significant things we learned — or were reminded of — was the importance of input from the people in production. Because much of what we achieved was made possible by improvements in production techniques and suggestions from the factory floor. In this respect, the AF-1 Twin is an excellent example of how close cooperation between design and production personnel can result in major technological breakthroughs. 



# The AZ-300 on the Silk Road

by Jacky Yip

*Jacky Yip is a Hong Kong-based professional photographer. Born in China in 1951, he arrived in Hong Kong in the mid-1950s and began work as a photographer in 1980. Long fascinated by China's ancient Silk Road, he made his first photographic trip there in 1980. Since then he has returned five times, most recently in the summer of 1988.*

Before setting off on my most recent trip, I began looking for a backup camera when not using my standard camera equipment. I chose the AZ-300 Super Zoom, because it seemed to fit the bill as a convenient camera well-equipped with special features.

What the camera offered was its zoom lens, macro lens, autofocus, single and continuous auto winding and rewinding and a built-in flash unit able to provide fill-in flash. Other features were exposure compensation, double exposure, spot metering and servo focus, all combined in a small, easily carried camera with which I would be able to make the most of nearly all shutter opportunities.

The AZ-300 Super Zoom is ideal for photographers dissatisfied with conventional compact cameras, who are looking for SLR performance with compact camera ease. It fits all the performance of an SLR-System

Photo: 1



*The photographer and his wife in the backstreets of Turpan, Xinjiang.*





Photo: 2 38mm



An elderly Uyghur man playing a traditional instrument, Hami, Xinjiang.

Photo: 3 105mm



Photo: 4 38mm



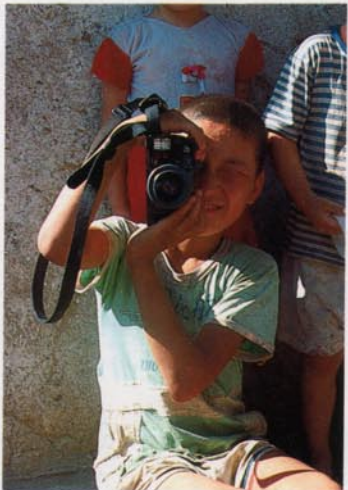
Chinese tourists pose with the same Uyghur dance group after watching a performance, Grape Gorge, Turpan, Xinjiang.

Photo: 5 105mm



A traditional Uyghur dance group, Grape Gorge, Turpan, Xinjiang.

Photo: 6



An Uyghur boy intrigued by the AZ-300, Turpan, Xinjiang. He took Photo: 1. The AZ-300 is completely automated to make regular shooting a pleasure, not a chore. It's so simple anyone can learn to operate it in seconds.

camera into a single camera body — and makes that single camera smaller, lighter and easier to use than an SLR.

Once traveling, I found the AZ-300 came into its own in fairly specific ways. At the end of a hard day's shooting, for instance, I would unload my professional gear but still want a camera handy when I went on to a welcome banquet or out for a walk. I found I was still equipped to capture the shots I wanted with the AZ-300 and its nearly 3x power zoom and flash.

When it came to close-ups and full face portraits I found the macro feature easy to use.

Simply touching the Power Zoom button lets me pick any desired focal length from

wide angle to full 105mm telephoto. And operation was so fast the AZ-300 focused almost instantly, as I never missed a shot.

The autofocus was effective all the way down to EV3, about the dimness of candlelight. And an AF illuminator switched on automatically when needed, so I could even autofocus quickly and precisely in the dark.

The fill-in flash was also remarkably convenient. For example, I could take pictures of fellow passengers inside a bus at sunset, capturing both faces and sunset on film.

Built into the AZ-300 is an ultra compact Zoom flash linked to the Zoom lens so the flash angle in accordance with the lens focal length chosen for each shot.

The distances between towns and tradi-



Photo: 7 38mm



Uygur children inside Emin Minaret, Turpan, Xinjiang.

Photo: 8 105mm



Photo: 9

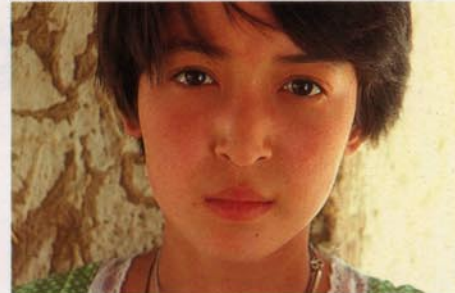


Photo: 10 38mm



Nomad Kazakh women camping in yurts beside Barkol Lake, near Hami in Eastern Xinjiang.

Photo: 11 70mm



Photo: 12 105mm



Photo: 13 38mm



A camel for tourists, Gaochang Ruins, Turpan, Xinjiang.

Photo: 14 105mm

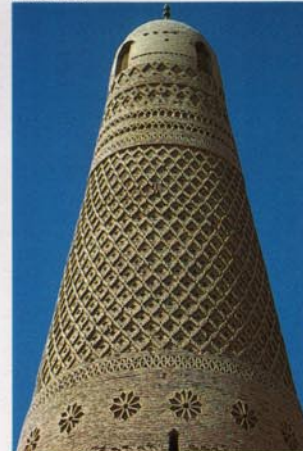


Photo: 15




An 18th century Emin Minaret, Turpan, Xinjiang.

Photo: 16



tional resting points on the Silk Road are huge and tiring. Even at the end of particularly exhausting days, however, I was usually still carrying the AZ-300.

One picture is worth a thousand words, they say, and I like to study China through my lenses. Though I have traveled elsewhere in China, it is the Silk Road which continues to attract me. Besides its deserts, mountains and colorful minorities, the Silk Road also provides a fascinating insight into Buddhist history. In the first century AD Buddhism came to China along the Silk Road, bringing a tradition which flowered into the cave paintings of Dun-Huang and the vast rock Buddhas of Binglingsi in Gansu. In the future, I hope to travel further along the Silk

Road, following the steps of the Great Tang Dynasty Chinese monk, Xuan Zang, who traveled west along the Silk Road as far as India in search of Buddhist scriptures. And I'll tell the whole story, in pictures. Naturally. 



# Using Color Reversal Film

by Hidetaka Nawa

## What Is Color Reversal Film?

These days, most amateur photographers and hobbyists use color film, preferring to leave black & white film to professionals. Of the two types of color film available — color negative and color reversal — color negative film is by far the more popular. It is easy to use, and gives photographers a ready means of obtaining color prints.

Color reversal film — also known as color transparency or color slide film — differs from color negative film by reproducing the colors of the subject exactly as the photographer sees them. Consequently, color reversals do not need to be printed. They can be viewed using a slide projector and screen, or simply by holding them against a light source. And because there is no intermediate printing step required, colors appear significantly more vivid and clearer than in prints taken from color negative film.

Getting successful results with color reversal film can be difficult, however. I'm sure most readers are familiar with the feeling of letdown when color reversals don't turn out as expected. The most common cause of such disappointing results is improper exposure. Color reversal film is far harder to expose correctly than color negative film.

The different developing processes for color negative and reversal films also influence results. When color negatives are printed, it is possible to make certain corrections for poor exposure or color reproduction. Color reversals, on the other hand, faithfully record the quality of the light, and leave no room for making later adjustments. So if the light conditions are not optimal when shooting, color reversal film will produce results that are less than satisfactory.

But with a little prior knowledge about color reversal film, it is possible to achieve effective results. In this article, we'll use actual examples shot under a variety of lighting conditions to illustrate the basic techniques needed for successful color reversal photography.



Photo: 1a



Photo: 1b



## Remember: Color Reversal Film Faithfully Reproduces Light and Color

The difficulty with exposing color reversal film arises because of limited exposure latitude; that is, color reversal film reproduces a narrower range of brightnesses than color negative film which produces prints having roughly the same brightness over an exposure range of up to four f-stops. The brightness obtained with color reversal film, however, varies significantly with each f-stop, completely changing the effect in the finished shot. Strictly speaking, the exposure latitude of color reversal film extends only one-third f-stop above or below the correct exposure level.

*Shot with ISO 100 film, using 28mm F2.8 lens at f11. 1/15 sec. shutter speed for Photo 1a. 1/30 sec. for Photo 1b.*

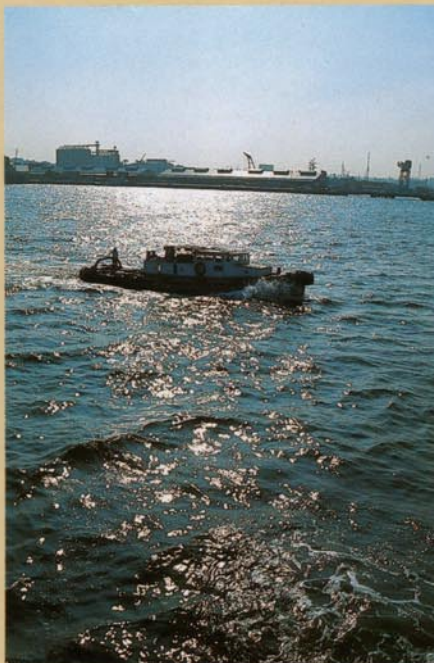


Photo: 2a

The narrow exposure latitude of color reversal film requires particular care when shooting subjects against backlighting, for instance when direct sunlight fills the top section of the frame, or when bright light is reflected off a surface like water. The composition in Photos 2a & 2b would result in an underexposed shot if the camera's averaged light reading were used to determine expo-

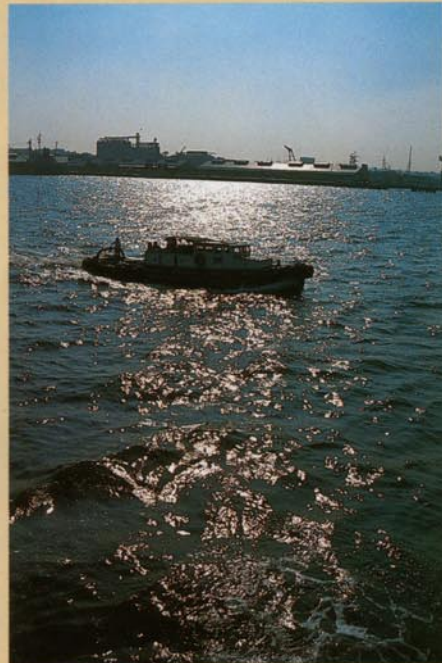


Photo: 2b

sure. To capture the subject clearly, the photographer got close to the subject to take the light reading. Another possibility for users of the Olympus OM-4 is to use spot metering to take partial light readings of the composition.

*Shot with ISO 100 film, using 100mm F2.8 lens at f8. 1/250 sec. shutter speed for Photo 2a. 1/1000 sec. for Photo 2b.*



Photo: 3a



Photo: 3b

Reflected light causes the same difficulties for color reversal film as backlighting. In these photos, the narrow exposure latitude of color reversal film makes it impossible to capture both the sunlight reflecting off the window pane and other bright areas. When setting exposure, therefore, the photographer has to choose just one area of the composition. In these photos, the photographer avoided measuring the reflected sunlight to get correct exposure.

*Shot with ISO 100 film, using 100mm F2.8 lens at f8. 1/250 sec. shutter speed for Photo 3a. 1/1000 sec. for Photo 3b.*



# PHOTO TECHNIC SERIES



Photo: 4a

These photos use backlighting effectively to capture silhouettes of the main subject. The technique for exposing color reversal film to produce silhouettes is the reverse of that used in Photos 2a & b and 3a & b. In this composition, the photographer took the light reading from the highlight in the bright sky, underexposing the main subject so that it appears in silhouette. If the exposure setting had been made using a light reading from the main subject (lamp), the sky would have been overexposed, and the effect of the lamplight itself would have been diluted against the bright background. In situations like this, it is better not to use AE or to overcompensate for exposure.

*Shot with ISO 100 film, using 28mm F2.8 lens at f5.6. AE was used for Photo 4a and a 1/30 sec. shutter speed for Photo 4b.*

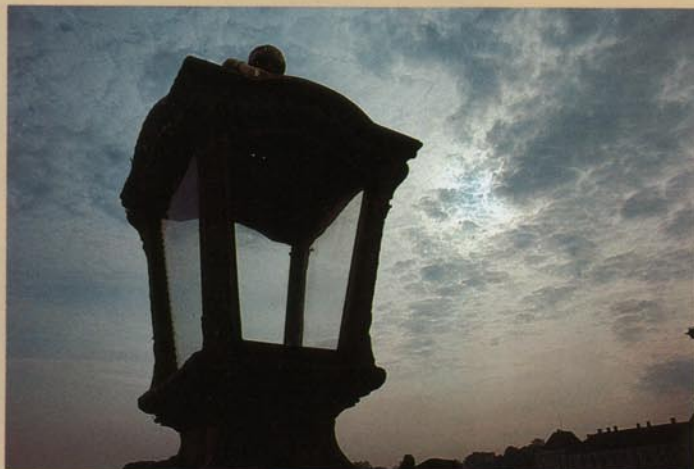


Photo: 4b

When a white or lightly colored main subject occupies a large area of a composition, use of AE will result in an underexposed shot that fails to clearly reproduce the subject's colors. To overcome this problem, either use an exposure setting one or two f-stops higher than the camera's metered reading, or take multiple spot meterings with the OM-4 before determining exposure. The highlight control feature on the OM-4 is also useful for all-white subjects. *Shot with ISO 100 film, using 90mm F2 macro lens at 1/60 sec. shutter speed. Exposure set at f8 for Photo 5a and at f2.8 for Photo 5b.*

The components of this composition — a white boat against a blue sky, with sunlight reflecting off the water — are some of the most difficult to handle successfully with

cameras that have single-spot light metering. Cameras with center-weighted light metering are even less satisfactory, and will certainly produce underexposed results. For this situation, the best solution is to use exposure compensation, if available, or to bracket your shots. Multi-spot light metering, like that on the OM-4, allows the photographer to use AE and eliminates the need for bracketing. *Shot with ISO 100 film, using 21mm F3.5 lens at f8, 1/60 sec. ~ 1/125 sec. shutter speeds.*



Photo: 5a



Photo: 5b



Photo: 6a



Photo: 6b

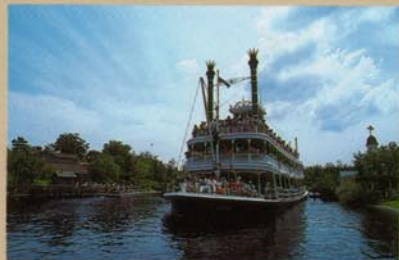


Photo: 6c



## Color Reversal Film and Color Temperature

The nature of a light source influences the color of the light emitted. Changes in color due to the type of light source are said to be variations in the quality of light. Color temperature is a means of quantifying the quality of light. Light with a low color temperature appears to have a reddish tone when reproduced photographically; at a high color temperature, the light will give a bluish tone to photographs.

Light in the early morning, before the sun rises, has a high color temperature and will appear blue in photographs. After sunrise,

the color temperature falls, giving photographs a reddish tone. As the sun crosses the sky, the color temperature rises gradually, before it falls again prior to sunset (notice the reddish tone in Photo 7a). After sunset, color temperature rises once more to give photographs a bluish look. Color temperature is also high on cloudy days or in shade.

Color reversal film faithfully reproduces the changes in light due to varying color temperatures. An LB filter is the best way of compensating for the effects of high or low color temperatures.

*Shot with ISO 100 film, using 35-70mm F3.5-4.5 zoom lens and program AE.*



Photo: 7a



Photo: 7b



Photo: 8a



Photo: 8b



Photo: 8c

Incandescent bulbs and similar tungsten light sources generate light with a low color temperature, so when using color reversal film in such light the results will have a reddish tone (see Photo 8a). An LB filter compensates for this, and ensures satisfactory results like Photo 8b.

Fluorescent light features a rather high color temperature, and its particular radiant spectrum further adds a greenish hue to photographs (see Photo 8c). Using a flash eliminates this spectral effect; or, when flash photography is not possible, a color compensating filter will also help. *Shot with ISO 100 film, using 35-70mm F3.5-4.5 zoom lens and program AE.*

VA



# Erasing The Borders

## A profile of Bruno Barbey

Looking at the work of Bruno Barbey, dotted with the names of countries like an atlas, one sees that the establishment has been unable to cast its mold over this Moroccan-born Frenchman. Quickly abandoning his studies at the Ecole des Arts et Metier in Vevey, Bruno visited Italy in the 1960's, and there completed his first work of reportage. Thus began his career in news and illustrative photography. Yet what could have turned out to be a job merely photographing locations to order took a different turn in 1966, when Bruno Barbey joined the team at the Magnum Agency, whose cooperative organization granted him an abundance of freedom. From then on, he covered one by one those places in the world rocked by the tragedies of the times: Southeast Asia, the Middle East, South America. Like the fires of conflict ceaselessly bursting out or spreading across the world, Bruno Barbey proved his own intrepidity on all fronts. His reports multiplied along with the torrent of events, the makers of ruin, and the body counts. But, unlike other reporters on war, Barbey refused to cater to the morbid appetites of the press, and chose instead to document those scenes in which death gives way to the survivors and their struggles: without any affectation, Bruno Barbey bears witness to the hopes of the living.

Set the majority of the time at the scene of conflict or war, his work is transcendent, as if the absurd timing of the violence cannot quite eclipse the spirit of the people who are stricken by it. Whether in Biafra, Poland, Iran, Palestine or Chile, in the crowds or on the faces of the people his unique perspective bears an image of the world, coherent, sensitive, and able to communicate the desolation which exists beyond any one continent, under any single sky. Published regularly as news photos in magazines, the work of Bruno Barbey asserts the human dimension which he rediscovers in the crowded trains of India and the refugee camps of Palestine as well as in the frenzy of Carnival in Rio.



Fez/Morocco — Mosque 35mm F2





## Bruno Barbey

Bruno Barbey was born in 1941 in Morocco where he spent his childhood. He began his professional photographic career in 1960, at which time he worked for the Swiss publisher "Editions Rencontres" who commissioned him to document several countries. He joined Magnum Photos in 1966 and has covered stories on all continents.

Barbey's work is regularly published both in books and as major "essays" in international magazines: *Life*, *The Sunday Times London*, *Stern*, *National Geographic* magazine, etc. Photographic books by Barbey include: *Naples* (1967), *Iran* (1977), *Nigeria* (1979), *Bombay* (1979), *Poland* (1982) and *Gabon* (1984).

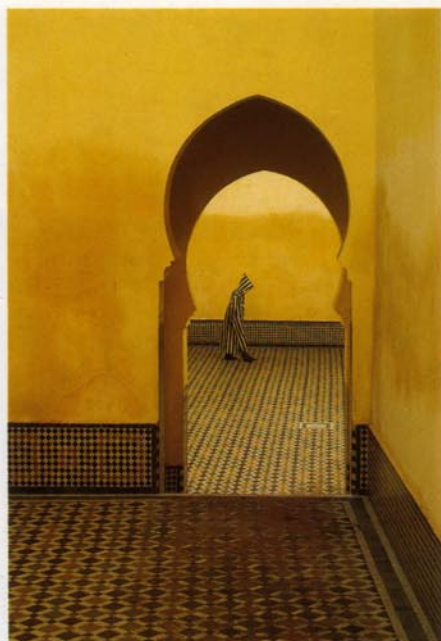
He has received several awards for his photographic achievements from international associations such as the Overseas Press Club, and the University of Missouri Photojournalism Award and others. His work has been shown in exhibitions including the Bibliothèque Nationale in Paris, the Kunstmuseum in Zürich, the Photographers' Gallery in London and the Museum of Modern Art in Rome, as well as being on permanent display in several museums.

And when his photographs are sheltered by peace, they share with his war photos an echo of some greater objective, of a sympathy which seeks to grasp a sense of common loss or shared tranquillity. Thus the total effect of his work on Poland published simultaneously in 1982 in three editions in Paris, Hamburg and London adds an extensive new dimension to previous accounts. His studies of the Church, the regime and social reality mingle impressionistically with views of the countryside and the traditions of a nation emerging from successive change.

Barbey's powerful reporting on Poland, for which he received the prize of the Overseas Press Club in the United States, is not unique in communicating his persistent interest in a certain part of the world. From the time of his debut to his publication by *Rencontres*, Barbey illustrated a number of works, notably those for *Jeune Afrique* in 1976 and on Iran and Nigeria in 1978. These were



Tetouan/Morocco 35mm F2



Mernes/Morocco 35mm F2.8 Shift

followed by his studies of India in 1979, published by *Time Life*, the one that Chêne dedicated to Gabon in 1984, and finally his portrait of Portugal for the German editor Hoffman.

A land of fragrances and colors bringing him back to his own childhood, Morocco represents special territory for this humanist photographer. The images of Brno Barbey succeed, through his solitary promenades, in rendering Moroccan villages with a timelessness which remains sheltered by an architecture creative yet pure, formed from materials at once sober and refined. In his intimate rediscovery of these places, the characters stand as the central figures, while the age-old streets change little from one year to the next, like this alley in Tetouan blending its brown and turquoise, or these drying hides, laid out like flagstones in front of a cemetery.

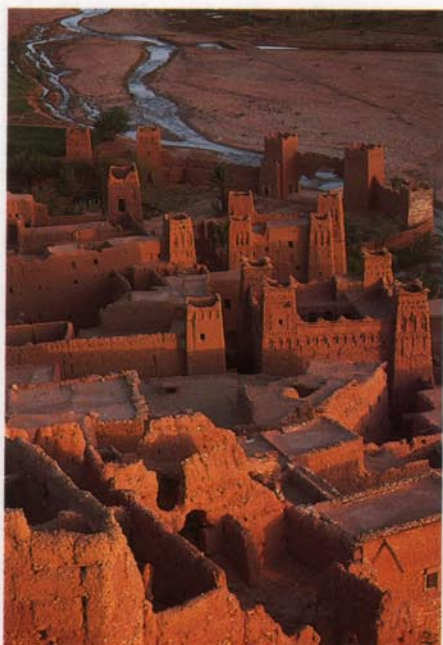


Fez/Morocco 28mm F2.8





Toscane/Italy Zoom 75~150mm F4



Morocco Zoom 75~150mm F4

Bruno Barbey's photos are thus as linked through his work as a whole as they are to the land which they rediscover. This is no coincidence, particularly since this book on Morocco coincides with his study of the south of Spain, the arid terrain of the Estremadura. Through an approach which erases the latitudes, Bruno Barbey's Morocco stands intact, recalling the Spain of a few centuries ago, bent under the yoke of the Moors.



Florence/Italy 35mm F2

Along with Morocco, Bruno Barbey's collected images of Italy record another of the serene stopping places which appear occasionally in the itinerary of this great reporter, allowing him the easy pleasure of playing on the light, whether it is throwing its shadows from the Towers of Siena, or washing over the clay palaces of Maghreb. At the same time, Barbey's aestheticism never turns stiff, and the tourists of Florence have as much a right to the magical vistas they enjoy as to the works of art which attract them.

Identified in all writings as a reporter, Bruno Barbey has nevertheless received the acclaim of museums which have preserved his work in their collections, and of galleries worldwide, furthering his unique vision through personal exhibitions. Several retrospectives followed the presentation of his work on Italy by the Bibliothèque Nationale in Paris in 1967, notably those at the Photographers' Gallery in London, at Rencontres in Arles, and at the Museum of Modern Art in Rome. And in the particular spirit of



Siena/Italy Zoom 75~150mm F4



Toscane/Italy 35mm F2



partnership which distinguishes Magnum, the agency has produced numerous exhibitions elsewhere around with world, such as the one in Tokyo in 1979.

Bruno Barbey has been working with Olympus equipment since the introduction of the OM System, whose performance and compactness he has valued for nearly 13 years. OM-3 and OM-4 bodies go with him on all his shoots. For a range of different purposes, he particularly favors the super wide-angle 35mm shift lens, an exclusive product which he often uses for architectural photography. As faithful to this brand as he is to the Kodachrome on which he records all his images, Bruno Barbey retains the finest memories of his meeting in 1987 with the creator of the OM System, Yoshihisa Maitani. His relationship with Olympus went beyond mere attachment when personal exhibits were hung on the walls of galleries opened by Olympus in Tokyo, Hamburg and in the new section of the Forum des Halles in Paris.

In the future, Bruno Barbey will continue to pursue his work as a great reporter, divided between the demands of the news and of the perpetual voyage he has undertaken for the last 20 years, a voyage in which photography serves as both his map and guide. **VA**



Florence/Italy 85mm F2.8



Florence/Italy 35mm F2



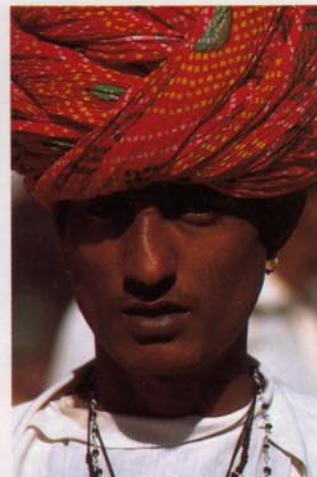
Florence/Italy Zoom 75~150mm F4



Florence/Italy 28mm F2.8



Pushkar/India 300mm F3.5



Pushkar/India 300mm F3.5



# The Birds of Northern Japan

by Tadashi Shimada



A Blakiston's eagle owl catching a trout for dinner.



## Tadashi Shimada

- 1949 Born in Saitama Prefecture.
- 1971 Graduated from the Department of Agriculture and Veterinary Science, Nihon University. He worked at a mountain goods company and thereafter lived in a mountain hut in the Southern Alps of Japan.
- 1972 He contributed to the first edition of the animal magazine "ANIMA." Since then, his work has been published mainly in magazines and photobooks dealing with birds. He has created his own world.
- 1980 He moved to Chitose City, Hokkaido.  
Member of the Photographic Society of Japan, the Japan Professional Photographer's Society, the Natural Science Museum, and the Wild Bird Society of Japan. Awarded the 17th Taiyo Award, the Newcomer Award of the Photographic Society of Japan, and the Photographic Society of Japan Award of the Year, 1986.

### PHOTOBOOKS:

Kingfisher, Jumping the Pure Streams. Birds in Utonai. Birds. A Moment of Wilderness. Scenery with Birds. Fire Bird. Kamui of Fire. Night of the Kamui. Kingfisher.



Vast, wide open fields interspersed by deep, impenetrable forests are part of the natural beauty of Hokkaido, the northernmost island of Japan.

The forests are configured in a complicated system of stratified layers ranging from towering trees to low-lying bushes, shrubs and dense ground cover. The area is



Caution! A yellow-throated bunting.



A Henson's marsh tit resting on a tree.



A Japanese great tit looking for food.



A Great Spotted Woodpecker knocking a tree.

Careful, this is a Japanese pied kingfisher.



An eastern grey heron has just made a catch.



rich in bird life, especially when compared to other bird inhabited regions of the country. This is especially true in areas where a river runs through one of these dense forests. In this type of habitat you will find species of birds that are unique to Hokkaido.

The most famous of these is the "Shimafukurou," or Blakiston's eagle owl. The Blakiston eagle owl is worshipped by the Ainu, the aboriginal people of Hokkaido. This owl stands at the highest level of the guardian gods of the Ainu people, the "Kotankorukamui." It is the largest owl in the world, with a height that can attain 70cm (27.5 inch) and a wingspan of 170cm (70 inch).

The "Shimafukurou" is a nocturnal bird that resides in holes bored in the trunks of giant trees. Its diet consists mainly of trout and salmon. Once abundant, in the past 20-30 years the number of Blakiston's owls

has decreased dramatically. Today, it is estimated that only about 100 birds are still living in the wild.

The reasons for their decline are simple. First, the people in the region are harvesting many of the fish which are the major food supply for the birds, especially in the rivers and estuaries which make up the owls' origi-



A great black woodpecker searching for lunch.



A flock of brown-eared bulbul crossing the sea.



A Honshu great spotted woodpecker flying through the forest.



A brown-eared bulbul taking rest.

Pallas's rose finches gathering food.



An owl sleeping in his nest.





nal habitat. Secondly, the trees in which the birds make their homes are being cut down for timber, one after another, in a dis-organized system of deforestation.

The Japanese government has established a program of randomly placing birdhouses throughout the area, but this program has had negligible results. Only through the kindheartedness of individuals can the birds be saved from extinction.

The particular birds in the field where I do most of my photography are a mated couple with one offspring. Every evening, they appear at the pond which I constructed for them and eat a great number of trout and dace.

But recently, I am worried that the field might no longer be a safe haven for them, so I am considering buying the land and turning it into a totally protected sanctuary.

The forests are also inhabited by eagles, including the white-tailed sea eagle and the Steller's sea eagle. In the summer, the region is also visited by the Japanese ruddy kingfisher, the Japanese Scops owl, and perennial birds like the great black woodpecker, the Japanese pied kingfisher and other species

of owls. In the winter there are birds such as the yellow-throated bunting and Pallas's rose finch.

Hokkaido is made up of a variety of landscapes, depending on the level of humidity. Of these, marshy areas with rich plant life, surrounded by dry plains, attract the largest bird populations.

In this kind of region grow plants like the double tawny day lily, *Iris Setosa*, *Armetis Princeps* and *Centrorubrum Makino*, making it an excellent nesting place for birds like the Ussurian yellow-breasted bunting, ruby throat, and Von Shrenck's road warbler. During the winter season, this area becomes the wintering place for the short-eared owl and the Siberian rough-legged buzzard.



The Japanese ruddy kingfisher's courtship display.



The Japanese ruddy kingfisher before a catch.



A yellow-breasted bunting takes a rest in a field.



This eastern oystercatcher is moving north.



A singing ruby throat.



A vociferous Japanese blue flycatcher.



A short-eared owl in a field.



My usual method of photography is to hide and wait in a "blind." This is a small, square tent that is sometimes called a "hide." In the field, however, I usually take photographs from a car. At these times, I use a telephoto lens and a pan head resting on the

car window. The car provides shelter and it gives me the ability to move wherever I desire. There is really no other method as convenient as this one. I recommend a 4WD vehicle for use on bad roads and on off-road terrain. My personal vehicle is a Land Cruiser.

There are also many lakes and swamps along the seashores of Hokkaido. These are very important resting places for many kinds of migratory birds.

The most famous of them is the "Wild Bird Society of Japan, Utonai Lake Sanctuary" in Tomakomai City. This was the first bird sanctuary established in Japan.

The Wild Bird Society of Japan began raising funds for the sanctuary in 1975.

Within five years the society had raised one billion yen. Contributors included members of the society, companies, and many ordinary citizens. The sanctuary was officially opened in 1981. Today, it owns all of Utonai Lake, together with forests and moors spreading over about 511 hectares.

A Nature Center was built on the lake-shore. This has become the heart of the activities for the preserve. It also serves as an observation post for visitors.

The preserve is manned by full-time rangers and voluntary assistants. Together, they carry out the task of escorting visitors, observing the birds, and caring for injured birds.



An eastern dunlin in a damp environment.



A greenshank takes a rest.



This Terek sandpiper searches for food.



A teal in the morning mist.



Take care! Japanese Scops owl.



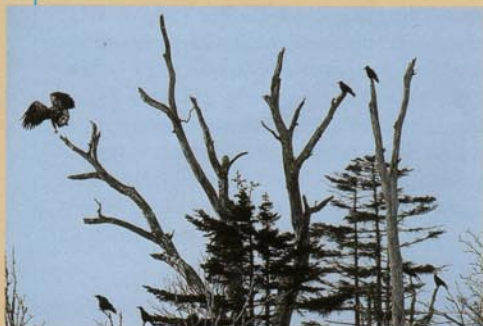


The presence of 230 different species of birds has been verified in the Utonai Lake area, a substantial percentage of the 350 bird types recorded to be living in Hokkaido.

The lake is an extremely important resting place for migratory birds, especially wild geese, ducks, and swans.

I am fortunate in that it only takes fifteen minutes to reach the sanctuary from my house. This is where I go whenever I have some free time. Naturally, I like to take photographs, but it is also enjoyable to talk with the rangers and the young volunteers.

I believe the Japanese people have been neglecting nature because we are blessed with too much of it. Hokkaido has become the last refuge for wildlife, yet even now it is being destroyed and is on the brink of disappearing. I am encouraged, however, by the look in the eyes of the young people who gather at the sanctuary, and when I see this, my faith in the power of human nature returns. **VA**



White-tailed sea eagles and sea crows.



An eastern waxwing takes a break.

A Von Schrenck's reed-warbler in a field.



A Blakiston's eagle owl.



Steller's sea-eagles float on an ice field.



Utonai Lake Sanctuary under thaw.



Whistling swans on Utonai Lake.

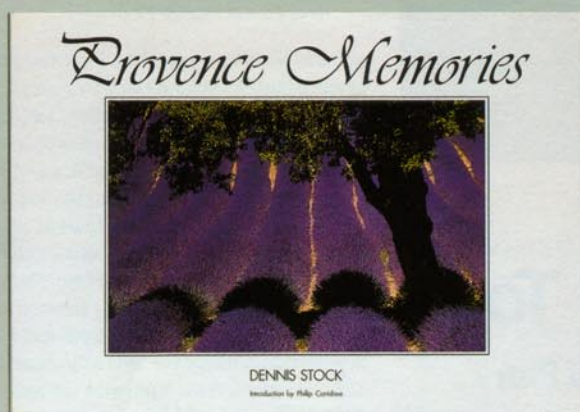


Whooper swans on Utonai Lake.

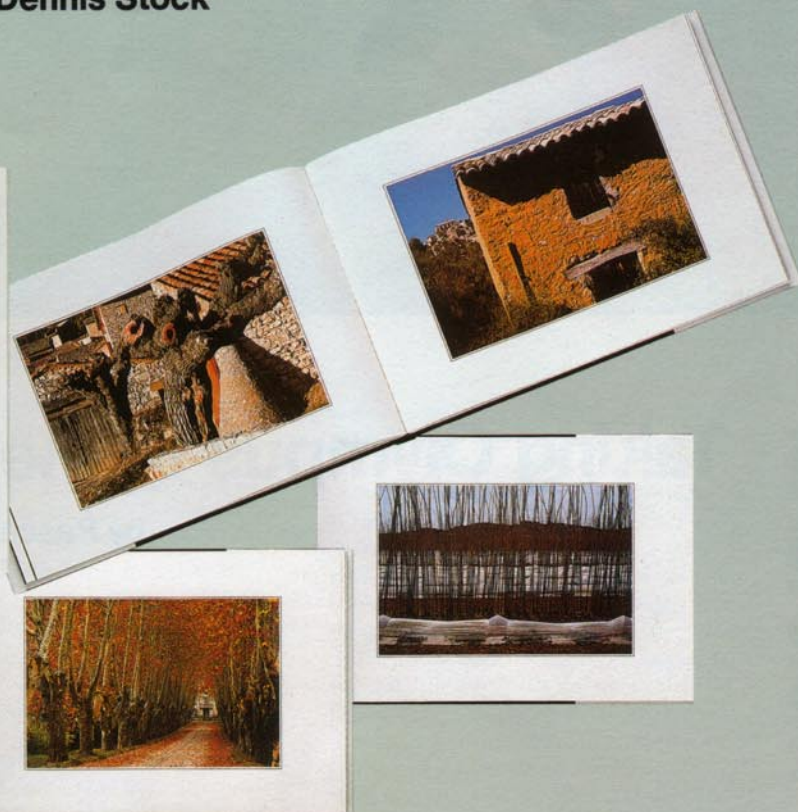


## PROVENCE MEMORIES

by Dennis Stock



Published by:  
New York Graphic Society Books  
Little, Brown and Company — Boston  
Printed in Italy



### Provence is an Image, Not a Place

Warm, sun-drenched stone farmhouses swamped in field after field of sunflowers, lavender and burnished hay. Olive groves cut by deep shadows and the mysterious breezes fathered by the mistral.

It's an image captured by van Gogh, Gauguin and Cézanne. Ancient hillside villages tumble into overflowing farmland. An image bursting with life, energy and inspiration. Generation after generation.

Dennis Stock, a famous photographer with his own, unique tradition of inspiration, has summoned his own collection of Provencal images. He has compiled a luxurious portfolio of 80 stunning photographs of this spellbinding area of Southern France.

Stock captures the everlasting image in his own unique way. The colors of Provence, the sensuousness and richness. The bronzes,

coppers and burnt yellows, the azure skies and verdant hillsides are all recalled from Stock's several years of residence in the area.

He introduces a newcomer to a magic world, filled with beautiful promises. He reminds those of us who have already been touched by Provence of our moments of romance with nature.

Stock has published many highly successful photojournalistic books including *Brother Sun* (1974), *Alaska* (1978) and *Flower Show* (1986).

He's also widely remembered for his own insights into Claude Monet's gardens and his personal foray into the world of flowers.

He gained his early fame by capturing images of James Dean, jazz musicians and the counterculture world of the 1960's. He currently lives in Woodstock, N.Y. But his latest collection is of a time and place in his life when he was seeing the scenes the famous artists saw and strove to capture

with their paints and brushes.

It may be the horses of the Camargue or a game of boules. It may be laundry displayed in the village of Sault or snow-covered cherry orchards. It may be anywhere, anytime — in Provence.

If you've never been, this will move you to visit.

And if you have, you'll return. **VA**





*Aiguille du Midi ("Southern Needle")  
(3,842 m). OM-3 ZUIKO 200mm F4*



*Aiguille Verte ("Green Needle")  
(4,122 m), Aiguille Sans Nom  
("Needle Without a Name") and the Dru.  
OM-3 ZUIKO 100mm F2.8*

# Taking Olympus to the Top

by Pascal Patry



## Pascal Patry

*Born in France on August 14, 1965.  
Passionately interested in photography from age twelve,  
he nevertheless pursued technical studies until 1982,  
at which time he started his studies to become a male nurse.  
In 1986 he decided to make photography his profession.  
He presently works at a publishing house as a photojournalist,  
and his photographs are widely published.*



*The Aiguilles de Chamonix.  
OM-3 ZUIKO 200mm F4*

*Mountain climber moving forward.  
OM-3 ZUIKO 100mm F2.8*

I was about twelve when I got the photography bug. At school the photography club became my chief preoccupation, and to the disappointment of my parents, who, nevertheless, continued to buy me film and paper from time to time, all other activities were clearly relegated to a lower level of priority. Now photography is my passion. The mountains have always fascinated me. Their scale, their eternal snows and their mysteries are a source of insatiable curiosity for me. I have always had a liking for adventure and risk and a deep need for calm and solitude away from civilization. That's what draws me and my camera to the high peaks.

My first real encounter with the high mountains was at Chamonix. I made the ascent to the top of the Aiguille du Midi ("Southern Needle") by cable car. As the cable car climbed higher, I had to swallow to clear my ears. And before I knew it, I was looking down at an enchanted world. The automobiles in the valley became ants as the Alpine giants unveiled themselves before me. I am not a person who is easily impressed, but when I arrived up there, I was dumbstruck by what my eye took in. I promised myself then and there that I would come back, not out of desire but as if drawn by a magnet.

Three years later. It was two o'clock in the morning, and the weather forecast was for clear skies for a day that promised to be thrilling. We folded up the tent at 2,300 meters and checked the contents of our rucksacks and all the equipment. After a breakfast of dried fruits, chocolate and condensed milk, we were on our way. There it was, the Needle, looking down on us from its elevation of 3,842 meters. This time the difference was that I had to make it to the top by my own arms and legs. I could see the cableway that I had used the first time. How inviting it looked! The first few steps were the hardest because it takes a while to get warmed up. During the climb we signaled each other by gestures of the head or hands





Southwest face of the Dent Du Geant ("Giant's Tooth") (4,017 m).  
OM-3 ZUIKO 50mm F1.8



Panoramic view from the Aiguille du Midi. OM-3 ZUIKO 35mm F2

from time to time that everything was going okay. It was hard to talk because it takes a big extra effort. I took out my altimeter and read 3,200 meters. We decided to take a short break that included some chocolate. Behind us we could see the traces that we had left in the snow and ice. The most difficult part lay ahead. We got started again, and the steepening slope made it necessary to install relays, for safety comes first under such conditions. My heart beat at its maximum pace — about 140 pulses a minute. I had to stop more and more frequently. And as for the effort; you would have to experience it yourself in order to understand. My thoughts were a confusion: "I must have been crazy to think of climbing up here." "I'm so, so tired . . . I'm not sure I'll make it all the way up." But my will got the upper hand: "Only 3,842 meters. That's nothing compared to the 8,800 meters of Mt. Everest. And I'm not the only one here; we're all in the same boat. And, after all, we decided to make this climb. 3,700 meters. Another 142 meters to the top." No sooner did I hear the ice break under my crampons than I fell.

The top of Aiguille du Midi (3,842 m).  
35mm F2



But we were lucky; my two companions had a secure footing, and the rope didn't break. During that fall of about ten meters, death stared me in the eye, and everything took on renewed importance. After that we hurried to reach the ridge of the Needle about a hundred meters above. When we got there, there was general euphoria; ringing laughter, yelling and hurrahs. It felt so good to be at the top of the ridge, to have attained our goal. We were filled with contentment, rewarded for our efforts and perseverance. We were happy.

If I had had any trouble with my camera at a time like that, it would have been a terrible injustice on the part of fortune. My OM-1 and OM-3 have never failed me. Since weight and bulkiness are enemies of a mountain climber, my equipment is small, relatively light and perfectly sturdy and reliable. I never go anywhere without it. One of the two bodies, accompanied by my 35mm F2, 100mm F2.8 and 200mm F4, represents an ideal unit for my excursions in the high mountains.

On the way back, about 500 meters from our destination, a vehicle ran into us from behind. That accident put two of us in neck braces for more than a week. Just think, a few hours earlier our lives hung on the rope joining us to one another. Death does not always raise its head where you might expect it to!

The eye transmits pictures of everyday life to the brain, and some of them cause a "click" deep inside of us. I often wish I had a camera instead of eyes so as to be able to catch such fugitive instants that are all too unforeseeable and fix them on film. It might, for instance, be the expression on the face of a child one catches unexpectedly "filching"

some candy from a cupboard where mommy hid it; or else the smile of a stranger one passes by on the street that expresses feelings we might have a hard time defining. Whenever I take a photograph, a part of me passes through it. Sometimes it's a sense of beauty, greatness, sadness, desire or even boredom. When I'm bored, I photograph anything (one day it was the wheels of my car!). There are as many different photographs as there are different states of mind; and just because of that as many different photographs as there are different photographers. Our minds are constantly stimulated by images throughout our lives, and the hardest thing is of all is to put the most representative ones on film. Intuition and love of things and nature make possible the anticipation that helps to catch unforgettable moments. **VA**

Iced electric power transmission tower.  
OM-2 S/P  
ZUIKO 28mm F2.8



Iced tree.  
OM-2 S/P  
ZUIKO 100mm F2.8





# Fumio Matsuda's "Advice on Anything and Everything" Part (5)

by Fumio Matsuda

## Handling Strong White or Vividly Colored Front Screens

One of the professional techniques for arranging a photographic image is to set up the image so that the viewer's eye will be unconsciously drawn into the setting.

You could say that this is in effect the



The neutral, half-tone coloring of the front screen is an effective use of the technique of arranging the three screens. The eye is naturally drawn to the subject of the far screen, the white windmill. (100mm, iris at f4 + 2 exposure compensation Auto, ISO 64, Color Reversal)



This case shows a photograph in which the front screen is the subject. This is caused by the qualities of the shape and color of the windmill. This is a nice arrangement which highlights the front screen by having the small windmill placed in the far screen. (18mm, iris at f8 + 1/2 exposure compensation Auto, ISO 25, Color Reversal)

creation of a three-dimensional feeling in a flat photograph. Here, I will talk about the problem where the front image, instead of leading the viewer's eye deep inside the setting, actually stops the eye and prevents it from penetrating the image.

For the purpose of this discussion I use the term "Front Screen" for the foreground of a photograph in which the middle and distant images are the main elements. If the front screen is too strong, the eye will stop and will not be led to the middle and distant images which are the main elements.

If the front screen is a strong white or vivid color, you will destroy the effectiveness of the images in the middle and distant grounds. Using an out of focus fade does nothing to avoid this problem.

These two photographs are good examples of the front screen frame technique.

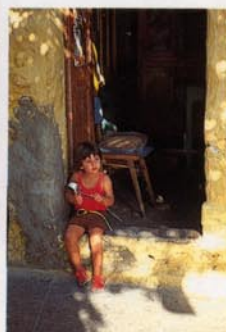
This photograph leads the viewer's eyes three-dimensionally from the black branch to the white or color. (28mm, iris at f5.6 + 1/2 exposure compensation Auto, ISO 64, Color Reversal)



Here the photograph actually measures the gradation from the front screen of green pastels to the sharp, vivid colors. (100mm, iris at f2, Auto, ISO 64, Color Reversal)



This example shows the great effect a white surround can give to your photographs. The white space really makes the person in the shade stand out.



However, here the white surrounding the sun disturbs the viewer's eyes and takes them away from the child, the subject of the photograph. In this case, it is better to cut off the white as much as possible. (Both of these photos: 28mm, iris at f4 + 2 exposure compensation Auto, ISO 64, Color Reversal)





## The Olympus XA Story (4)

by Kunio Yanagida  
(Translated by John S. Brodie)

### The Lens Gang Buckles Down

The image of the two compact camera clay models Maitani had shown him was burnt vividly into Hayamizu's retina.

Although the difference in thickness the bulge protruded was a mere five centimeters, the thicker model looked hopelessly clumsy ... and quite unworkable. Yet the just a tiny bit thinner model looked smooth and trim, and undeniably stylish.

There's a saying, "If Cleopatra's nose had been a little bit longer, history wouldn't have been the same." And the camera Maitani was trying to make was, it seemed, another example of the same difference. Just a tiny variation in the size of the protuberance spelled the difference between success and failure.

"There's no point in making something that just won't work. There's simply got to be a way to make a lens that will fit that smart, stylish design."

Hayamizu continued to anguish over the problem, but for a long time bright ideas remained elusive. Still, he couldn't help admiring the way Maitani had maneuvered him into going along. Showing him two models and then asking him to choose between them was a brilliant ruse. As an engineer, it was perfectly obvious which design was superior. And when he had made the inevitable choice, it was already too late to back out when Maitani insisted on his support. He no longer had the option of



simply saying "It can't be done."

"It's easy to design something. But it's a whole lot harder to design something that will sell," was one of Maitani's favorite sayings. "How very true," Hayamizu couldn't help feeling.

In order to make "something that will sell," he had to devise a lens that could somehow be squeezed into a body only four centimeters thick.

Hayamizu had a couple of people under him in the new lens design team, Kenichi Harada and Toshihiro Imai. Harada had joined the company after graduating from the Mathematics Faculty of the Department of Science and Engineering of Tokyo's Waseda University in 1963. Since then he had built up a wealth of experience in designing and developing camera lenses, industrial lenses, microscopes, etc. and had gained recognition as a bulwark of the department. He was now the leader of the sub-group assigned responsibility for interchangeable lenses.

Imai had graduated from the Applied Physics Faculty of Osaka University's Engineering Department and joined the company in 1971, so he was now an employee of six years standing.

Hayamizu pushed ahead with research on the configuration of the new lens through constant discussions with Harada and Imai. As soon as they felt they had developed a promising concept, Imai would get to work on the computer and go ahead with elaborating a concrete design. Harada's task was to be ready with advice and guidance. Although Hayamizu was in overall control of the Lens Development Group, he was not the kind of man to be content with carrying out merely administrative duties. He was just as keen on working out new concepts and coming up with exciting ideas as the most enthusiastic member of his team. This engineer's temperament made him a fine match for Maitani, his opposite player in the Camera Development Group.

In designing a lens it is simplistic to imagine that you can go about reducing the overall length by systematically shortening distances between the front element and the next, and so on all the way back to the film plane. In reality, lenses are beset by the annoying and extremely complex problem of aberration. Aberration arises from the fact that different colors — or different wavelengths of light — have differing refractive indices.

Consequently, one of the most essential points in designing a lens is to work out the most satisfactory way to compensate for aberration and to assure the sharpest possible image, and to decide on the ideal lens configuration for the job.

The first thing Imai tried out in computer simulation was what is known as a Tessar type configuration with a 35mm wide-angle lens front element. This is the lens type most commonly adopted in orthodox camera designs.

The trouble is, however much they struggled with it, the absolute maximum they could shorten a Tessar type lens was nothing more than in the order of one millimeter. When they tried to push things beyond that, the only result was that they could no longer compensate satisfactorily for aberrations, and the image at the periphery of the lens became unacceptably blurred.

Yet their task was to shorten the lens by at least four millimeters.

Two months passed, then three.

From time to time Maitani would press Hayamizu, "Still no news?!" And Hayamizu could only answer, "I need just a little more time."

## Turning Everything Upside Down

Hayamizu felt driven into a corner. He racked his brains in desperation.

"When it comes to designing a compact camera lens, we automatically start off thinking of using some kind of ordinary standard lens configuration as the basis. And that's where we keep hitting our heads against a wall. Maybe we should just forget about conventional types of lenses and take a new look at the problem from a completely different angle..."

At last Hayamizu was on the right track. It was toward the beginning of the summer of 1977 that he managed to grasp the decisive hint that would make a solution possible.

In a flash of inspiration he thought, "Perhaps we should try a telephoto lens configuration."

Generally speaking, telephoto lenses adopt a convex element in the front of the lens, and a concave element positioned in the back of the lens near the film plane. This arrangement makes it possible to reduce the overall length of the lens — an important consideration for long telephotos. Such a lens configuration is known as a "Telephoto Type" or a "Reverse Retrofocus Type."

In contrast, the basic configuration of a regular "Retrofocus Type" lens involves the use of a concave lens element in the front and a convex lens in the rear. This configuration is widely adopted for wide-angle lenses for SLR (Single Lens Reflex) cameras, because it has the effect of actually increasing the overall length of lenses with a

short focal length. These lenses would otherwise be too short to leave room for the mechanical action of the quick return mirror located in front of the SLR film plane.

The meaning of the "Reverse Retrofocus Type" used in telephoto lenses is simply that this "Retrofocus Type" configuration is reversed. In a telephoto lens, the amount the total length of the lens tube is shorter than the focal length of the main front lens element, is a critical indication of the lens designer's success in achieving maximum compactness and ease of handling.

The principle Hayamizu had just grasped was this method of making telephoto lenses more compact. "Perhaps," he thought, "we could apply the same kind of thinking to a wide-angle lens." Hayamizu hastily arranged a meeting with Harada and Imai to broach his idea to them.

"I can't help thinking back to the terrible time we had trying to develop the OM-1," he said. "We had to drastically cut down the sizes of every kind of interchangeable lens then, to match the extra compactness of the OM-1 body. Long and unwieldy telephoto lenses were a case in point. By the time we were finished, we had managed to squeeze a 100mm focal length lens into a lens tube only 60mm from front to back, and a 200mm lens into a tube just 127mm long. If we could achieve such dramatic reductions then, I have a feeling it might be very useful to try the same kind of thinking with a wide-angle lens."

But however much you make a telephoto lens more compact, it is still, in essence, long and big. Since the project in question was creating a new compact "pocket" camera, in the normal course of events nobody would even think of making the association with telephoto lenses. And yet, it is just this kind of zany, totally irrelevant thinking that often breaks down seemingly impregnable technical barriers to open up new realms of creativity. This is "turning everything upside down," with a vengeance!

Hayamizu's brilliant idea might seem to have been merely lucky intuition. But how much is human intuition really a matter of luck? Less, surely, than it is a precious acquisition, born of the judicious mixture of years of accumulated knowledge, experience and wisdom.

In response to Hayamizu's suggestion Imai replied, "Funnily enough, I have just been thinking along the same lines: if a retrofocus type is used when we want to lengthen the focusing distance, what would happen if we tried a reverse retrofocus configuration?"

Hayamizu continued, "The only problem is, how can we compensate properly for the out-of-focus effect at the image periphery if we make a reverse retrofocus type wide-



angle lens? There's no way to know, because nobody in the whole world has ever tried designing a lens like this before. Well anyway, let's give it a try."

He told Imai to go ahead with working out the design calculations.

Once again, the relentless battle of numbers with the computer started up in earnest. The kind of person who ends up as a lens designer must be endowed with an unusual mix of perceptivity and perspicacity to juggle a host of variables such as lens type, configuration and performance specifications without becoming confused and losing sight of the final objective, plus a generous helping of stamina and stubbornness to go through the constant process of trial and error involved. Imai kept himself busy compiling data for a variety of target values for radius of curvature, focal length, spacing, aberration compensation, etc., etc., and patiently feeding them into the computer one set after another, in his search for a viable reverse retrofocus type wide-angle lens, the first in the world.

By the time he at last found a configuration that looked as though it might work, it was already high summer.

He showed the data to Harada, who said, "That looks OK," and then rushed off to report to Hayamizu.

The configuration of the lens was six elements in five groups, and the diameter of the rearmost element was twice as large as the front element, giving it an extremely weird and unbalanced appearance.

However, the distance from the curved surface of the front element to the film plane had been shortened amazingly, to a mere 33.6 millimeters. A lens like this would fit easily into a camera body only four centimeters thick.

The remaining problem was to provide for focusing without having to extend the lens outwards. This difficulty was solved by adopting an inner focusing mechanism in which the front element remained fixed, and focusing was performed by moving only the inner groups of lens elements.

After all the desired criteria have been achieved in computer simulation, the next step is to call on the lens grinding specialist to make up a prototype, then use it to take actual pictures and analyze them to make sure resolution and other factors do in fact conform with the calculated values.

But making up a prototype lens takes about a month and a half. If the simulation data were satisfactory, that meant the lens was basically alright. So Hayamizu decided not to wait for the trial results. Instead he went straight to Maitani and jubilantly reported: "We've done it!"

"The rear element's terribly big, but I suppose you can handle that?" he went on.

Maitani was overjoyed. "The rear element is hidden away in the body, so we can look after that some way or other. The camera design is going forward pretty well, too. Now I know we don't have to change the body design, that's an immense relief."

## In the Spirit of the Electronic Age

In Maitani's team, a group centered around Kunio Shimoyama, Chief of the First Camera Section and Maitani's right-hand man since the days of the OM Series; Muneaki Yoshida; Hideki Nakamura, Chief of the Second Camera Section; and Toyotaka Yamada got to grips with developing and planning the body and mechanical parts. Shimoyama had graduated from the Physics Faculty of the Science Department of Osaka University and joined the company in 1958. Yoshida and Yamada had both joined Olympus in the same year, 1964. Yoshida was a graduate of the Precision Machinery Faculty of the Engineering Department of Ibaraki University, and Yamada of the Machinery Faculty of the Science and Engineering Department of Waseda University.

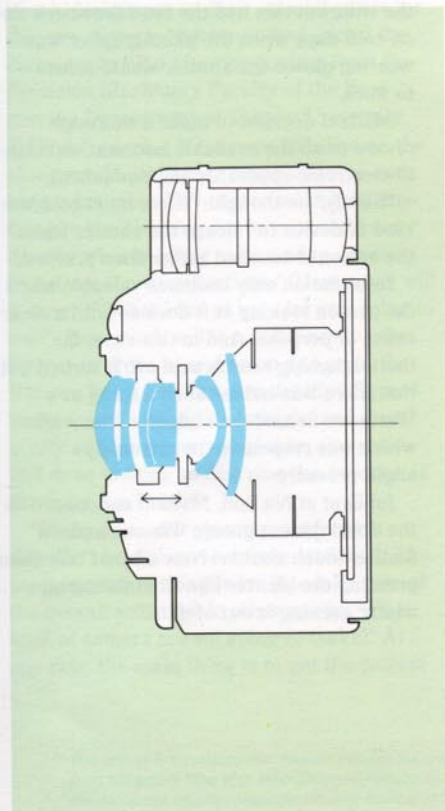
All in all the technical experts of the Camera Development Group shared between them university specializations in a variety of subjects embracing machinery, electricity, physics and more besides. In fact, several of the younger members had even completed post-graduate Master's degree courses. But Maitani was not the kind of person to put too much emphasis on academic accomplishments. He was far more interested in the ability to think creatively, and the tenacity to carry through to the bitter end.

Especially in the case of the new camera they were working on now, it was not just a matter of reducing the size or changing the design, but of rethinking and redeveloping everything up to and including the camera functions themselves. Maitani didn't want to be limited just to improving on existing cameras: as far as possible he wanted everything to be entirely original. In consequence the demands he put on the development group were unusually severe.

"If we only make minor improvements, whatever we do will be instantly copied by rival camera makers. We must make a camera so revolutionary that other companies will need three or even four years to catch up to us," Maitani would say impartially both to his superiors in the company and the people under him.

The central role in revolutionizing the various camera functions was to be played by electronics.

To make a full-frame 35mm camera small enough to be called an ultra-compact, and at the same time include the maximum possible range of functions, there was simply no alternative to relying on electronic equipment. But although the switch to camera electronics was a growing trend, Maitani hated to copy the ideas of other companies



Lens construction of XA camera



even in this field.

The electronic shutter is one prime example.

The shutter speed is determined by the interval between the opening and closing of the shutter curtains, and this is electronically calculated and controlled with great precision. However, opening and closing the shutter constitutes two separate operations and requires two separate mechanisms. The electrical function of each of these mechanisms calls for separate, individual magnets.

Since making the camera ultra compact was a prime design objective, it followed that the magnets utilized would have to be exceedingly small, while still being amply powerful for the job. A further essential for magnets used in a camera is that they must be able to maintain the same performance even at temperatures of about ten degrees (Centigrade) below freezing. And it goes without saying that they must also meet strict reliability and durability specifications.

The man in charge of developing the shutter was the young Katsuhiko Tsunefuji, a graduate of the Precision Machinery Faculty of Hiroshima University's Department of Engineering.

The automatic exposure shutter speed range Maitani had in mind extended from 1/500 sec. to an ultra-long ten seconds, in other words pretty much the kind of performance you would expect from an SLR camera in the upper quality bracket. This called for a mechanism of unusually high precision.

After researching the question extensively, Tsunefuji came to the conclusion that for the shutter curtain closing mechanism it would be possible to use the same magnet as in the OM-2. As far as opening the shutter was concerned, however, the only possible way to meet the design requirements was by developing a special magnet entirely anew.

All the magnets used in previous products had to be rejected because they were just too big.

When he heard this Maitani immediately said, "OK. In that case I'll join the search, too!" And with the old gleam of battle in his eye he set off to find the perfect new magnet.

Specialist magnet manufacturers were consulted one after another. Finally one maker mentioned that there was a type of magnetic rare earth material that might perhaps fill the bill. It turned out that a magnet of these rare earths could indeed be made exceedingly small, yet still be able to meet the high strength and durability requirements.

It was this discovery that made fitting a high precision automatic exposure control capability in an extremely small mechanism



possible.

The shutter release button was also developed from a totally new concept.

One of the most common causes of spoiled photos is the camera shake set up when you press the shutter button. That's why the early Japanese photographers would say, "Release the shutter as softly as frost settling on a winter's evening."

But the fact of the matter is that inexperienced photographers inevitably use too much force when they press the shutter. And the effects show up especially badly with compact cameras because they are so light.

In view of this, Maitani thought it was only right that a compact camera shutter button should provide a light touch in keeping with the camera's minimal size and weight. He thought it only right that they should create a new shutter button entirely different from the clunky types suitable for relatively heavy SLRs.

Minor improvements such as making the button smaller or the action a bit smoother were not sufficient.

Maitani's first idea was, "What we need is something like an elevator button, that responds immediately to the gentlest touch." But he soon realized this was no good. A button that was sensitive to body heat like an elevator button would be a big liability in hot places, because the ambient temperature could easily set the shutter off all by itself.

Casting his mind back to tragedies in burning skyscrapers when the heat sensitive elevator buttons had been activated by the heat of the flames swirling around them, with the result that the horrified elevator

passengers had actually been summoned to the floor where the fire burned fiercest, Maitani reflected that seemingly convenient mechanisms can be marred by unexpectedly inconvenient pitfalls.

Another idea he considered was a button activated by electrical conduction through the skin, but this had the fatal drawback that on cold days when the photographer was wearing gloves the shutter would refuse to work.

Maitani decided to make a thorough review of all the available information related to electronic apparatus and equipment.

"Surely," he thought, "there must be some kind of device to release the shutter when the button is touched rather than pressed."

Information only becomes valuable when the person looking at it does so with a clear sense of purpose. And in this case, the thoroughgoing search paid off. It turned out that there was indeed such a thing as a "Pressure Sensitive Conductor Element" which was responsive to extremely slight pressure.

Jubilant at his find, Maitani announced to the development group, "We can make a feather-touch shutter! Now all that talk about pressing the shutter like frost falling on a winter evening is out of date!"



## Specifications for the New Product

In the fall of 1977, Konishiroku Photo Ind. Co., Ltd. stunned the market with the new Konica C35AF, the world's first mass-produced, medium priced autofocus camera.

It was the ultimate in easy operation, assuring properly focused and exposed pictures at the touch of the shutter button, and in terms of market success it quickly proved a worthy successor to the best-selling Konica C35EF. Technically, too, it was a remarkable accomplishment.

In the camera industry the competition to develop new products was building up to white heat. And within the company, especially on the upper management side, the impatience of those demanding a new Olympus camera was becoming hard to restrain.

For the end of this year a planning conference was scheduled to decide on specifications and other particulars of the various new company products under development. The conference was to be attended by all relevant department heads and above of both the development and sales divisions. Agreement on the specifications at this time meant company approval of the new product guidelines.

Maitani told Second Camera Section Chief Hideki Nakamura to draw up a blueprint for the new camera. Nakamura had joined the company in 1959 after graduating from the Precision Machinery Faculty of the Engineering Department of Tohoku University.

While ordering Nakamura to make up the blueprint, Maitani once again let loose with his pet grumble: "Whenever we submit anything to the planning conference, we know exactly what is going to be said in advance. 'What are the specifications?' 'How much will it weigh?' 'What kind of lens are you going to use?' 'How much will it cost?' 'Show us the figures to prove it,' and so on and so forth. But you know, you can give detailed figures about a man's height and weight and visual acuity and whatever you please, and you've still done nothing to describe the essence of the man. Am I right?"

"In my opinion a planning conference shouldn't be a place to debate statistics. The most important thing is for it to take care of the overall situation, in other words: 'What kind of camera are we going to make?' At any rate, the main thing is to get the project

authorized, so just set out the main details if you would."

There is an interesting anecdote about Maitani from the time of the OM-1 program:

When Maitani submitted a short statement of intent, "We aim to create a world class system camera," to the planning conference, sure enough the response was "Give us detailed specifications." Maitani went into a lengthy explanation of the goals of the OM-1 but this still wasn't sufficient, so he reluctantly submitted a memo with an itemized list of camera data. When everyone had signified their agreement and the discussion was drawing to a close Maitani spoke up. "As a matter of fact, the data you have been examining is actually a page I copied verbatim from the specifications of a popular SLR model now on the market."

Obviously, data is important. But when you become mesmerized by data to the exclusion of everything else, you are in danger of failing to see the wood for the trees. Maitani's anecdote makes the point scathingly.

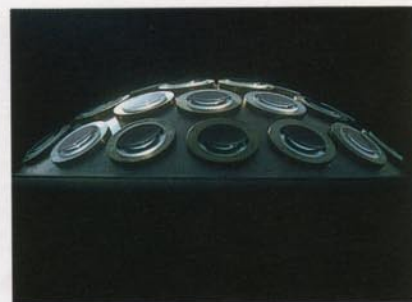
Nakamura was fully aware of the situation, so in drawing up the new product specifications, this time, too, he limited himself to a description of the basic design for the camera.

The gist of what he wrote was "An auto exposure camera that gives scope to the photographer's creativity." In other words, an auto camera, but something more than an automation.

"Giving scope to the photographer's creativity" was a straightforward way of expressing Maitani's explanation, "An auto exposure camera is undeniably convenient to use, and it does take good pictures. But it can't take creative pictures where the photographer has some say in how the shot will turn out. Our new camera can. That's the difference."

Thus, although the new camera featured a compact format, in virtually every respect except for not providing interchangeable lens capability it aimed to offer the same level of performance as an SLR.

In concrete terms, the idea was to create a camera with remarkably sophisticated performance, featuring an aperture-preferred auto exposure mechanism that allowed such creative effects as blurring out the background to give greater emphasis to the main subject, but which could also be used more or less as a shutter speed-preferred system when the occasion demanded, for example in arresting the motion of a fast moving subject while streaking the background to emphasize



the feeling of aliveness. This time at the planning conference, although there was a lively exchange of opinions, the new camera design proposal was approved without the kind of frustrating and time-wasting misunderstandings that dogged the OM-1 project. As a result, Maitani's brainchild finally received authorization as an official design project of Olympus Optical Company Limited.

All the same, the new camera design submitted to, and approved by, the planning conference continued to stir up ripples among the company management. The reason was that, although they had been shown little more than a sketch, or "artist's impression" of the design, people seeing it for the first time found it just too original and unconventional to accept easily.


Comments included:

"This thing doesn't even look like a camera!"

"It's certainly unique, but it's going to be a headache getting it across to the public. We'll have our work cut out establishing a strong product image people can relate to."

"It's going to be very difficult to get an accurate estimate of the market!"

Truth to tell, the sales division side wasn't simply being narrow-minded and obstructive. They had reason to be perplexed. When a company brings out a new product fairly similar to those already on the market, the sales strategy can be centered on price competition. In some ways this makes things a lot easier to handle for the company's business side. They can also make a good estimate of the size of the market. But with a new product quite unlike anything that has gone before it things are not that simple, and the sales division has to proceed with great prudence and caution in elaborating its publicity and sales policy.

Be that as it may, these problems were still in the future. The main thing was that Maitani now had the green light to go ahead full steam. 

*This article is translated into English through the courtesy of the author, Kunio Yanagida, from his article "The Man Who Changed History by Compact Design" which appeared in the Japanese weekly magazine Shukan Gendai in 11 installments from February 1980. This article is based on facts learned during Mr. Yanagida's wide-ranging information-*

*gathering efforts in Japan's camera industry, including Olympus Optical Co.'s Development Division. Mr. Yanagida is well known among the Japanese as a news commentator of NHK (Japan Broadcasting Corp.) and as a writer.*





## OM System Compatibility in a New Black-Clad Titanium Body OM-4Ti BLACK

The single-lens reflex camera: one of a photographer's most important tools. A relatively simple device that transforms the transient into the timeless, showing us what was . . . and what might have been.

Today, the trend in SLR cameras is toward automation and ease-of-use.

While this is an admirable trend in itself, serious photographers still need to be able to control focusing and exposure parameters to achieve their creative goals. At Olympus, we've always worked to provide such photographers with the tools they need.

In 1972, for example, we ushered in a new era in photographic creativity when we introduced the compact OM-1. In 1983, we offered photographers the world's first Multi Spot Metering system on the OM-4. And in 1986, we introduced the lightweight durability and professional performance of the titanium OM-4Ti.

Through succeeding generations of OM series cameras, one thing has remained constant: our commitment to preserve the highest standards of photographic excellence.

Now, these standards have been reaffirmed with the introduction of the OM-4Ti BLACK — a new black-clad titanium flagship for the Olympus OM System fleet.

With its ultra-precise spot metering system and rugged, yet lightweight, titanium body, the OM-4Ti BLACK features the finest in OM System technology. And, of course, it's supported by an entire line of OM System lenses and accessories. Because at Olympus, we want to provide you with everything you need to make your photography a success.





The announcement of the new Olympus O-product took place at a major fashion show in Japan.



## O-product A Limited Edition Camera for Test Marketing



In a trial, Olympus has marketed a limited edition camera. The Olympus O-product is a camera that appeals on visual terms. At a time when classic design is often neglected for the sake of pure functionality, the strikingly classic lines of the aluminum-bodied camera restore some of the grace so readily seen in hardware from the 1920s and '30s.

The O-product is being produced as a limited edition, and it is aimed to appeal not just to photography enthusiasts but also to individuals who appreciate good design in its own right.

The limited edition of 20,000 will be marketed through selected channels in Japan, Europe and the United States.

In addition to its striking good looks, the Olympus O-product incorporates the very latest in camera technology, to ensure quality photography at the touch of a button. A built-in motor drive, auto-loading, auto-exposure, autofocus and auto-flash with the stylish detachable flashgun allow simplicity of operation for even novice photographers.

The Olympus O-product is a camera with unique aesthetic qualities. It is a camera that produces quality pictures quickly and efficiently. Above all, it is a camera that expresses style and individuality — a factor all too easily forgotten in today's mass production world.

The O-product's name is one indication of its originality. Along with signifying Olympus, the O stands for the way that the engineers started from zero, refusing to acknowledge the usual preconceptions. The result is an instrument that not only takes photographs, but might well be the subject for them. **VA**



# INTERNATIONAL COLOR SLIDE PHOTO CONTEST

The best shots for 1988 by amateurs and professionals from around the world.

*The Winners*

The Third Annual Olympus VisionAge International Color Slide Photo Contest selected 125 works judging in Japan on December 12th and then the final judging took place in New York on December 27th.

This time there were 13,152 entries from 59 countries around the world. This year, especially, there were many new entrants from various countries. East, West, North and South. Beyond the obstacles of politics and economics.

On the other hand, 209 entries were received from members of Olympus camera clubs in Japan. It became a contest of variety taken up by camera fans of the world.

Olympus' wish is to offer a stage for photography from around the world. Professionals or amateurs, under equal conditions, have their work judged only on the freedom of their themes and their unique ideas.

Also, people's expectations of this International Color Slide Photo Contest increase every year. It has become an exchange place of photographic culture and a common, international language in this informationalized society.

We would like to introduce some of the award-winning works. The Grand Prix winner, the Awards of Excellence winners and other prizewinners.

Submissions for the Fourth Annual International Photo Contest '89 will be accepted from spring this year.

We look forward to your cooperation.

# The Olympus VisionAge '88 International Color Slide Photo Contest

## Grand Prix



Olympic Choir

Al Borman (U.S.A.)





### Special Recognition Award

### Special Recognition Award



Fisherman Sathaporn Soontornvitthaya (Thailand)



Simpatia <Sympathy> Oscar Enebral Erranz (Spain)

### Special Recognition Award



To the Win Waranun Chutchawantipakorn (Thailand)

### WWF Special Award



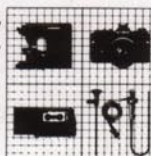
View at Treetop Li Pak Fun (Hong Kong)





Twin Lenses for Slim-Line Tele-Wide Performance

Photographic,  
Medical,  
Microscopic,  
Industrial &  
Business Equipment



**OLYMPUS**  
OLYMPUS OPTICAL CO., LTD. Tokyo, New York, Hamburg, London