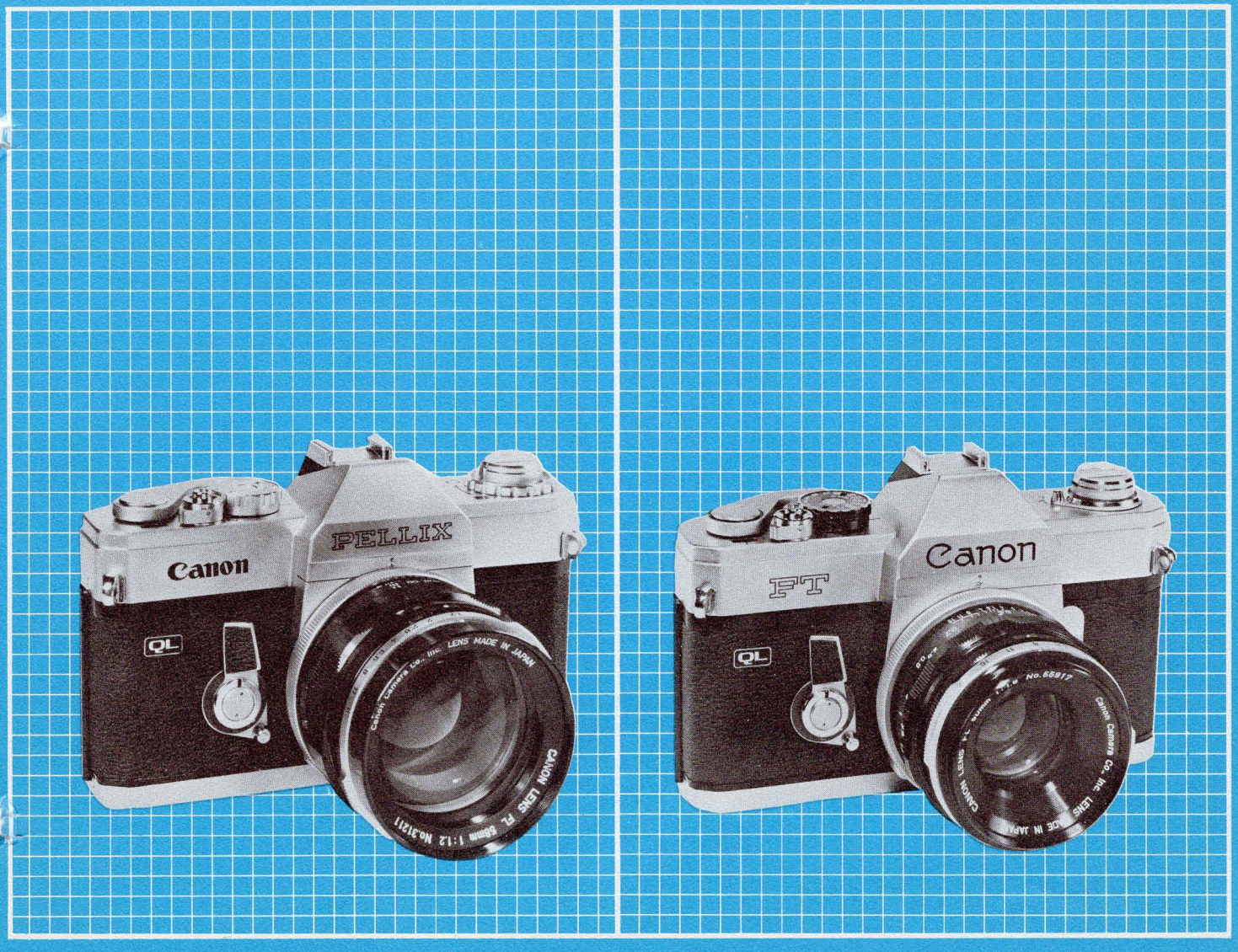
MODERN PHOTOGRAPHY

tests the new

Canon

PELLIX QL and FT QL



modern tests

newest cameras, lenses & important accessories

CANON PELLIX OR FT: WITH, WITHOUT PELLICLE

MANUFACTURER'S SPECIFICATIONS: Canon Pellix QL 35mm eye-level single-lens reflex camera. LENS: Interchangeable breech-lock 50mm f/1.8 Canon FL, 50mm Canon f/1.4 FL, 58mm Canon f/1.2 FL with stops to f/22, focus to 24 in. SHUTTER: Titanium foil focal plane with speeds from 1 to 1/1000 sec. plus B, FPX sync. VIEWING: Non-interchangeable eye-level prism with central grid, plus fine focusing rectangular collar and full focusing Fresnel screen. OTHER FEATURES: Non-moving semi-transparent pellicle mirror, mercury battery-powered CdS exposure meter behind lens coupled to shutter speeds and aperture controls measures central ⅓ picture area at shooting aperture, quick return aperture, depth of field preview lever, quick loading film mechanism. PRICE: $299.95 with f/1.8 lens, $349.95 with f/1.4 lens, $384.95 with f/1.2 lens.

Canon FT QL 35mm eye-level single-lens reflex camera. LENS: Interchangeable 50mm f/1.8 Canon FL, 50mm f/1.4 Canon FL, 58mm f/1.2 Canon FL with stops to f/22, focus to 24 in. SHUTTER: Cloth focal plane with speeds from 1 to 1/1000 sec. plus B, FPX sync. VIEWing: Non-interchangeable eye-level prism with central grid plus fine focusing rectangular collar and full focusing Fresnel screen. OTHER FEATURES: Mercury battery-powered CdS exposure meter behind lens coupled to shutter speeds and aperture controls measures ⅓ picture area at shooting aperture, instant return mirror, quick return aperture, depth-of-field preview lever, mirror lock-up lever, quick-loading film mechanism. PRICE: $239.95 with f/1.8 lens, $289.95 with f/1.4 lens, $324.95 with f/1.2 lens.

Whether you're with it or agin it, undoubtedly one of the biggest sensations in SLR camera designs within the past 20 years is the stationary mirror Canon Pellix. While camera technicians and knowledgeable photographers argued possible SLR faults: flipping mirrors, vibrations, loss of viewing at the instant of picture taking, Canon went and did something about it. They made a single-lens reflex with a stationary mirror that did not move. Ergo: no blink, no added vibration.

But Canon didn't introduce the pellicle mirror and coast on other more standard features. A radically different flip-up meter in front of the focal plane measures the central ⅓ picture area (approximately). All other behind-the-lens SLR's to that time measured the whole picture area. The pro-anti Pellix battle was all but overlooked in the mad scramble to praise or damm the new metering system.

Even so, the pellicle mirror wouldn't have settled any storms. It could only create more waves, pro and con. Since the wafer thin stationary pellicle mirror in the Pellix split the light from the subject between film and viewfinder, there had to be a light loss in both areas. The lens delivers approximately ⅓ of an f/stop less light to the film and the finder is about ⅓ less brilliant than standard mirror SLR finders even though special care and coatings had been applied to the Pellix prism to get maximum brilliance for viewing. Undoubtedly the Pellix finder is less bright than those in other Canon SLR's with the same lens and a standard rapid return mirror. Moreover, the Pellix's out of focus image areas in the finder seemed to have a mushy, flary character with a loss of contrast. If this was visible in the finder, what was happening on the film? Was it logical that something in the nature of sharpness as well as aperture speed must be lost when light from a lens entered and passed through a pellicle on its way to the film?

Most sensational development in past 20 years

Superbly finished compact SLR body

Superior lens mounting mechanism

Exclusive metering measures 1/3 picture area

All new quick loading feature easy to use

Increased ASA range-25 to 2000

Reprint from August Edition of Modern Photography.

Editorial Comments made by Bell & Howell.

While MODERN's technicians wrestled with these mighty problems, while its readers grew more impatient, Canon introduced a newer version of the Pellix, the QL, with a quick loading system and stop-down aperture lock. But even more significant was the announcement of the new Canon FT, almost the spitting image of the Pellix but $60 less expensive and—with a rapid return mirror instead of a fixed pellicle. With both cameras at hand for testing we were in a far better position to analyze the Pellix with stationary mirror and compare results with it directly against a camera having a standard instant return mirror. The fact that the Canon FT also has a semi-spot meter reading system that measures ⅓ the picture area but uses a different metering device added another possible interesting comparison.

The Canon FT and Pellix have perhaps more in common than they have differences. Both share superbly finished, rather compact SLR body originally introduced in the Canon FX (still in the line, by the way, at a tempting $189.95 with f/1.8 lens. See Modern Tests, June 1965 issue for the FX report). The traditional Canon large diameter (1⅞ in.) breech-lock lens mount (you connect lens and body, then twist an outer knurled ring about 45° to lock them together) is used. In MODERN's opinion, the breech lock is a superior lens mounting mechanism. It can never come loose. If and when there is some slight wear or loosening of the mount lip, the turning outer ring takes up the slack and keeps it as tight as ever. It's a design somewhat similar to that used on the breeches of giant cannons—for the same reason.

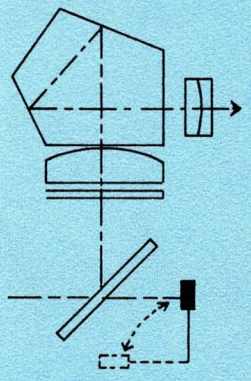
The handy swing back of previous Canon SLR's has been made handier with the inclusion of the QL loading system used on the Canonet rangefinder cameras. Just lay the tip on the film leader across the film plane, bring down the QL mechanism to hold it in place and shut the back. With judicious care, you should be able to squeeze in one more frame of film than with a standard loading camera, provided you start at the last frame counter's dot before frame 1. The addition of the QL incidentally has caused only a tiny rounding of the camera back which you can barely notice.

The Pellix and FT are not only the same size, they are virtually the same weight. The FT weighs 1 lb. 10 oz., the Pellix ½ oz. more. Both cameras have the same ratcheted 174° rapid wind lever, clearly marked top shutter speed dial (black on chrome with the Pellix, white numerals on black for the FT) plus spring loaded outer rim which governs the ASA settings of the built-in meters (ASA 25 to 2000). While the focal plane shutter mechanisms of both cameras seem identical, the Pellix is made of titanium foil and the FT of cloth. Apparently the designers feel that the absence of a standard mirror in the Pellix might increase the hazard of direct sun burning a hole in the shutter. They have thus adopted the same metal foil shutter material used in the rangefinder Canon cameras. The instant return mirror on the FT, of course, protects its cloth shutter from any such possibilities. Shutter noise (about average) of both cameras is virtually identical despite the fact that the FT has a cloth shutter and a rapid return mirror and the Pellix has a metal shutter and a fixed mirror.

We were surprised to notice that locking the FT's mirror in the up position (used to insert the deep-set 19mm f/3.5 lens or to minimize vibration for scientific work) made virtually no alteration in shutter noise.

There is one other small difference of controls between the two cameras, caused by mirror differences. The Pellix's eyepiece can be closed off by turning the collar around the rewind lever, while there is no such control on the FT. This, however, is a logical difference since there is some possibility of direct light entering the Pellix's eyepiece when the camera is mounted on a tripod. Such light could affect the picture, however. In normal conditions, with the Pellix held at eye level, we found there was less chance of meter error occurring because of back light than with most thru-lens meter cameras.

The FT allows virtually no extraneous light from the finder to affect the meter, according to our tests and with the rapid return mirror as protection, no light could possibly strike the film from the eyepiece during exposure. Therefore the FT needs no eyepiece light shield.



Canon Pellix QL

The major differences between the two cameras become evident when you hold them up to eye level. Although both show the same life sized view with the 50mm lens, the Pellix view is noticeably darker, less contrasty, and in the out of focus areas, rather diffuse.

The fine focusing rectangle of the Pellix is virtually the same brightness as the rest of the screen while the slightly larger and more elongated fine focusing screen of the FT is pronouncedly darker than the surrounding area. This variance is caused by the two very different methods of metering systems. In the Pellix, when you push inward on the large meter actuating lever, at the front of the camera,

¼" between meter and film plane – "remarkably small!"

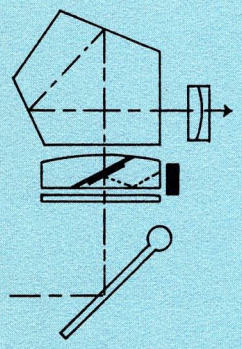
Less meter error than most thru-lens meter cameras

Remarkably good readings

New Booster meter outmeasures any other low light meter tested!

the metering circuit turns on and the ⅜ x ⅞ in. CdS cell ¼ in. in front of the film itself flips upward behind the pellicle mirror to measure the slightly-out-of-focus image. While some technicians have expressed disappointment that the meter wasn't even closer to the film plane, MODERN's technicians feel that the ¼ in. allowance for shutter mechanism, thickness of shutter wall and film plane plate itself is remarkably small as it is.

The Pellix's fine focusing rectangle outlines the area measured by the CdS cell.



Canon FT QL

The FT, which has an identical meter actuating lever, does not measure the light at the film plane. Instead, the condenser above the focusing screen and below the prism which usually aids overall picture brightness, has been diagonally split. The center of the split, at which a partially silvered mirror has been placed, allows 60% of the viewing light to continue through the prism to the eyepiece. The other 40% is reflected backward to a CdS cell at the rear of the condenser. The fine focusing rectangle in the FT therefore is actually the partially silvered mirror letting in 60% of the light. Because of the 40% loss to the CdS cell, the rectangle is darker than the surrounding area, which gets 100% of the light.

Since 60% of the viewing light hits the FT's CdS meter cell while 100% of the picture taking light strikes the Pellix's cell, the Pellix, understandably, can make lower meter readings than the FT. With an ASA 400 film, the Pellix will read down to 1 sec. at f/1.4 while the FT reads ¼ sec. at f/1.4. Both are remarkably good readings and actually represent light levels at which it would be all but impossible to see the image adequately through any SLR finder. (However, for those Pellix or FT owners who want even lower light readings, there is a new accessory Canon Booster, which in our preliminary tests easily outmeasures any other meter ever tested in low light. We'll get to it next month in a separate Modern test.)

Both the Pellix QL and FT have identical pointer systems in the viewfinder. A long thin needle swings over the right side of the picture area. The CdS actuating lever is pushed inward toward the lens mount to turn on the circuit and close down the aperture.

You align the needle with a small circle for correct exposure by turning either the shutter speed dial or aperture control on the lens. In the previous Pellix model, it was necessary to hold the actuating lever down to keep the meter working. This made it rather difficult to adjust the shutter speed since the speed dial is on the same side of the camera as the lever. Now the lever has a lock mechanism which allows you to lock the lever in place or not as you wish, thus freeing your hand to adjust shutter speed. The FT has the same locking mechanism on its lever.

When you turn on the Pellix or FT meter circuits, the finder area darkens, of course, if the shooting aperture is smaller than the maximum lens opening. While there is much to be said for rival metering systems which measure light at full aperture, the Pellix and FT stop-down system does simplify the interior mechanism and does allow you to take the reading through the actual aperture, rather than a simulated one.

The meter needle swings quickly in both cameras, under normal lighting conditions, and of course more slowly in very poor light. Readings are easily made. Undeniably the centralized ⅓ measurement of the two cameras minimizes inflated readings which could be caused by heavy back light, bright skylight, or other light areas of different brightness — provided of course that you meter the main subject correctly with the centralized semi-spot. When using a centralized semi-spot meter of the Pellix or FT, you must remember that the meter won't do your thinking for you just because it is selective. If your main subject is substantially smaller than the semi-spot or the total picture area needs an average reading different from the precise area measured by the semi-spot, exposure errors can occur. But your own brains plus the Pellix or FT metering systems should make an ideal combination, provided you have a sufficient quantity of the first mentioned.

Although the metering area of the FT is slightly greater than that of the Pellix (indicated by a slightly larger fine focusing rectangle in the viewfinder), the differential is not great enough to really matter in practical picture taking.

In terms of accuracy, MODERN's technicians could find no superiority of the meter at the film plane (Pellix) over the meter within the viewing system (FT) or vice-versa, even though one measured the light hitting the film and the other measured the viewing light. Both proved equally easy to use and equally accurate. Using MODERN PHOTOGRAPHY's Aerotronic P-803 Meter Tester, we found accuracy to be within ½ stop of a measured light source through the meter's usable range. The Pellix, of course, produces some fascinating problems of its own. Since approximately 30% of the light is filtered off to the viewfinder and 70% of the light continues to the film plane, the marked apertures on the lenses cannot be used as an actual indication of

Lock lever for CdS meter frees photographer

Take readings through actual aperture not a simulated one

Easy to take readings

Easy to use and accurate

modern tests

Pellix QL 50mm F/1.8 No. 182034		
Aperture	Center Sharpness	Edge Sharpness
1.8	Excellent	Very Good
2.8	Excellent	Excellent
4	Acceptable	Very Good
5.6	Good	Excellent
8	Good	Excellent
11	Very Good	Excellent
16	Good	Very Good

Canon FT 50mm F/1.8 No. 182034		
Aperture	Center Sharpness	Edge Sharpness
1.8	Excellent	Very Good
2.8	Excellent	Excellent
4	Good	Very Good
5.6	Good	Excellent
8	Very Good	Excellent
11	Excellent	Excellent
16	Very Good	Excellent

Pellix QL 50mm F/1.4 No. 41237		
Aperture	Center Sharpness	Edge Sharpness
1.4	Good	Acceptable
2	Good	Acceptable
2.8	Good	Acceptable
4	Very Good	Acceptable
5.6	Excellent	Excellent
8	Excellent	Excellent
11	Excellent	Excellent
16	Very Good	Excellent

Canon FT 50mm F/1.4 No. 41237		
Aperture	Center Sharpness	Edge Sharpness
1.4	Very Good	Excellent
2	Very Good	Very Good
2.8	Good	Good
4	Good	Very Good
5.6	Good	Excellent
8	Very Good	Excellent
11	Excellent	Excellent
16	Very Good	Excellent

Canon FT 58mm F/1.2 No. 26790		
Aperture	Center Sharpness	Edge Sharpness
1.2	Acceptable	Acceptable
2	Acceptable	Very Good
2.8	Acceptable	Excellent
4	Acceptable	Excellent
5.6	Good	Excellent
8	Good	Excellent
11	Good	Excellent
16	Good	Very Good

the amount of illumination hitting the film, although the depth of field of the marked aperture will of course appear in the final picture. How much light do you actually lose in the Pellix? We again went back to the Aerotronic Meter Tester. Careful comparison checks against the FT and against a measured light source indicated that the actual amount of light lost averaged ⅔ of an f/stop (you'd actually get f/1.8 at the film plane when the lens was set at f/1.4, for instance). However, an examination of a number of different pellicle mirrors and Pellix cameras indicated that there was a variation in the amount of light passed by various sample pellicles, which could amount to approximately ⅓ f/stop. This differential was not visible through the finder and of course would be automatically compensated for at the film plane by the behind-the-pellicle meter. When shooting flash, however, the instruction booklet for the Pellix QL wisely advises an additional full f/stop exposure at any given guide number to compensate for the light loss. Of course the FT model, which allows 100% of the light to hit the film plane, requires no additional flash exposure and the marked f/stops are sufficiently close to the actual light transmission of each lens to give you full use of the set aperture at all times.

Is there any actual loss of sharpness when the light from the subject passes through the pellicle?

To answer this important question, to determine how much sharpness loss there might be and how important this would prove, MODERN's technicians used one set of normal focal length lenses 58mm f/1.2, 50mm f/1.4 and 50mm f/1.8 on both the Pellix and FT cameras. Tests were made using our standard U.S. Air Force Targets, and practical tests were made of distant scenes and subjects to be copied. Tests were also run with color film. The test target negatives were examined with our 35X Omag. microscope. Our practical test negatives were enlarged with glass negative carriers to 11 x 14 in. glossy prints.

Undeniably a certain amount of sharpness is lost by the pellicle mirror, according to all tests, lab and practical. In MODERN's opinion, the 58mm f/1.2 lens, designed primarily for speed, should not be used with the Pellix QL. The other two lenses, as you can see, are generally superior and the slight loss of image sharpness caused by the Pellix is not critical.

Broadly speaking, the Pellix produced an image which in its ability to resolve lines per millimeter lost about one quality grade. However, this was not completely fair in terms of testing since the sharpness loss caused by the pellicle did not resemble the change of sharpness generally incurred in optics.

To see what the Pellix's unique quality produced in practical terms, we turned to the 11 x 14 in. black-and-white prints. When examined separately it was all but impossible to pick the Pellix prints from the FT prints. Only when comparison prints were examined

Better performance for practical picture taking

- *Extremely fine Micro-Prism focusing*
- *Ground glass rectangles excellent*
- *Few SLR's can be focused with equal precision*

Modern photography likes Canon FT-QL

right next to each other at a few inches viewing distance did a slight differential become evident. At this point and at this point only, a slight loss of edge sharpness plus a tiny additional amount of flare could be detected in the Pellix prints. There was also a minute loss of contrast in the negative which could easily be altered in making the print.

In color photography, the pellicle proved to be almost neutral but not quite. It seemed to have a slight tendency toward warmth, like a mild skylight filter. Skylight filters owners may find that they no longer need one if they use the Pellix QL. However, unless slides were looked at on a perfectly balanced viewing box right next to each other, no difference would be noticeable. The same was true in projection. If you projected on a giant flat matte screen with perfectly matched, excellent projection lenses and bulbs, with the slides mounted in glass to assure accurate focus, you might be able to detect slight sharpness changes affected by the pellicle. In other words, for practical picture taking, the Pellix does perform well, far better than such a system might appear to perform theoretically. But it is true that there are some differences and the differences, small as they are, are in favor of the picture taking abilities of the Canon FT.

The central grid of both the Pellix and FT are extremely fine and worked well with lenses up to 300mm f/5.6, and can be used as a standard focusing area beyond this point. Naturally the grid does fracture out of focus images more acutely in the mid-range of normal focal lengths from 35mm to 135mm. The fine focusing rectangles of both Pellix and QL must be rated excellent for accurate focusing and the outer concentric Fresnel rings are so fine that this area is almost as good for focusing as the rectangle. Few SLR's can be focused with equal precision. However, the FT viewing screen does give you a better indication of precisely how an out of focus image will appear on the film than the Pellix does. With the Pellix the unsharpness has a rather strange blur and immediate loss of contrast which does not appear in the film.

Photographers familiar with the viewing quality of the older Pellix camera without the QL or CdS meter actuating level lock will find a marked difference in the Pellix QL's finder. The newer camera's finder seems to have a yellowish cast to it, apparently introduced to aid viewing brightness. The Fresnel lines are also somewhat finer in the new Pellix QL.

Shutter speeds of the Pellix QL and FT cameras when tested on the National Camera Motion Analyzer were within tolerances.

In practical field tests both Pellix QL and FT behaved very nicely. The FT became a real favorite around the MODERN office because of its construction, ease of handling and semi-spot meter. This brings us to the inevitable question: is the lack of a rapid return mirror in the Pellix sufficiently important to justify the loss of viewing brightness, loss of lens speed, slight alteration in picture taking ability, plus $60 additional price? In practical picture taking, MODERN has long since found that the ability to keep a hand-held camera steady depended more upon the ability of the hand than of the camera. The photographer is the major problem, not the equipment.

With both cameras locked to a good tripod, it's doubtful that anyone could see a superiority of the Pellix in sharpness, particularly since the pellicle itself accounts for a slight loss of quality where extreme examination of telephoto work, where the lens itself is on the tripod and the camera swings unsupported, a case could be made out for the Pellix for those who must use slow speeds and don't have time to lock the FT's mirror out of the way before taking the picture. For a while the Pellix was the only camera offering the central measuring spot, but then came the excellently devised metering system of the FT. This camera, coupled with an exceptionally fine series of lenses allowing through the lens focusing and metering from 19mm upward, should cause many a photographer to wonder where the FT has been all his life.

FT-QL-excellent metering system

"Should cause many a photographer to wonder where the FT has been all his life!"