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THE SUBMINIATURE TIMES

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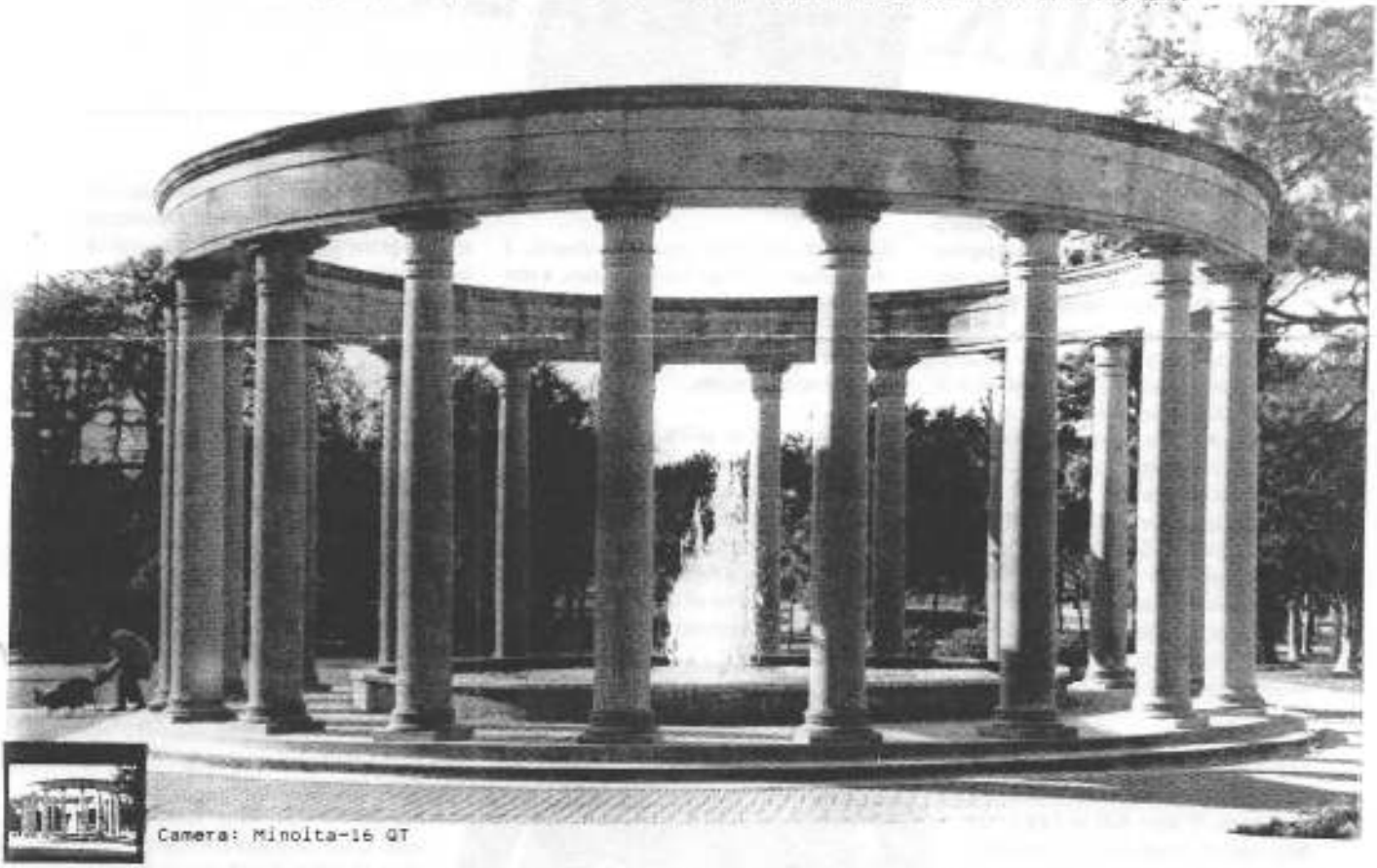
Supporting 110, 17.5mm, 16mm, 9.5mm, 8mm, 4mm, 1mm, Microdot, and Electronic Still Photography.



Camera: Minolta-16 QT

UPDATES:
ENTRY LEVEL When Kodak reduced the price of the Cameo-110 to $24 it took the industry six (count 'em) days to respond. The Vivitars are down to $10 each, and Fisher-Price now wants a piece of the summer pie.

THE HOUSTON PHOTOCHROME CLUB extends a warm welcome to all Houston area subminiaturists interested in projection transparencies. Awesome work done by current club members was demonstrated at The Photographic Collectors of Houston Trade Show, March 26-27. The monthly meetings feature competition assignments. Contact: Ernie Wales (713) 771-5342.

RESPOOLERS If you are new to subminiature color transparencies and want to try your hand without the cash outlay for fresh 16mm x 100' Ektachrome (currently $27.80 per bulk roll from Kodak), Brent Esse has 2 emulsions available in surplus: 7239 EI 160D (Daylight), and 7240 EI 125T (Tungsten). We tried the 7239 recently. Pull off the first 6 feet or so, to get to the correctly color balanced footage. Store the rest in the vegetable bin of your 'fridge. 16mm x 100' rolls $5 ea. Brent Esse, (713) 528-6295.

DID YOU KNOW? You can process Ektachrome in your b & w chemicals to get a trial look at the film speed, granularity, etc. But for color processing put freshly exposed film in a black 35mm film can, label it, and ship to SHOOTERS USA, Box 8640, Rolling Meadows, IL 60008.

'QUICKTAKE' captures high resolution 640 x 480 color, breaking $1000 barrier. $749 from Apple Computer Inc.

in the dark

By Peter Kolonia

Now that Panatomic-X has bitten the dust, what's a fine-grain fanatic to do? Test the other contenders!

Alas, poor Panatomic-X, I knew it well. That full-tone, fine-grain black-and-white standby beloved by generations of sharpness and grain-conscious photographers is getting the boot. . .a victim of progress.

The Great Yellow Father in Rochester says the technologically superior T-Max 100 can do everything Pan-X could do, only better. According to the Mighty K, T-Max 100 souped in T-Max developer produces as fine a grain *and* as full a tonal range as that classic one-two punch of D-76 and Panatomic-X.

Three times the speed and no loss in grain? Hmmm. Sounds too good to be true, despite the much heralded "great advances in technology." And so, after a moment of silence to mark the passing of a great film, let's march into the darkroom to find out what, if any film, can take its place.

My personal quest to replace the dynamic duo of Pan-X and D-76 led me to investigate Kodak's T-Max 100 in T-Max developer, T-Max 100 in fine-grain Microdol-X, Tech-Pan in Technidol, Ilford's Pan F in Microphen, and Agfa's APX 100 in Rodinal (1:25). I also souped my precious remaining Pan-X rolls in D-76 to see how the films above compared to my old ISO 32 favorite.

There are several other excellent fine-grain, black-and-white emulsions on the market, most notably Agfa's APX 25, but these tests were not meant to be exhaustive or all-inclusive. They *should*, however, serve as a starting point for photographers who have relied on Pan-X in the past and are now forced to look around for other fine-grain alternatives.

Each of the films tested was processed for the recommended time/temperature in the developers indicated. Then I evaluated each for film speed, tonal range, grain, resolving power, and exposure latitude. I also checked their sensitivity to processing variations; the number, range, and convenience of compatible developers, and the availability of each film type. To learn how these films and developers would respond under different light with different types of subjects, I shot a studio portrait for skin tones, a test target for resolution, and a series of outdoor subjects, mostly architectural, for shadow detail and grain comparisons. Herewith, the results.

Panatomic-X in D-76

Image quality: Developed in D-76 (1:1), Panatomic-X showed surprisingly large grain for its slow speed. Its contrast was medium; shadow detail, excellent. Despite Panatomic's reputation for blocking up highlights, none of the prints made for this test needed extensive burning-in. Resolving power was good (see the resolution test targets on page 40).

Processing: An ample list of compatible, easily obtainable developers made Pan-X an attractive, versatile film. Kodak's redoubtable trio, HC-110, Microdol-X, and the all-purpose D-76, produced acceptable negatives, although they're powdered and not as convenient to use as liquid concentrates. Pan-X was forgiving of underdevelopment, but unlike its sister films Tri-X and Plus-X, it didn't take kindly to overdevelopment; try it and you'd get impossibly dense highlights, particularly with a fast-acting developer like HC-110.

T-Max 100 in T-Max developer (ISO 100)

Image quality: Despite my skepticism, Kodak's claim that T-Max 100 produced as fine-grain a negative as Panatomic-X is, if anything, an understatement. T-Max 100 negatives display an even finer grain and more uniform grain pattern than their ISO 32 predecessors. Overall contrast was slightly less (no surprise), and its resolving power appears slightly greater than Panatomic-X's. Of the six different film/developer combinations tested here, no two came as close to matching each other, grain for grain, as T-Max 100 and Panatomic-X. T-Max 100 is available in 100-foot rolls, and the savings available at that end of the equation may well make up for its more expensive developer.

Processing: T-Max developer is sold as a liquid concentrate and is a cinch to mix. It is, however, relatively more expensive, recommended for one-time use only, and offers a rather narrow time/temperature latitude (at least with T-Max films) compared with other Kodak products. Over- or underdevelop by more than 15 percent and you're in trouble, especially on the over side.

Ilford Pan F in Microphen (1:1)

Image quality: In general, Pan F came up slightly contrastier than Panatomic-X, with noticeably less detail in the shadows. Its slightly higher apparent resolving power (see targets) is probably a function of its half-grade contrast increase over Pan-X. The grain characteristics of the two films are similar, and one pays little, grainwise, for the one-stop-faster emulsion of Pan F. Note: I've been told that Pan F is difficult to find in some parts of the U.S. and may have to be special ordered.

Processing: Microphen is a fast-acting all-purpose developer for Ilford's Pan F, FP-4, and HP-4 black-and-white films. It comes as a powder and is mixed at 104 degrees, a temperature easier to achieve for some darkrooms than the 120 or 125 degrees recommended for Kodak's powdered developers.

Agfa APX 100 in Rodinal (1:25)

Image quality: Grain, contrast, and apparently strong resolving power are the main characteristics of this film/developer combination. Grain size was far larger than any other film tested here and seemed to have more in common with Kodak's Plus-X than T-Max 100. (Agfa's new APX 25 would undoubtedly produce a finer grain, but this film had not quite hit the market when I began testing.) The combination of APX 100 and Rodinal (1:25) produced a contrasty PC grade No. 1 negative.

Processing: There are many Agfa developers recommended for its newly released APX 100 film, including Atomal, Refinal, Rodinal, Rodinal Special, and Studional. You may, however, encounter difficulty in obtaining any of them, with the exception of the relatively ubiquitous Rodinal. If you've never used this developer, don't be unnerved by the brownish hue of the undiluted concentrate or the cola-brown color of the spent solution; both are normal.

Tech Pan in Technidol LC (ISO 25)

Image quality: As its name implies, Kodak Technical Pan is a film for high-resolution, scientific, and medical applications. It came as no surprise, therefore, that its negatives were extremely contrasty and just barely squeezed onto grade No. 0 paper, using the lowest-contrast developer of the nine recommended for this film. The negatives displayed phenomenal resolution. Grain in enlargements bigger than 20×24 looked like that of Tri-X blown up to 8×10. Tech Pan in some ways is the logical successor to Panatomic-X, especially for those photographers who want the ultimate in fine grain. If you decide to try it, consider flashing the paper and/or film prior to image exposure to bring down contrast.

Also, Tech Pan, because of its extended red sensitivity, is an interesting film for portraiture, especially for fair-skinned subjects with uneven complexions. Red blemishes are rendered almost as light as whiter surrounding skin. You'll probably want a soft-focus filter, however, because the resolving power of this film will show every wrinkle!

Processing: One of the problems with using the Technidol LC powder developer is getting it into solution. The packets making 16 ounces of the low-contrast de-

continued on page 4

Classical Gothic: *One building in two architectural styles offered both detail and shadow—perfect for film testing. It was shot with six different film/developer combinations, and 20X photomicrographs from each are printed below (test targets: 10X).*

Which combo has the edge on sharpness? Your choice.

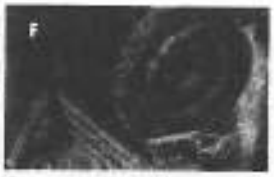
Panatomic-X
Sharpness: Good

T-Max 100 at ISO 100
Sharpness: Good

Ilford Pan F
Sharpness: Good

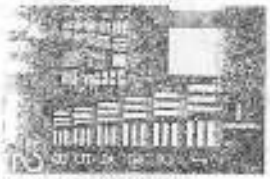
Agfa APX 100
Sharpness: Very good

Technical Pan Film
Sharpness: Excellent

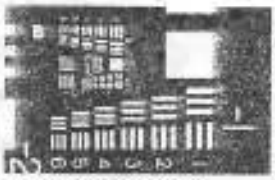


T-Max 100 at ISO 32
Sharpness: Very good

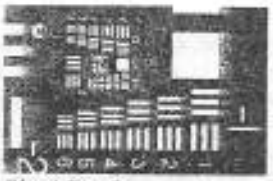
What's best for grain and contrast? Here's the story. . .



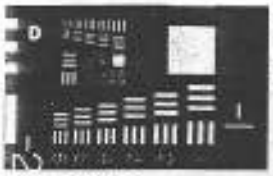
Kodak Panatomic-X
Grain: Medium fine
Contrast: Medium to high



T-Max 100 at ISO 100
Grain: Medium fine
Contrast: Medium



Ilford Pan F
Grain: Medium fine
Contrast: Medium to high



Agfa APX 100
Grain: Medium
Contast: High

Technical Pan Film
Grain: Extremely fine
Contrast: Very high

T-Max 100 at ISO 32
Grain: Very fine
Contrast: Low

in the dark

continued from page 40

veloper invariably leave a lot of large-size flecks sitting at the bottom of the graduate that have to be filtered out. Another problem: Once it's mixed, you have only 24 hours to use the stuff before it goes bad. Technidol LC has a pronounced pinkish cast, which is normal. If you decide to try Tech Pan, read the developing instructions carefully. The liquid Technidol calls for an entirely different agitation technique than Technidol LC powder.

T-Max 100 in Microdol-X (ISO 32)

Image quality and speed selection at heart, I decided to experiment a little and move away from the times, temperatures, and ISOs recommended by the manufacturers. I wanted to pull T-Max 100 to ISO 32 to see how it would react at the light levels required for Panatomic-X, and then soup it in a fine-grain developer like Microdol-X (1:3). As expected, the resulting negative lacks contrast and is probably too flat for photographers using diffusion enlargers. However, I use a condenser enlarger and found that the T-Max 100 (at ISO 32) printed nicely with a grade No. 2.5 filter.

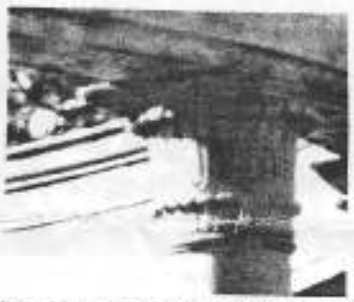
Grain is comparable to that of Tech Pan, and the resolving power of T-Max pulled to ISO 32, while not as phenomenally fine as Tech Pan, was far superior to that of other films tested here. The *apparent* sharpness suffers, however, due to the extremely low contrast. In short, I can recommend this technique for medium- to high-contrast subjects only. You may want to try it for portraits because of the extremely even skin tones it produces.

Processing: Using the time-honored rule of a 15-percent developing decrease for each stop pulled, my developing time in Microdol-X (1:3) was a little more than 10 minutes at 72 degrees. While contrast would have been improved by additional development, grain would have suffered. Like D-76, Microdol comes as a powder, has to be mixed in advance of use, and is available almost everywhere. It's not reusable in diluted form.

For you black-and-white reversal kit users, one final note on the discontinuance of Panatomic-X: Kodak is releasing all new kits built around—you guessed it—T-Max 100. It claims the tabular grain wonder film produces richer and sharper transparencies than Pan-X ever could.

I think on this one, I'll take Kodak's word for it. ○

COMMENTARY ON "In The Dark". In a long, well written letter, Mr. Phil Jones, of Chicago, IL., calls this article "a classic case of disinformation for the subminiature novice. Specifically: "Panatomic-X and D-76 a dynamic duo, Pan-F difficult to find, Rodinal 1:25, use Technidol LC but consider flashing the paper and/or film prior to image exposure to bring down the contrast."



Film: 35mm Tech Pan split to 16mm
Developer: Technidol

EDITOR'S RESPONSE Applaud Kolonia for going into the darkroom and making the tests. No, his conclusions don't apply to the subminiature formats, but there's nothing he wrote that can't be revised slightly. 1. Avoid D-76 on subminiature negatives. 2. Pan F is available from B&H Photo 1-800-947-9960. 3. Rodinal 1:25 is harsh. Try anything from 1:100 to 1:250 for high acutance and convenient processing times. 4. Technidol LC has been discontinued. Technidol is still available. 5. Reduced exposure indexes and processing times will eliminate a need for flashing.

Egad, more slick high tech from Hong Kong

Haking of Hong Kong, makers of Ansco cameras, among many other things, has unleashed two clever new items destined to set the world of pocket cameras abuzz. First and simplest is the Ansco HR Disc 65 which looks conventional and Kodak-inspired until you ogle at its lenses. There are two in a single, rotatable housing on the front and you select either the 12.5mm f/2.8 normal or the 25mm f/6 converted tele by turning the housing clockwise until the word Tele or Normal is readable. The HR 65 also has an auto-sensor circuit providing flash when needed, "time out" circuit to turn camera off automatically, claimed 2 sec. flash recycle, hinged protective cover. It's powered by two AA batteries. Oh, yes, the model pictured with wrong model number listed is indeed a prototype. Also prototypical is the Halina Ultima AF-E, a compact leaf-shutter camera that uses Haking's clever 7-step pre-flash autofocus system, has motor wind and rewind, and provides apertures to f/64 by means of a rotating disc aperture system and neutral density filters. Such tiny lens openings are needed with ASA 100 film in bright sunlight. The Halina is thus able to cover ASAs of 25-1000 (it's one of the few leaf-shutter compacts to do so), EVs to 18 and may be the only camera to use light reflected from pre-flash to set proper ambient-light exposure. The feature-laden Halina also fires its main flash only when needed, turns itself off into "doze" condition and can be instantly reactivated by touching the shutter button, has built-in grip handle and lens/finder cover, and sensor flash override for backlit subjects.

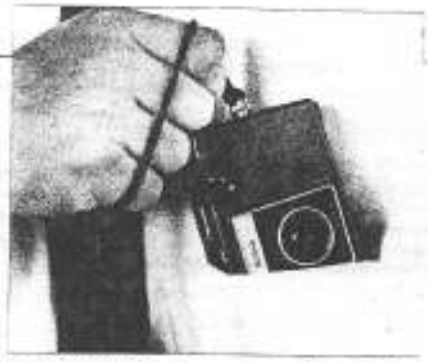
25 YEARS AGO — MAY 1967

If you find it burdensome to carry a camera slung from your shoulder, Kodak has the answer: two new streamlined Instamatics small enough to fit in your pocket.

The projecting lens of the typical camera is no problem because there is no projecting lens; it's retracted into the body. When you want to shoot, you press a button on the bottom. The lens pops out and the shutter release pops up into the ready position. When you're done shooting, push the lens back into place and drop the camera in your pocket.

Like all other Instamatics, the new cameras use instant-loading drop-in film cartridges and flashcubes—those little four-sided, four-shot flashbulbs. Inserting a flashcube automatically sets the shutter speed for 1/30 second—normally, for daylight pictures the cameras fire at 1/250 second. Windup ratchet-action spring motors advance the film automatically after each shot and rotate the flashcube. Exposures are counted automatically, and an interlock prevents double exposure.

Both cameras have fixed-focus lenses and bright-frame outlines in the viewfinders; they weigh 11 ounces, are 4½ by 2½ by 1½ inches in size, and come with convenient wrist straps. The S-10 has an f/9.5 lens; the S-20, an f/5.6 lens.



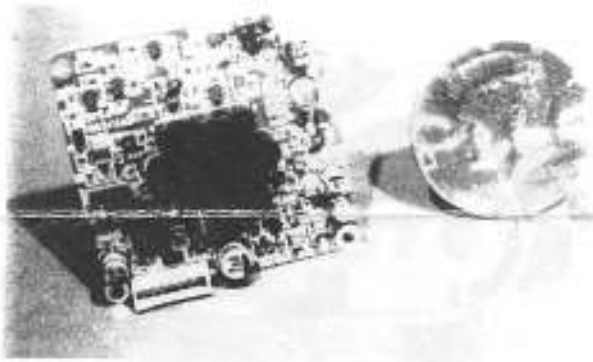
Kodak's new Instamatics are streamlined to fit in your shirt-pocket.

FREE CLASSIFIED

FOR SALE Rollei A-110. Minox 35ML w/flash $350. Rick Berman, The Camera Exchange, 4014 Richmond Ave., Houston, TX. 77027 (713) 621-6901.

FOR SALE Minox LX chrome, case, cable release, chain, bracket, film. All EX to LN $525. Larry Rees, (916) 989-3919.

WANTED Film cassettes for Minicord III, and Cambinox binocular camera. Ron Guengerich, P.O. Box 581, Addison, IL. 60101. (708) 495-3424.



PINHOLE CAMERA Low cost PC-8P can be installed behind any 1/32" hole in a hat or tie to output 380 line resolution monochrome NTSC video. The board measuring 1-5/8" square outputs to Mini-8 Bodycam recorder or transmitters. Easy connection instructions. Accessories include: custom housings, battery pack. Transmitters ready made or in kit form for additional saving. Overnight delivery. Supercircuits, 13552 Research Blvd., Austin, TX 78750 Catalog (512) 335-9777 FAX (512) 335-1925.

1/3 CCD BOARD CAMERA

Features brighter and sharper color

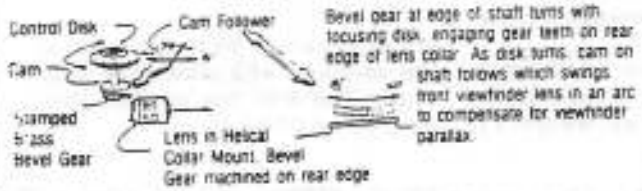
The 1/3 CCD, by Toshiba, is built for integration with videoconferencing and collaborative shared document applications. The unit employs an IC to provide optimal registration and white balance, advanced macro funcionality, more than 330 lines of horizontal resolution, and an S/N ratio above 46 dB. This model also features a 45° infinite field lens, and a composite NTSC output. Power is supplied by an ac adaptor. The camera can also be integrated into an existing product of bundle the camera along with a digital video capture board and the appropriate software. Contact Toshiba America, Multimedia Systems Group, 101 Johnson Drive, Buffalo Grove, IL 60089. (800) 253-5429.

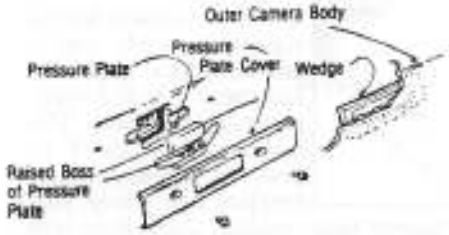
"How to Repair Your Minox"
(3) Reprinted from "Shutterbug" 3/92

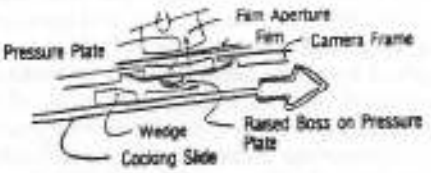
Cocking Shutter

Closing the camera moves the cocking slide toward the lens. The pins inside slide the setting springs which push the blades to cock the shutter. The clockwork timing mechanism resets under pressure of its own internal spring and timing lever slowly slides forward, inserting pins through the slots in the blades. Pulling the camera open tensions the spring, which catches ends of slots on pins of timing lever. Blades are held under tension only until the camera is opened.

Focusing







The Curved Film Plane

The Minox lens achieves its remarkable combination of compactness, speed, and resolution because in the mechanical Minox it focuses on a curved rather than a flat film plane. Forcing the flat strip of 9.5mm film to assume a three-dimensional curve requires a unique pressure plate mechanism. It clamps the film rigidly in place for exposure. To achieve this the pressure plate is spring loaded away from the film, rather than against it like virtually all other subminiatures. It releases the film for loading, advancing and unloading but clamps it tight against the spring for exposure. To accomplish this, a wedge is built on the sliding part of the camera body and is [illegible] on the back of the pressure plate. Thus only when the camera body is open (in the picture taking) position, does it overrule the spring and put pressure on the film. All the rest of the time, the pressure plate is released and the mechanism is pulled away from the film by the tension of the spring.

(To be continued)

OPEN FORUM

INTERNATIONAL SUBMINIATURISTS are complaining that soon after we published Issue #62 an 'oinkish' individual scarfed up all the remaining 1.35V mercury batteries spotted at the Bay Street Pharmacy, Nassau, Bahamas. Not to worry! We've unearthed another small cache, V625PX & V675PX 1.35V, $2.00 ea. Contact: Terry Aldahl, The Camera People, 400 Verdant Circle, Longmont, CO. 80501 USA (303) 776-1490. (Mention Sub' Times)

Chadt watch/camera	$149	P
Crystar HIT	39	B
Falcon Midget-16	49	B
ITT Binocular/camera	109	S
Kiev Vega	149	B
Mamiya-16 Automatic	124	A
Mec-16 SB w/box	149	B
Minolta-16 MG	49	B
-16 P	44	B
-16 P	34	B
Minox B	195	V
B	129	M
EC w/display case	195	C
EC w/flash	184	B
EC w/case	129	LD
LX Gold	1850	B
LX Black	525	K
LX Chrome	504	K
Pentax-A110 w 24/f2.8	199	L
PTX 70/f2.8 telephoto lens	279	B
Stereo Mikroma	1250	B
Tessina-L	545	S
Yashica Atoron kit	69	S

A	Adorama	(212) 741-0052
B	Brooklyn Camera	(718) 462-2892
C	Columbus Camera	(614) 267-0686
K	KEH	(404) 892-5522
L	Le Camera Zone	(609) 588-9090
LD	Lauderdale	(305) 524-9447
M	Midwest Photo	(614) 261-1264
P	Profoto	(212) 239-8689
S	Speicher	(516) 546-3513
V	Vistek	(416) 365-1777

Cheap dupe: *In the 1950s there were dozens of brands of junky little Japanese subminis, all made along the same lines. The Jay Dee (top) was one made about 1951 by the Tougo-do Mfg. Co., Japan. While this type of camera was noted for its low cost and cheap construction, it was copied by an even cheaper Mini Camera (above), made in the late 1960s or early 1970s by an unknown Hong Kong manufacturer.*