

THE SUBMINIATURE TIMES

The Subminiature Times is published monthly by Doylejet, P.O. Box 60311, Houston, TX. 77205 (713) 443-3409
Supporting 110, 17.5mm, 16mm, 9.5mm, 8mm, 4mm, 1mm, Microdot, and Electronic Still Photography.



Camera: Minolta-16 P
Film: FUJI HS-U
Developer: Rodinal 1:200



Mini CCD Camera

SONY CORPORATION OF AMERICA has announced the introduction of a miniature image-sensing camera module with 11mm auto-iris lens and built-in electret condenser microphone. The Model HVM-52H camera provides high-quality black and white images suitable for image processing, telecommunications, inspection and surveillance. Measuring 2 x 1.3 x 4 in., and weighing only 9 ounces, the HVM-52H incorporates a

$\frac{1}{2}$ inch format interline-transfer CCD providing 380 TV Lines of resolution (510 x 492 pixels). The unit operates to light levels of 0.7 lux. Sony Corporation of America, Component Products Co., Image Sensing Div., 10866 Valley View St., Cypress, CA 90630.

MINOX USERS BENEFIT from the still depressed global economy as collectors sell off many hard to find accessories. Contact Woodmere camera for: Negative carriers, filter sets, binocular attachments, copy stands, EC bulb holders, flash guns, reflex and right angle finders, slide projectors, transparency viewers/cutters and tripods. Woodmere Camera, 337 Merrick Rd., Lynbrook, NY 11563 (516) 599-6013

TOWARD BECKONING POOLS

Narcissus got a bad rap. The kid wasn't interested in his reflection. He was probably looking into a dream lens and felt a tug.

Any Minox owner will tell you that you can do a lot of work with an f/3.5 lens. But an expanse of glass is visceral. Not only does it look good on your camera, when the lights get dim something primal in us says f/2.8 would be perfect. Unless you already have an f/2.8, then you're convinced that f/2.0 is what you need in life.

Chasing faster lenses isn't quite like chasing fine grain, or faster shutter speeds. There's a limit. And we've reached it. (Inset)

We should think of the f/number of a lens, not as the ratio of diameter to focal length, but in terms of the angle between the axis of the system and the extreme ray from the edge of the aperture to the axial image point. In these terms the f/number is expressed as:

$$f/\text{number} = \frac{1}{2N \sin a}$$

where N is the refractive index of the medium in which the image is formed, and a is the angle between the axis and the extreme ray.

In cameras, the image space is always filled with air, hence $N=1$, and that leaves $\sin a$ as the only variable. The value of the *sine* of any angle can never exceed 1, that is, the *sine* of $0^\circ=0$, the *sine* increases until at 90° it is equal to 1.0, then it diminishes to zero again at 180° , rises to 1.0 again at 270° and back to zero at 360° . But then, if the maximum value of the *sine* of a is 1.0 and the refractive index of air is likewise 1.0, then the maximum aperture a lens can have is:

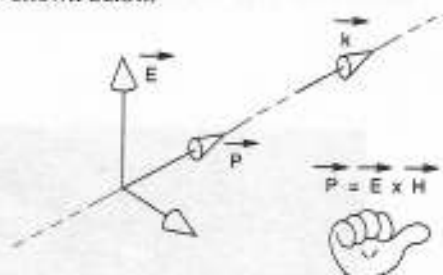
$$f/\text{number} = \frac{1}{2 \times 1 \times 1} = \frac{1}{2} = f/0.5.$$

Photo Lab Index, Amphoto, New York

Most 16mm subminiature cameras have f/2.8 lenses. Stick with the Minoltas if you don't spool your own film cassettes. In the 110 format, choose a Pentax or Rollei over a Vivitar, Kodak, or Vitoret.

Subminiature novices who've never used a GaMi hear about the f/1.9 Esimitar lens and stare at the horizon. Working at that aperture however, you begin to discover why hyper lenses aren't used on general purpose cameras. The depth of field at

Light is a transverse electromagnetic wave. The electric and magnetic fields are perpendicular to each other and to the propagation vector k , as shown below.



full aperture is paper thin. Coupled with a rangefinder, the GaMi lens is so abruptly sharp it produces unflatteringly detailed closeup portraits.

If you really need the speed consider using the Steky III or the Ricoh-16; cameras with interchangeable C mount lenses. Cine optics like the 25mm /1.4 Ektar, the 50mm/1.4 Fujinon and the 12mm/1.2 Navitar, are available from Brooklyn camera Exchange for about \$50 apiece.

2.8 2.0 1.4 1.0 0.7 Splash

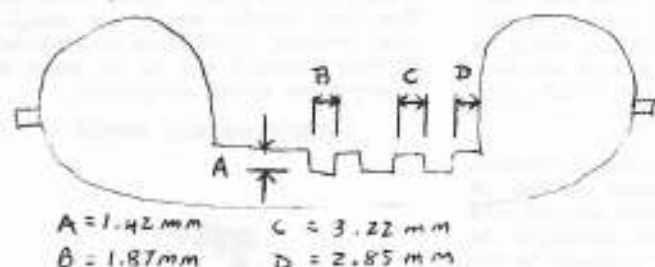
If you decide to step over the edge, lenses rated faster than f/1.0 are now available in the popular Newport catalog. Since f/0.5 is the limit, the Newport 19mm/0.7 Achromat is one stop short of having an open hole in front of your camera. The price of the unmounted glass is \$70.00.*

Getting your old lens drilled out and your dream lens set and calibrated are specialties of the house for shops like Professional Camera Repair, in NYC, or Microtec, in San Diego, CA. A typical charge is \$100 an hour for the ten hour job.

Nothing says you can't buy a lens, drill out a cheapo 110 camera with a built-in flash and turn out a dynamite little camera for yourself. Problem is, even though the lens suppliers also have tiny adjustable diaphragms to make your project even more delectable, 0.1mm variations at the image plane can change the point of focus by 3 ft. There's less than a 1 in 1000 chance that you can get an f/0.7 lens into proper position without industrial grade equipment. That is, assuming you've found out how to drill out the old lens without damaging the shutter.

Subminiature is also about collecting. It may suit your purposes just to fit that huge f/0.7 to your camera and go to the next camera club meeting with the thing dangling from your neck. Who's to know that you still shoot all your pictures at f/5.6? Let the blondes keep their diamonds. Glass is more fun.

* Achromat #KBX043. Newport, 1791 Deere Ave., Irvine, CA 92714 1-800-222-6440.



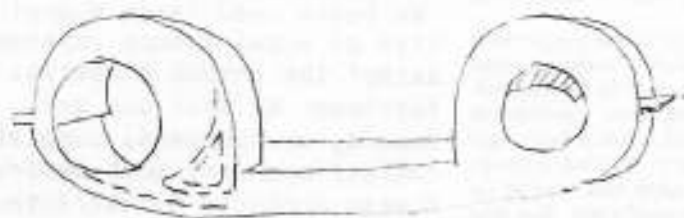
RESPooling 110 Continued

Data submitted by P. Banks,
Hollywood, CA

There are two major hurdles to re-spooling any 110 cassette with any film.

1. An obstruction inside the first curve of the supply side chamber sometimes prevents you from pushing in more than an inch of film.
2. Automatic cameras will read a notched cassette as Ektachrome ISO 64.

To reduce the speed of cassettes that contained 100-200 or 400 speed film to match your ISO 50-80 microfilm, use a mini-saw or Exacto knife to notch the cassette as shown. Conversely to raise an ISO 64 cassette to ISO 100 fill in the gaps with little pieces of index card, held in place by adhesive tape.



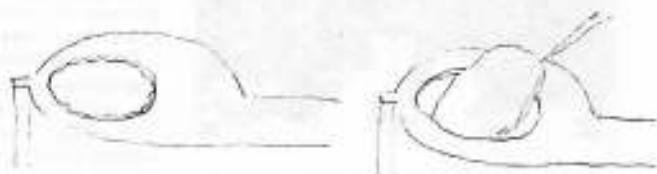
To get at the obstruction inside the cassette you must drill out a hole. The ledge is located at the same spot as the flange on the outside. The smaller the incision you make getting to it the better, a 14mm diameter hole is sufficient.

If you make the hole too large, there's a chance you'll cut into part of the light trap, producing a useless cassette that will always scratch film.

First, make a light score around the top, using a microdrill, or Dremel Mototool bit #112, the Small Engraving Cutter (3-32" shank).

The cassette is made of a plastic that will flow when it gets hot. It'll wrap itself around the bit like molasses if you cut too fast.

Should this happen, stop. Clean the tool and continue using a lighter pressure. Eventually you get to a point where the plastic is scored heavily but won't break through. Use your dental pick or Exacto knife to remove the scored circle.



Using a burr, make zig zags across the ledge to wear it down completely. In an emergency, wrap a piece of #320 Wetordry sandpaper around a pencil eraser and sand it down manually. When you no longer hear any chafing it is acceptably smooth. Blow out the dust and feel inside with your pinky finger.



Clean the chamber by rinsing it several times. (Don't get the backing paper wet.) Seal the hole. A doubled layer of construction paper held on with adhesive tape works fine. Reload as shown last issue. It's a one hour project you can do it.

FREE CLASSIFIED

FOR SALE Kodak Color Negative 7293 16mm x 100' refrigerated. ISO 125/200. Paul Price, 5300 Walnut, Downers Grove, IL 60515 (708) 852-7628

FOR SALE Large collection of modern and classic cameras. Please write for list. Cameras, 41 Heather Lane, Mahwah, NJ 07430

"SPYING WITH A CAMERA"
continues from last issue.
The reprint was from Pop-
ular Photography, July,
1940. Submitted by Steve
Kessler, Burbank, CA.



Mr. and Mrs. Robert Switz, American citizens, were evicted from France because of their camera-spying on behalf of Russia.

The other important members of the ring also got away, leaving the small fry to take the rap. The master spies had been in the country—with their cameras—for a long time and Lankowski's little misadventure was the first blunder that had been made. It is known that they had obtained, among other things, pictures of the wind vane of a secret navy plane and of the new gun sights on military planes. Further, they had been opening mail on German transatlantic liners and photographing secret documents. This was brought out at the trial of the four stooges and left the G-men to guess what else the band had gotten away with—and what their successors have photographed since.

The work of this Nazi ring was confined to carrying out one of the four major functions of the camera spy—the copying of secret documents without the knowledge of their possessors. The other three functions, stated simply, are: the picturing of secret military or industrial areas, the transmission of code messages, and the photographing of weapons and military machines so as to reveal design secrets.

Usually, the discovery that a document is missing nullifies the work that has gone into its theft. Therefore, it is essential that such a paper be copied, rather than stolen. For instance, as soon as a country discovers that someone has stolen a copy of a code, that code is changed. But if a spy can arrange to copy the code without anyone knowing it, he has achieved an important objective.

One of the most astounding cases of camera spying within the past few years came to light when the French arrested Mr. and Mrs. Switz of East Orange, N. J. on suspicion of espionage. But weeks before, bent over a tray in a photographic darkroom, they had prepared for this eventuality. In the police station, a little nervously, Mrs. Switz fished in her pocketbook and brought out a pack of cigarettes, selected one carefully, and lit it.

The gendarme who had been standing over her, watching every move said nothing. A few minutes later he wrinkled his nose in distaste and moved a few feet away. The cigarettes these Americans smoked—how could they stand that smell? The young woman smoked the cigarette down until she could no longer hold it, dropped it in an ash tray, and watched the tiny stub dissolve into ashes. Then she sighed.

Thus disappeared a batch of information that would have made the hair on every head in the French general staff snap up to attention. The smoking of the cigarette destroyed the evidence in her possession—poison gas formulas stolen from the French army.

These military secrets had been photographed and then reduced and printed on very thin strips of sensitized paper. The prints were rolled inside cigarettes, where they could be carried easily—or destroyed easily. The latter alternative was chosen by Mrs. Switz when she and her husband, Robert, found themselves in durance vile.

This little gesture did not help the couple for long, however. When the

French police finished questioning them sixteen months later, they had been exposed as members of the biggest espionage ring (believed to have been acting for Russia) discovered in Europe since the World War (1914-18).

The photographic device used by the Switz couple was just one example of the camera genius that directed the far-flung work of this band. The ring utilized the photographic arts as no other had before. Ironically enough, it was a blunder on the part of the Switzes—a stupid little mistake which the most innocent amateur photographer would know better than to make—which led to the smashing of this espionage organization and to the conviction of more than a score of its members.

During the time the Switz couple were being held on suspicion, a package turned up at a French consulate in Switzerland. It had been deposited there mysteriously and those who opened it found four negatives and a strangely worded message. The photographic expert who studied the negatives noticed immediately that they were peculiar because of the great extremes of contrast. There were spots where the films were almost opaque and other small sections where they were transparent. They seemed to form some sort of design. Acting on a hunch, the investigator fitted the four films together in a square and placed them on top of the message which had accompanied them. The words which showed through the film spelled out a secret message!

After copying down the message, the expert looked more closely at the negatives. Being a good photographer, he was horrified at what he discovered on the emulsion side of the film—fingerprints and a few strands of long hair. This evidence was forwarded to Paris police and a check revealed that the prints belonged to Mr. and Mrs. Switz, and that the hair matched hers.

The Switzes, still busy denying their guilt, were at first unmoved. Mrs. Switz insisted that, as an experienced photographer, she would do nothing so careless. Mr. Switz said he'd never seen the film.

But they were unable to explain the fingerprints away and finally confessed. This tiny blunder—which any enlightened amateur would have avoided—led to their downfall and to the arrest of twenty-three fellow conspirators.

(Continued next month)



LETTERS

Dear Al,

Does anyone currently make a small copy stand other than Minox?

A.C.L. Phoenix, AZ

Dear A.C.L.,

There may be several. The only one I'm certain is still in production is the TR-CS7 Mini Copy Stand \$52.95. Graphic Center, P.O. Box 818, Ventura, CA 93002 1-800-336-6096.

FREE CLASSIFIED

We badly need large quantities of subminiature cameras, except the common Minoltas, Yashicas. We will buy one, dozens, or hundreds, complete collections very much desired. Please contact: Reinke/International/Fotodealer, Banjo Ranch, Marshall, NC 28754 (704)-689-5338.

MICROTEC Industries is now offering 16mm unperforated film in all your favorite emulsions. For additional info (619) 292-8820.

Walgreens Coupon

Reprints from color negatives

\$1.99 10 for 3"
\$2.69 10 for 4"

35mm, 110, 126 or Disc. 10 prints from one color negative; or one each from 10. One coupon per order. No half-frames. Panoramic, mini-labs or Kodalux. Thru Tues. 3/9/93. NO LIMIT.

FOR A SECOND CONSECUTIVE MONTH Walgreens made this no limit offer. Check your Sunday newspaper.

A RECENT CALLER ASKED about the image quality of 16mm 7276 processed for speeds above ISO 50. Reversal films can be rated 10 times faster when processed for a negative, which makes film lists a quagmire to the uninitiated. 4-X Reversal is faster than 4-X Negative. Film speeds marked with a dash are below 25. Microfile is the only film you should avoid. The anti-halo backing will clog your reels.



EASTMAN KODAK 16MM BLACK AND WHITE FILMS

EMULSION	NAME	ISO	AVAILABILITY
649-F	Spectrographic	Special Purp	Disc.
1455	Cat #833-0896	50	K, J
1461	Cat #822-3232	25	K, J
2479	RAR Film	320	K
3452	Cat #812-9322	6	K, J
		D T	
7220	XT Pan Negative	25 - 20	-
7222	Double-X Negative	250 - 200	K
7224	4-X Negative	500 - 400	Disc.
7229	R P Pan Negative	80 - 64	-
7231	Plus-X Negative	80 - 64	K
7234	Fine Grain Dup Pan Neg.	-	K
7276	Plus-X Reversal	50 - 40	K, C
7277	4-X Reversal	400 - 320	Disc, B
7278	Tri-X Reversal	200 - 160	K, C
7302	Fine Grain Positive	- .5	K
7360	Direct M.P. Film	-	K
7361	B&W Reversal Print Film	-	K, C
7362	High Contrast Positive	-	K
7373	Sound Recording II	-	K
7454	Microfile	10	S
7460	Recordak	12	S

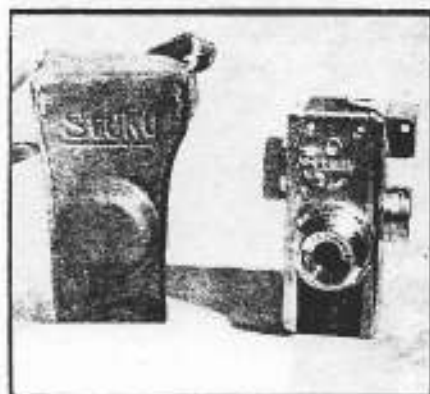
B Brent Esse (713) 528-6295

C Columbus Camera Group (614) 267-0686

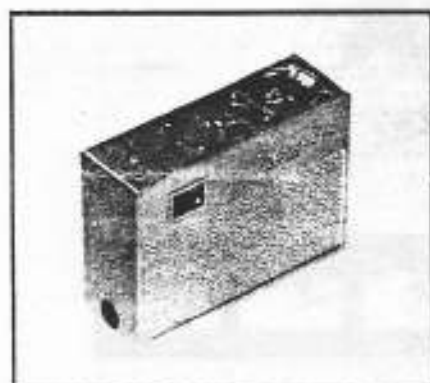
J John Lane Micrographics (713) 951-0774

K Eastman Kodak 1-800-242-2424

S Stewart Trail, (215) 474-7663



STEKY CAMERA, made in Japan and sells for \$29.95 through Wilmet Sales Corp., N.Y.C.



AMERICAN MADE Micro 16 has won a good reputation. Made by Whittaker; price—\$19.95.

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Here's a NEW Precision Camera

... that you carry like a pocket watch!

The PETAL precision camera uses for the first time in modern camera design, the Optical Principles of the human eye! Less than the size of a 50¢ cent piece, PETAL takes brilliant pictures on 6 exposures. Your Petal enlargements are over three times the size of the camera itself!

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Film: \$1.00 (Superior fine grain developing, and SIX NEG Petal enlargements)



**ONLY
\$20.00**
incl. tax

THE SUBMINIATURE TIMES QUICKFINDER 4/93

Cyclops 16mm Bino/cam	\$700 M	Minox C Black	\$579 W	Rollei A-110	\$199 W
KGB Cig Pack	1350 B	C Black	519 W	Tessina Blk w/prism	799 W
Mamiya-16 Auto	159 A	LX Black	499 W	Tessina Chrome	525 B
Minolta-16 Gold	229 W	Narciss SLR	449 W	Tessina Chrome	399 K
Minolta-16 Projector	99 A	Robot II	225 B	Vestkam	159 W
Minox Black	399 CCG	Rollei-16	109 W	Yashica Y-16	59 B

A Adorama (212) 741-0052

B Brooklyn Camera Exchange (718) 462-2892

CCG Columbus Camera Group (614) 267-0686

K KEH Camera Brokers (404) 897-2677

M Michael Weinstein (215) 654-0317

W Woodmere Camera, Inc. (516) 599-6013

SECOND SHOE DROPS QUIETLY "Shutterbug" magazine reviewed the Christie's auction again in the February '93 issue. This time giving no prices for the subminiatures we use regularly, just the specialty cameras. Whew!

The GaMi is down in price to a still high \$495 and may eventually get back to a more realistic \$300, provided there are no more auctions to drive us all to distraction.



SOME KIND SOUL logged us onto Prodigy the computer network. Thank you.

LATEST ADDITIONS to the Instruction Manual List: The Wet 10, and the Mamiya-16 Deluxe. Back issues list, free. "92 GUIDE" \$10 + 10% s&h.

HOUSTON AREA SUBMINI-HOLICS

we'll see you at the Camera

Show, March 27, Hobby Hilton. Subminiature Lives!