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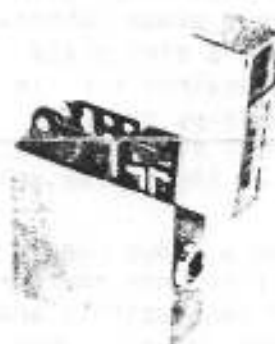
THE SUBMINIATURE TIMES

The Subminiature Times is published monthly by Doylejet, P.O. Box 60311, Houston, TX. 77205 (713) 440-4744
Supporting 110, 16mm, 9.5mm, 8mm, 4mm, 1mm, Microdot, & Electronic Still Photography.



"PORTRAIT"

Camera: Steky



Echo-8



Camera Lighter

8mm Update

As the smallest size that the average person can handle comfortably, 8mm has gone through numerous transformations to provide us with visual imagery.

For many years 8mm meant amateur movie making. If you made home movies it was done

on a fifty foot roll of 16mm film. It was flipped mid roll making two passes through the camera. What you received from the lab was a 100' x 8mm roll of color film to project on your home movie screen. With time there was Super 8 and sound, but still it was a motion picture, not hard copy.

Right now 8mm refers to camcorder tape. The 8mm movies are gone. Curiously, 8mm still photography lives.

In newsletter #8 we reviewed the Camera-Lite and the Echo-8, two products of the Suzuki Optical Works. The Echo-8 appeared in 1951. The Camera-Lite in 1955. Both used 8mm film in special cassettes to make 20 exposures. Because other tiny subminiature cameras are currently available like the Microtec Slimax-Lite (which also has a working cigarette lighter) but uses the larger Minox format, photographers who continue to use 8mm film for still photography decades after the cameras have gone out of production tend to be dedicated tinkerers.

The two 8mm cameras produce an image that measures 6 x 6mm. The normal lens would be 8.5mm in focal length. However the Echo-8 and Camera-Lite were fitted with f3.5/15mm and f8/17mm lenses respectively. If you are going to use a heavily disguised camera you certainly wouldn't put it to your eye to use the viewfinder. Capturing the image you want becomes a tricky proposition without a lot of practice. The framing problem is worsened if the camera has a narrow angle of view.

To make your cameras more versatile you might want to consider changing the lenses. And once you become committed to replacing the lens why not go for better optical quality as well?

There are diverging opinions at this point. One being, that if you do photograph your subject, you'll get a less grainy picture with a telephoto lens than with a wide angle or normal lens. Conversely, for general purpose photography or close in photos (as opposed to close-up) where crowds or children are moving around you, a wider lens will capture the image in less light with greater depth of field. Grain isn't the same problem nowadays with the better films and computer enhancement.

If you need to make the change quickly, the Edmund catalog* has a variety of micro lenses down to a 3mm focal length. The current issue lists lens #F32,586 a fully corrected achromat for \$17.95. The focal length is 9mm. The 5.5mm diameter provides a nifty f1.6 super lens for your little camera. That particular lens is sold uncoated. The anti-reflecting coating is important in photographic systems which must deal with flare and light scatter. The coating can be done by Repro Equipment Corp., 33 W. 17th St., NYC, NY. 10011. (212) 625-1900.

Your newly coated lens can be installed by Professional Camera Repair, 37 W 47th St., NYC, NY. 10036. (212) 382-1512.

Given that 8mm attracts highly intelligent problem solvers, perhaps it shouldn't be too surprising that 8mm fans are now swapping the technology for grinding their own glass optics.

The most recent (and least expensive) method we've seen so far was sent by Reginald Harrington, of New York City. It appeared in the April '91 issue of "Science Probe" magazine, reproduced here with permission. An 8mm update will be a regular feature of the newsletter as long as there is interest.

*Edmund Scientific Co., 101 E. Gloucester Pike, Barrington, NJ. 08007-1380. FAX 1-609-573-6295. Also (609) 573-6250.

LEEUWENHOEK'S LENSES: A MODERN APPROACH.

The following account does not represent the last word on the subject. There are doubtless many refinements waiting to be discovered. It can be said, however, that the procedure that follows, which resulted from considerable trial and error, will permit one to grind high-quality miniature lenses.

The first step is to mount a lens blank on the end of a section of hobby store brass tubing about a tenth of an inch (several millimeters) in diameter and about 4 inches (10 centimeters) long. Attach the lens blank to the end of this lens spindle with melted doping wax, a shellac-based material similar to sealing wax which is sold by lapidary shops.

A suitable lens blank might be any clear fragment of window glass that has been roughly shaped to the proper curvature of 0.04 inch (1 millimeter) or more in radius on one or both sides. One of the best ways to do this is to mount the glass blank on the spindle with doping wax and then run it back and forth with coarse abrasive slurry in a copper channel as the spindle is slowly rotated.

You can make a copper channel by hammering a steel wire of the proper diameter into a strip of annealed copper resting on top of a groove in a soft pine board. Plano-convex lens blanks are roughed out of tiny squares cut from window glass with a glass cutter. Mount them with wax against a tiny plate soldered like a nail head against the rim of the brass tube. Fortunately, ordinary window glass is usually flat to within a fraction of a wavelength of light over such a small area.

Make a pointed pivot from a stout needle with a blunt point. Insert it into the opposite end of the tubular lens spindle and fix it in place with solder, glue or doping wax. This pivot causes the tube to rotate automatically at an angle to the vertical axis of the rotating tubular tool. Figure 11 shows how the spindle's pivot can be seated in a small, conical indentation punched in a leaf spring such as a hacksaw blade clamped to lightly press the lens spindle against the rotating tube with a few grams of constant pressure.

Since the lens is very small, only a small amount of glass needs to be removed, and grinding occurs rapidly. Thus it is not quite so necessary to use the long series

of graded abrasives that larger lenses require. It is possible to grind and polish small lenses in a reasonable time with #120 /220 silicon carbide roughing in the channel; #600 grade silicon carbide for initial grinding against the tube; and 5 micrometer alumina or finely graded emery powder for final grinding. An oil based diamond composition should be used for final polishing. The abrasives are all prepared by mixing them into a slurry with vegetable oil.

Mount the tubular grinding tool on the shaft of a small DC hobby motor. The motor itself should be mounted on a small board with the shaft extending vertically upward. (Continued next issue.)

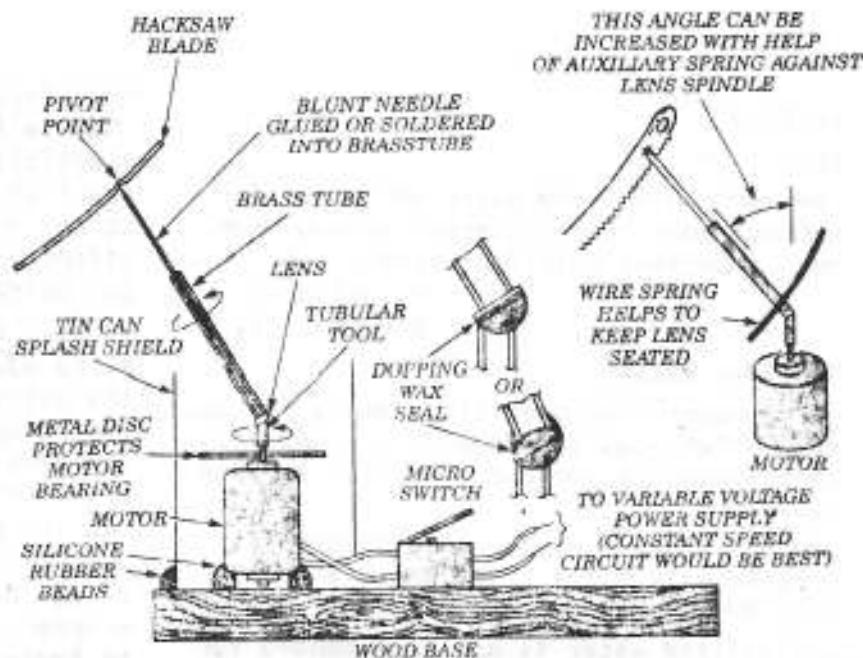


Figure 11. How to assemble and use a simple apparatus for grinding glass lenses.

THIS LITTLE 110 CAMERA.

CHESS MATCH. As benign as it may seem, the pocket camera section of your local drug store is the scene of an on-going tactical battle. At stake are the millions of dollars we spend on inexpensive 110 cameras.

The combatants are the Vivitar Corporation and Eastman Kodak. Care less who's winning. Enjoy the footwork.

Kodak always seems to start December with a feint; a decent camera and a good offer. Vivitar responds with a pre-holiday discount. Kodak then counters with a knockout blow: An offer you can't refuse, and presumably the Lion's share of the lucrative last-minute Christmas rush.

This past season, Kodak introduced the Ektralite 10 in mid December with a free processing offer. (Ad top left.) Predictably, Vivitar countered a week later by offering the 110 EF, a very similar camera, for \$9.99 if you don't buy the case.

On Christmas Eve I went down to my local drug store prepared to have my socks blown off by the latest Kodak offer. Instead, I saw the new Vivitar 110F (at right) being sold point-of-purchase for \$4.99!



Needless to say, I bought two. One will stay in the packaging as a collector's item, and I've convinced myself that I'm going to dismantle the second one to see what makes it tick.

Just what I needed. Two more cameras. And I don't even shoot 110 very much.



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UPDATES

Plenty of Yashica cassettes available dated 1973 b&W ASA 80 or Kodachrome ASA 10. I have 100 copies of "The 1992 Guide to Popular Subminiature Cameras". Selling for

\$10 each, but would swap for old manuals, instruction sheets, film stock, etc. anything that will help us to keep the subminiature format alive. (713) 443-3409.
Al Doyle

LETTERS

Dear Al,

Wouldn't distilled water be better for subminiature than filtered? Do you have any comparison prints on this?

M. Walsh
Danbury, CT.

Dear Mr. Walsh,

I've never used distilled water. Perhaps someone who has can drop us a line. Your letter made me curious enough to do some research.

Here's a direct quote from "Scientific Imaging with Kodak Films and Plates" Pub. #P-315, pp. 47.

"Distilled water is not recommended for washing photographic materials because it can cause excessive swelling of the emulsion. However, sometimes distilled water is required for mixing many processing solutions and is needed sometimes for rinsing materials that were washed in very hard water."

Here's a quote from the same publication pp. 79. "To control dirt from processing solutions and wash water use deionized water or distilled water for mixing processing solutions and wash water."

Go figure.

AL

Dear Al,

When and if the Mamiya cartridges become available how many will I be allowed to purchase?

Are back issues of the newsletter available?

I need a cadmium sulfide wafer for the light meter of a Minolta-MG. Would you know of anyone that might have pieces of an MG with a working light meter wafer? I would be more than happy to pay any reasonable price. Having the meter working would get my son (he is nine) using the camera.

I bought an original Minolta two roll developing tank and have had nothing but problems with it. The film always falls loose and does not come in contact with the developer evenly. Any suggestions? I think Seth Moore is selling Contemporary tanks, but they are not cheap. Thanks.

Patric A. Fitzpatrick
P.O. Box 81949
San Diego, CA. 92138.

Dear Patric,

Mamiya film cassettes average \$10 to \$15. Quantities are always limited. I'll offer you 5 at a time. You can always go back to the end of the list again (don't take offense) but it gives everybody a chance to get going.

I have all the back issues. I'm rescreening #1 to #32 from 50 lines to 85 lines, to get the pictures clearer. #33 to #37 are in 50 screen and available right now (\$2 each). The earlier issues will be offered as I get a chance to screen them.

Re the Minolta MG: I'll mention your request in the newsletter. Purists will cringe but I don't like to replace old equipment with more old equipment. Hop over to Radio Shack and look at their Silicon Solar Cell Cat. No. 276-124a. When you solder it keep in mind that it's stronger than the cell you're replacing so you'll be sawing off pieces until the calibration matches again. Or your film will be underexposed.

You've got to be some kind of great daddy to let your nine-year old use an MG. It takes incredible pix but some models don't focus at infinity with the newer films.

I use metal reels and the Yankee 2-roll (plastic) tank #RFM-18, Yankee Photo Products, Phoenix, AZ. 85040.

-Never had a problem with either, but I prefer plastic because that's what I started with. I guess the only way to avoid problems is to skip that "tip the tank over" stuff they tell us. Go ahead and swirl your tank. Rotate it in such a way that the film is working its way in as it slips around. Use an irregular motion so that you don't get greater density near the sprocket holes. Always pour in more developer than the film actually needs. I paid \$25 for my tank, it's worth it.

For b&w film, Minolta has Plus-X, call: (201) 825-4000. Seth Moore has color. To save time I usually buy my Kodacolor 200 in a 110 cassette, respool the film, make my exposures, then put the film in an empty 35mm film can. If you do this give your instructions at the counter and attach a note for the darkroom person. Hope this helps.

AL

FOR WATCHERS AND WATCHER WATCHERS.

The advertisements on pgs. 5-6 are for your information, not an endorsement of the products.

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Mec 16SB	239	F		EC/flash	199	WD
Micro 16 w/flash	189	F		III	149	WD
Micro 16	39	WD		IIIs	169	WD
Minolta 16	60	C		IIIs/case	199	WD
16 EE II	79	WD		LX blk/case	529	WD
16 MG	69	F		LX	479	WD
16 P	59	WD		LX	459	WD
16 P	59	F		LX gold	1450	G
16 P	25	CC		ML	229	WD
110 Z	225	B		PE	100	WD
110 Z	89	WD	Pentax	110 3/lenses	289	BK
Minox 1st B	179	WD		110 3/lenses	249	BK
1st B	169	WD		110 2/lenses	249	BK
1st B Black	399	WD	Pentax	110	189	BK
2nd B	199	WD	Rollei E-110		339	F
2nd B	189	WD	Steky III w/tele		149	WD
2nd B	179	WD	III		79	WD
2nd B	169	WD	Yashica Atoron		125	C
B	169	F	Atoron		79	F
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B Bergen County Camera, 270 Westwood Ave., Westwood, NJ. 07675. (201) 664-4113
 BK Brooklyn Camera, 549 E. 26th St., Brooklyn, NY. 11210. (718) 462-2892
 C Cambridge Camera, 7th Ave & 13th St., NYC, NY 10011. (212) 675-8600
 CC Columbus Camera Group, 55 E. Blake, Columbus, OH. 43202. (614) 267-0686
 F Foto Cell, 49 W. 23rd St., NYC, NY. 10010. (212) 924-7474
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