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THE SUBMINIATURE TIMES

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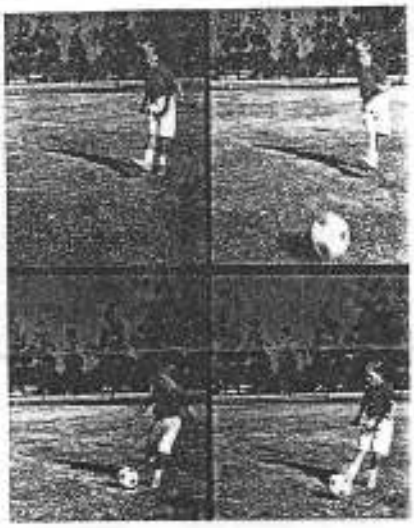
Supporting 110, 17.5mm, 16mm, 9.5mm, 8mm, 4mm, 1mm, Micropot, and Electronic Still Photography.



1/3" Color CCD Camera
Features 580-line resolution

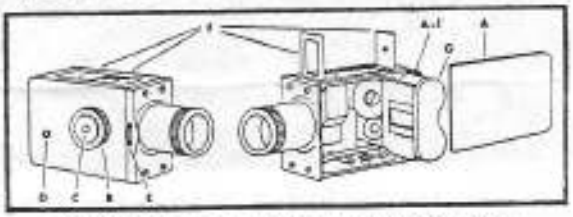
Updates

COLLECTORS report strange effect with the two-speed Action Tracker. The slow speed is too slow to stop action. The fast speed is so fast, 4 frames can look identical.

NARCISS 16MM SLRs now have 1000mm and 500mm MTO Mirror Lenses which are far shorter and cheaper than the sedan priced 120mm GaMi 8x telephotos. Russian dealers may ask for cash in advance!

B&W 110 PROCESSING Strophall Photo, Box 1942, Greeley, CO. 80632.

PRICE NO GUIDE to current Collectibles: A Vivitar 742XL is $10. A Tynar is now $40. The Vivitar is a camera.



COMPACT AND MASTERFULLY CONSTRUCTED

The Tynar camera is manufactured by expert craftsmen to give you the finest in low-priced miniature camera field. Diagram above shows intricate construction of camera. A Sliding Cover, A1 Magazine Aperture, B Film Control Knob, C Shutter-release button, D Counter, E Lens aperture adjustment, F View Finder, G Film magazine.

NATIONALLY ADVERTISED TO SELL AT $7.95
now offered at the special introductory sale price of

$4.95 with lifetime supply of film

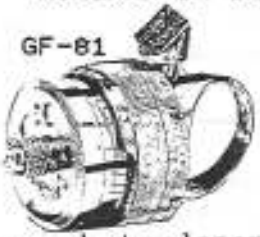
first roll of free lifetime supply enclosed with camera.

- 16mm magazine miniature camera takes 14 exposures
- Features Tynar 16.3 Achromatic lens
- Takes both color and Black & White film

DIZZYING FLOOD of same size same price cameras from Samsung lately. BW-410EA . has high resolution output, professional performance. Samsung Opto-Electronics, Secaucus, NJ 07094 (201) 902-0347.

P3 1020

RING/WATCH CAM FILM PROCESSING



An interesting variation on the little processing tank for ring/watch discs (ST #49) was sent to us recently.

Rather than use a normal developer and a teacup cover, use a monobath and the same cap that comes with the 35mm film can. Fill to the brim with solution, dunk the film first to moisten it completely. Then put the disk on the pencil point, and attach the cap.

In room light, wipe away any excess liquid. The 'tank' can now be carried in your pocket while processing takes place. In 4 minutes or so, discard the monobath, and replace with water.

Air dry when convenient, emulsion side down.

Here are some monobath formulas submitted by Deborah Holland...

Monobaths and In-Cassette Processing

By Steve Anchell

Recently I have become interested in using monobaths to develop film. A monobath is a single solution that combines the actions of development and fixation. The ability to develop and fix film in one operation is appealing. It eliminates the need for separate stop and fixing baths and hardening solutions. Moreover, it does not require precise timing of development and decreases the effect of variations in agitation, temperature and other processing conditions.

Solutions of this type were first proposed in 1889, but only relatively recently have the difficulties associated with their formulation been overcome. The main problem has been the loss of emulsion speed which results when the exposed silver halide is dissolved by the fixation process before development can take place. For a monobath to work, it must combine a developer which acts so quickly that development is finished before the fixation starts. But even after fixing has begun, development can be further assisted by a process of physical development that takes place concurrently.

Additional problems of the monobath method have included unsatisfactory gradation and maximum density, and a tendency to produce unacceptable levels of base fog. Storage and exhaustion properties have also tended to be poorer than with conventional developers that produce similar results.

To prevent the above drawbacks, developing agents of high activity and short induction periods are required. Phenidone and hydroquinone are suitable monobath developing agents. A combination of these two generally leads to higher speed, improved contrast and maximum density. In the 1950s several Phenidone-hydroquinone (PH) formulas were devised that are capable of producing results practically identical with those obtainable through conventional processing.

In devising a monobath, several points must be considered. The first is the concentration of the monobath developer. For acceptable results, the developer concentration has to be increased an average of 5 times. At the same time the pH has to be raised to pH 11-12 while the hypo content must be reduced.

To increase the stability and exhaustion rates until they are equal to conventional developers, an appropriate buffer must be used. In Formula #1, potassium alum is added. The alum also helps prevent excessive swelling of the gelatin, which could otherwise result in reticulation.

The gamma value, or the target point of development, is determined by the composition of the monobath and cannot be varied by change in dilution, time or temperature of development. However, it is possible to obtain a wide gamma range without loss of film speed by simply varying the hypo content. In Formula #2, the use of 70 to 125 grams of hypo is recommended to increase or decrease the gamma of the film. Similar variations in the amount of hypo can be made to the other formulas.

The speed of development can usually be controlled by the alkali content. Sodium hydroxide is used in the four formulas given here. The rate of fixation is also influenced by the amount of hypo.

Working with these two variables, monobath formulas can be modified for different films. In fact, you may want to experiment and create a specially balanced formula for each group of similar emulsions (i.e., T-grain, conventional films, etc.).

The following variations in monobath formulation and processing conditions, summarized by G. Haist, may be used to modify the results:

To increase contrast and emulsion speed:

1. Raise the pH.
2. Increase the concentration of the developing agent.
3. Reduce the concentration of the fixing agent.

"Saint Cecilia Church Detail"; 120 Kodak T-Max 400, developed in H.S. Keelan monobath, formula #1 [straight, unmanipulated print made on Oriental Select VC Plus, Grade 1; developed in Ethol LPD 1:4; camera: Seagull 6x6cm TLR]

4. Raise the processing temperature.
5. For more contrast increase the concentration of hydroquinone.
6. For more speed, increase the concentration of Phenidone.

To reduce contrast or emulsion speed:
1. Lower the pH.
2. Increase the concentration of the fixing agent.
3. Increase the salt content or viscosity.
4. Use more vigorous agitation, increasing the rate of fixation (may not be possible with in-cassette processing).

The following formulas will get you started with monobaths. Use your normal agitation method (e.g., agitate continuously for the first 30 seconds and then every 30 seconds thereafter.) At 75°F the film should be fully developed in less than three minutes, and will develop no further.

However, due to the relatively low concentration of hypo, fixing usually takes from 4 to 7 minutes. If you remove the film from the solution prematurely, it will have a milky-white appearance. Don't panic. Simply place the film back in the solution, continue agitating as you would for normal fixation, and the fixing process will continue.

Formulas 1 through 3 use Phenidone and hydroquinone as developing agents. Phenidone is often difficult to dissolve in water. With these formulas, using sodium hydroxide as the alkali, use the following procedure.

Start with water at room temperature and dissolve the sulfite (do not use water over 75°F, as the hydroxide may heat up and spatter). After the addition of the Phenidone, add a pinch of hydroquinone followed by the sodium hydroxide. The Phenidone will dissolve completely; the small amount of hydroquinone will help prevent oxidation of the Phenidone. Then add the remainder of the hydroquinone and other chemicals in the order given. Although the monobath method can be used in a tray or conventional processing tank, combined with in-cassette processing (see below), the photographer does not require a darkroom, changing bag or developing tank.

In-Cassette Processing

PROCESSING 35MM FILM INSIDE THE METAL cassette it comes in is an interesting way to develop film. The technique is simple and was originally described by Eastman Kodak. It should only be used with a 20- to 24-exposure roll, as a 36-exposure roll does not have enough room for the solution to flow evenly.

Other than the film, all that is needed is a glass or beaker for the monobath and washing, latex or rubber gloves.

Monobath Formulas

*Formula #1**

Water at room temperature—16 oz. or 500 ml
Sodium sulfite, anhydrous—1 oz. 292 grains or 50.0 gm
Phenidone—146 grains or 10.0 gm
Hydroquinone—½ oz. or 15.0 gm
Sodium thiosulfate (hypo)—3 oz. 292 grains or 110.0 gm
Sodium hydroxide—263 grains or 18.0 gm
Potassium alum—146 grains or 10.0 gm
Water to make—32 oz. or 1.0 Liter

*H.S. Keelan (published in *Photo Science Engineering* 5, 144, 1957)

Dissolve the potassium alum separately in 8 ounces of hot water at 125-160°F. Add it to the formula, then bring the total volume to 1 liter.

*Formula #2**

Water at room temperature—24 oz. or 750.0 ml
Sodium sulfite, anhydrous—1 oz. 292 grains or 50.0 gm
Phenidone—14.6 grains or 1.0 gm
Hydroquinone—175 grains or 12.0 gm
Hypo—2¼-4 oz. or 70-125 gm
Sodium hydroxide—146 grains or 10.0 gm
Water to make—32 oz. or 1.0 Liter

*G.W. Crawley (*British Journal of Photography Annual*, 1974)

*Formula #3**

Water at room temperature—24 oz. or 750.0 ml
Sodium sulfite, anhydrous—1 oz. 292 grains or 50.0 gm
Phenidone—58 grains or 4.0 gm
Hydroquinone—175 grains or 12.0 gm
Hypo—3 oz. 292 grains or 110.0 gm
Sodium hydroxide—58 grains or 4.0 gm
Water to make—32 oz. or 1.0 Liter

*Kodak Research Lab (*Phot. Sc. Eng.* 5, 198, 1961)

*Formula #4**

This formula uses metol instead of Phenidone. To help preserve the metol, add a pinch of the sodium sulfite first, then the metol, then the remainder of the sulfite. Be certain each ingredient dissolves completely before adding the next.

Solution A

Water at room temperature—16 oz. or 500.0 ml
Metol—188 grains or 12.9 gm
Sodium sulfite, anhydrous—2 oz. 159 grains or 70.9 gm
Hydroquinone—375 grains or 25.7 gm
Hypo—6 oz. or 180.0 gm
Sodium hydroxide—375 grains or 25.7 gm

Solution B

Water at 125°F—3 oz. or 100.0 ml
Benzotriazole—146 grains or 10.0 gm
Add Solution B to Solution A
Water to make—32 oz. or 1.0 Liter

NOTE: It is necessary to divide this formula as benzotriazole does not dissolve readily in cold water.

*C. Orlando (pub. *Phot. Sc. Eng.* 2, 142, 1958)

INDESTRUCTIBLE ELECTRONICS

This new catalog describes Everswitch USA's INDESTRUCTIBLE switches, keypads, keyboards, and control panels. The company's products utilize a unique, patented piezo-electric design featuring totally sealed, one-piece, solid-metal construction. Because there are no moving parts and no mechanical fatigue, the life expectancy is virtually unlimited. Everswitch products are temperature-proof, water-proof, chemical-proof, vandal-proof, and explosion-proof. Let Everswitch USA introduce you to the "World of INDESTRUCTIBLE Electronics." Call today!

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THE DAYLAB II SLIDE PRINTER FROM POLAROID

Artistic and creative expression just got easier with the Daylab II Multi-Format Slide Printer.

NEW

Previewing, cropping, enlarging or reducing your 35mm slide to create beautiful customized prints is easy with the Daylab II Slide Printer. The Daylab II allows you to:

- Preview and adjust the image area before exposure so that the picture you create meets your specifications.
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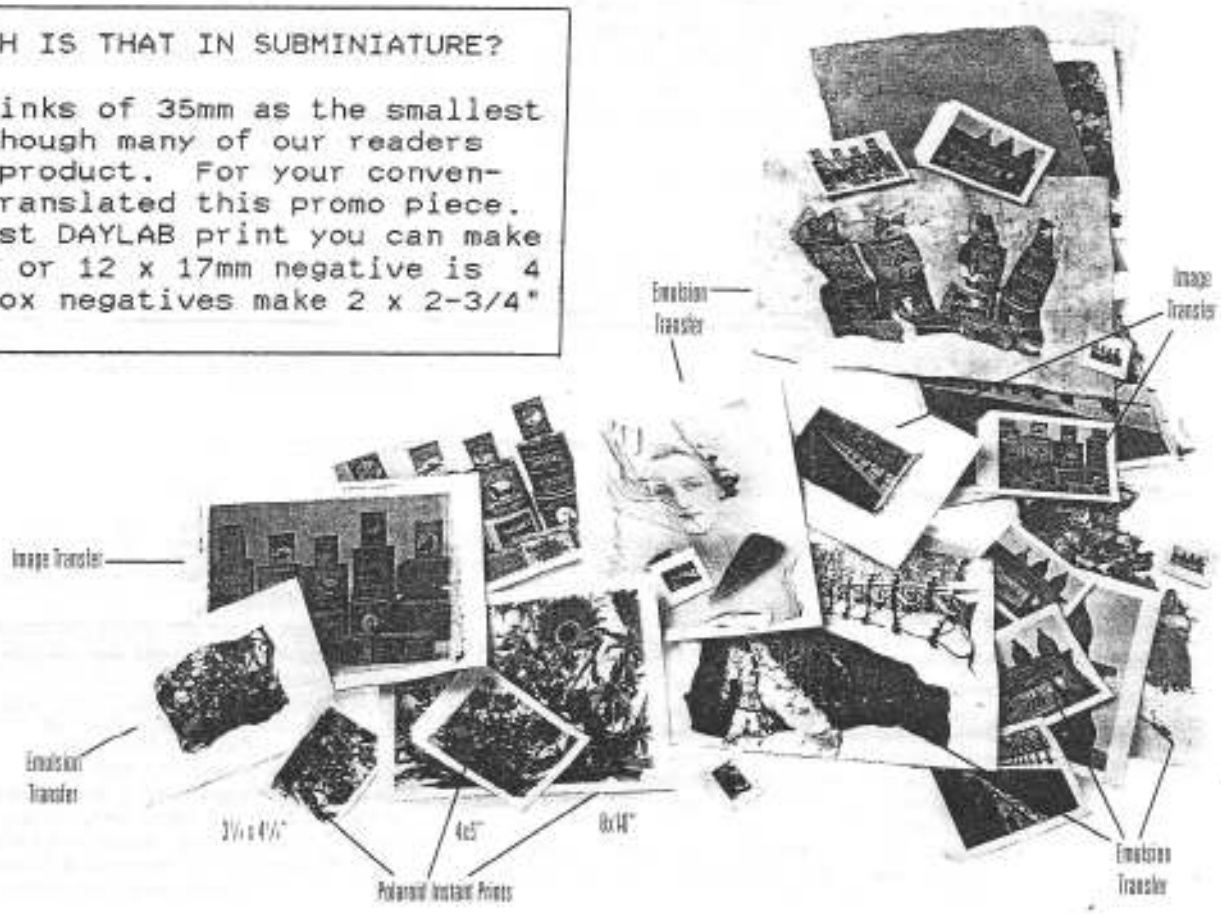
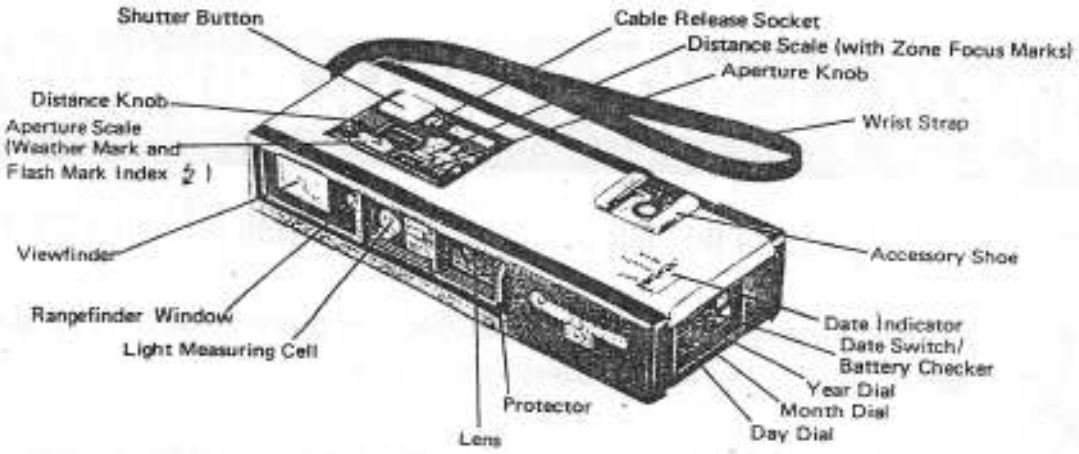
Because of its modular design, the basic Daylab II is equipped with the 3¼ x 4¼" film base system and as your needs grow, the system can grow with you—just add on the other system film bases when you're ready. The basic Daylab II is affordable, starting at a suggested list price of $325.00, and it uses the same enlarging head for all the other film systems.

HOW MUCH IS THAT IN SUBMINIATURE?

DAYLAB thinks of 35mm as the smallest format although many of our readers use their product. For your convenience we translated this promo piece. The largest DAYLAB print you can make from a 110 or 12 x 17mm negative is 4 x 5". Minox negatives make 2 x 2-3/4" prints.





Canon 110 ED 20

EDITOR'S JOURNAL:

CLOSE BUT NO CIGARS

In a recent discussion of 'ultimate' cameras, a collector friend noted with some ire that more than any other format, subminiature cameras always seem to fall short of perfection by some obvious feature. For example, he'd give anything for a Minox that could take 16mm film, or a GaMi with a real light meter.

He hoped that one day he'd be able to tour the boardrooms of all the major camera manufacturers and thunk them on the head before they could put another dinosaur on the market.

I agreed wholeheartedly, and promised that in an upcoming newsletter I'd include details on my favorite candidate for 'alltime almost', the Canon 110 ED 20.

A pocketable camera with a five element f/2 lens, a coupled rangefinder, electronic meter, and shutter speeds from 2 secs. to 1/1000, makes you wonder why the designers didn't stop right there.

This writer wouldn't look at another camera for life.

But there are marketing committees to appease. Canon put in an accessory shoe for flash, and that blessed 110 cassette. To top it off they included a date imprinter that stops at 1987.

Don't laugh.

I once spent an entire weekend trying to figure out how to reset the imprinter to put current dates on a negative. I never got it.

What galls me most is that I know if I ever see another Canon 110 ED 20 at a camera show, I'll buy it without thinking twice.

So I'd like to accompany my friend on his tour of the boardrooms. I'll carry the baseball bat.

Subminiature lives!

Al D.

Specifications

Lens: Canon 26mm f/2 lens, with 5 elements in 4 groups.

Focusing: Rectilinear movement of the lens coupled to double image rangefinder.

EE Coupling Range: EV 1 (f/2, 2 sec.) to EV 18 (f/16, 1/1000 sec.)

Distance Scale:

ft.	2	3	10	30	∞
m	0.6	1	3	10	

Zone marks; face, group, mountain

Shutter: Electronic shutter; 2 sec. -1/1000 sec., safety lock mechanism. Mechanical shutter; 1/125 sec., operated only when the battery chamber cover is removed.

Automatic Flash Mechanism: Automatic flash photography with Canolite ED. The shutter speed is set at 1/30 sec.

Aperture Scale: f/2 f/4 f/8 f/16

Power Source: 6V silver oxide battery, Eveready 544 or Mallory PX28.

Date Mechanism: Date imprinting mechanism. Date is set with the date switch and dials on the left side of the camera.

Date Indications: Year; 0, 1-9, 77-87 and ■ (blank)
Month; 0, 1-12 and ■
Day; 0, 1-31 and ■

Film Speed: ASA 80 and ASA 400.

Dimensions and Weight: 142 x 55.5 x 28.8mm (5-9/16" x 2-3/16" x 1-1/8"), 340g (12 ozs.)

Accessories: Canolite ED, Speedlite Extender, Soft Case, Releases 30, 50, Selftimer 8, Close-up Lens 110.

Subject to change without notice.