

# RECIPES FOR DISASTER

a handcrafted film  
cookbooklet

## Introduction from a New Orleans Exile

November 16<sup>th</sup>, 2005

Since moving to New Orleans five years ago, my husband Paul and I had become part of a fun, progressive, and artistic community. I never expected that it could all disappear so quickly. When Hurricane Katrina hit, our friends were scattered everywhere. It has been a strange, surreal time. But people are already coming together in surprising ways to help out and rebuild. This new edition of *Recipes for Disaster* is a case in point.

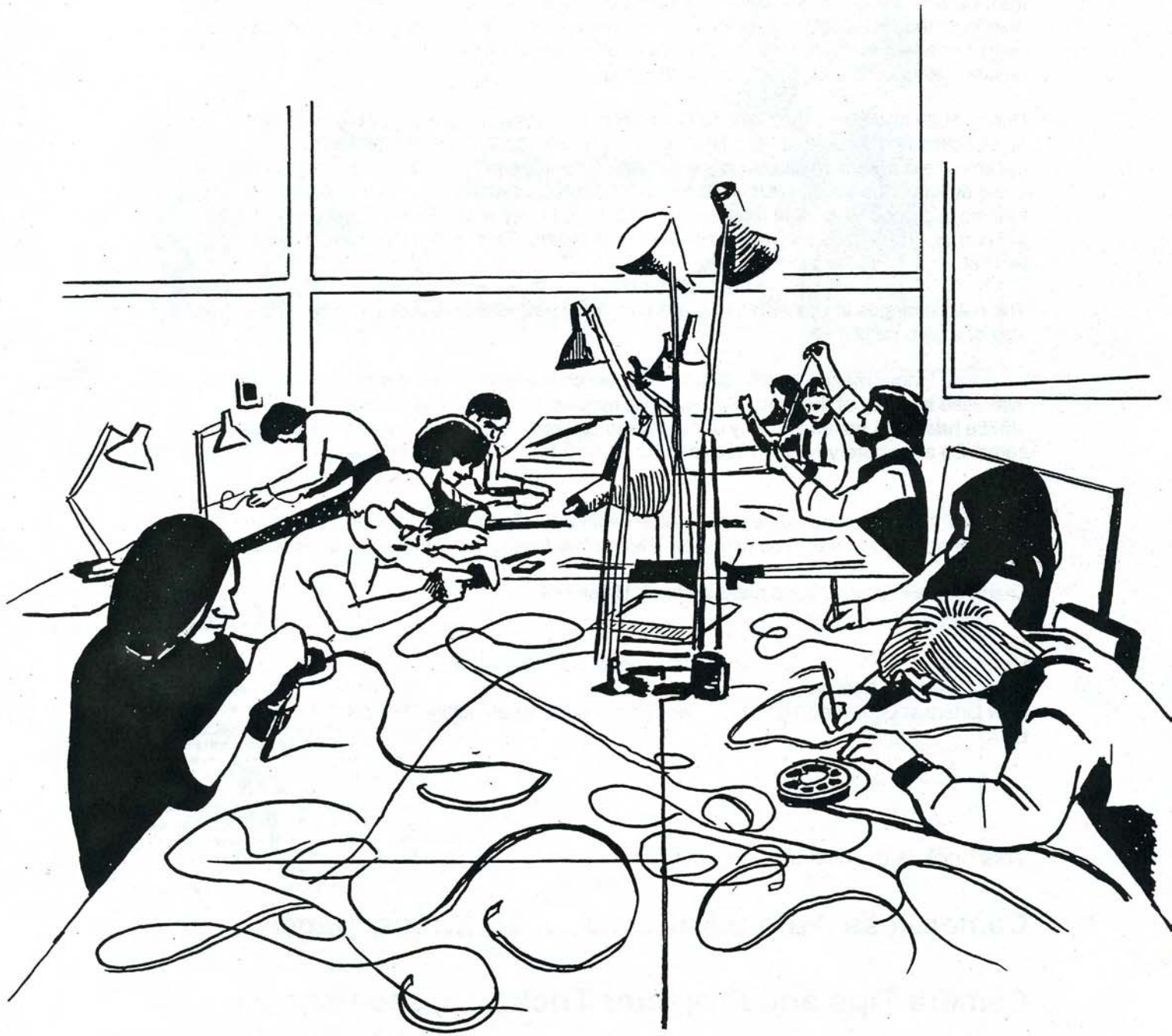
Paul and I evacuated the day before the hurricane, with our pet pig in the front seat and our ten-month-old son in the back. We safely landed at my parents' house in Columbia, South Carolina. We watched New Orleans on television, a city in big trouble, left without help for far too long. Sixteen days later, Paul went back to New Orleans. He drove through checkpoints, and waded through flooded streets with the menacing sound of helicopters overhead. He rescued our cats, thin, filthy, and wet but alive. It looked like a tornado had swept through each room. Only four feet of water inside was enough to topple shelves, overturn the refrigerator, fill up my plastic bins of films, and mangle musical instruments into pieces.

We returned to New Orleans around Halloween to clean out our house. I discovered that my boxes of *Recipes for Disaster* did not make it and neither did the original. I could not even get my swollen files out of the moldy file cabinets. Many of my films were terribly messed up, gone to pinks and reds with the edges eaten away. I am an experimental filmmaker and I often work with old and decayed films. So even though Katrina caused so much damage, I hope to include some of these flooded images in my future films.

These days in New Orleans, living is tougher, with unknown toxins everywhere, failing electricity and bad smells all over. Our friends have ruined homes, missing pets, houses full of rescued dogs, parents who lost their homes, and refrigerators full of maggots. Nevertheless, people are in especially good spirits, happy to see their fellow exiles again. The cheap living in New Orleans is even cheaper, with the free Red Cross supplies. In the few days we were in New Orleans, there was an alternative book fair, several parades, a punk rock fashion show, and great hurricane costumes on Halloween night. We were surprised to see the underground community of New Orleans, coming back in style.

As I salvaged my wet and moldy films, I called both Rob Butterworth and Alfonso to ask them if they thought cleaning them in dishwashing soap would be okay. Alfonso said he wanted to publish a special post hurricane edition of *Recipes for Disaster*. When I first made this book, the whole point was to bring together the scattered community of artists making handmade films. These folks are creative pioneers, inventing their own recipes and methods. Hundreds more have written me for their own copy of *Recipes for Disaster*, and so this community quietly grows. Now this DIY film community is coming to the rescue. This is a great help and gets this information out there while I figure out what to do next. Thanks so much, Alfonso.

Helen Hill,  
still at [neworleanshelen@yahoo.com](mailto:neworleanshelen@yahoo.com)  
post-Katrina, temporarily at parents' home  
c/o Becky Lewis  
1432 Medway Road  
Columbia, South Carolina 29205  
803-343-6247



## Introduction and Contents

WELCOME to the 2004 (slightly revised) Recipes for Disaster.

This is a collection of handcrafted film recipes from 37 fellow experimental filmmakers, mostly from Canada but also from all over. These generous folks donated their blueprints, ideas, drawings and technical information for only free copies of this book and a chance to read everyone else's contributions. Thank you to all these fine filmmakers. And thank you to my husband Paul Gailiunas, who helped all along.

During 1999 and 2000, the Canada Council for the Arts gave me a grant to learn about handcrafted film. I traveled from Halifax, Nova Scotia to Vancouver, Toronto and Calgary. I met dozens of experimental filmmakers who shared their techniques with me. I thought the least I could do would be to gather this scattered information together. Thank you Canada Council, for funding this good year. And thank you to Laura and Kelly at the Splice This! Super 8 Film Festival in Toronto. They gave me what I needed—a deadline. This book was launched at the 2001 festival.

The main changes in this new version are my new permanent address in New Orleans and the loss of a favorite film stock.

Kodak no longer makes the film stock 7378, which is a high contrast black and white film used in many of these handprocessing recipes. However, the film stock called 3378e has been tested in many underground filmmaking labs and seems to work just the same. So anywhere you see 7378 mentioned, you may use 3378e instead.



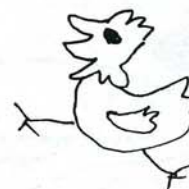
Please do send postcards or letters with any of your own discoveries. I'll keep them together and try to be a good resource. Please feel free to call if you have questions.

Thank you and please keep making films! Helen Hill

*Helen Hill*

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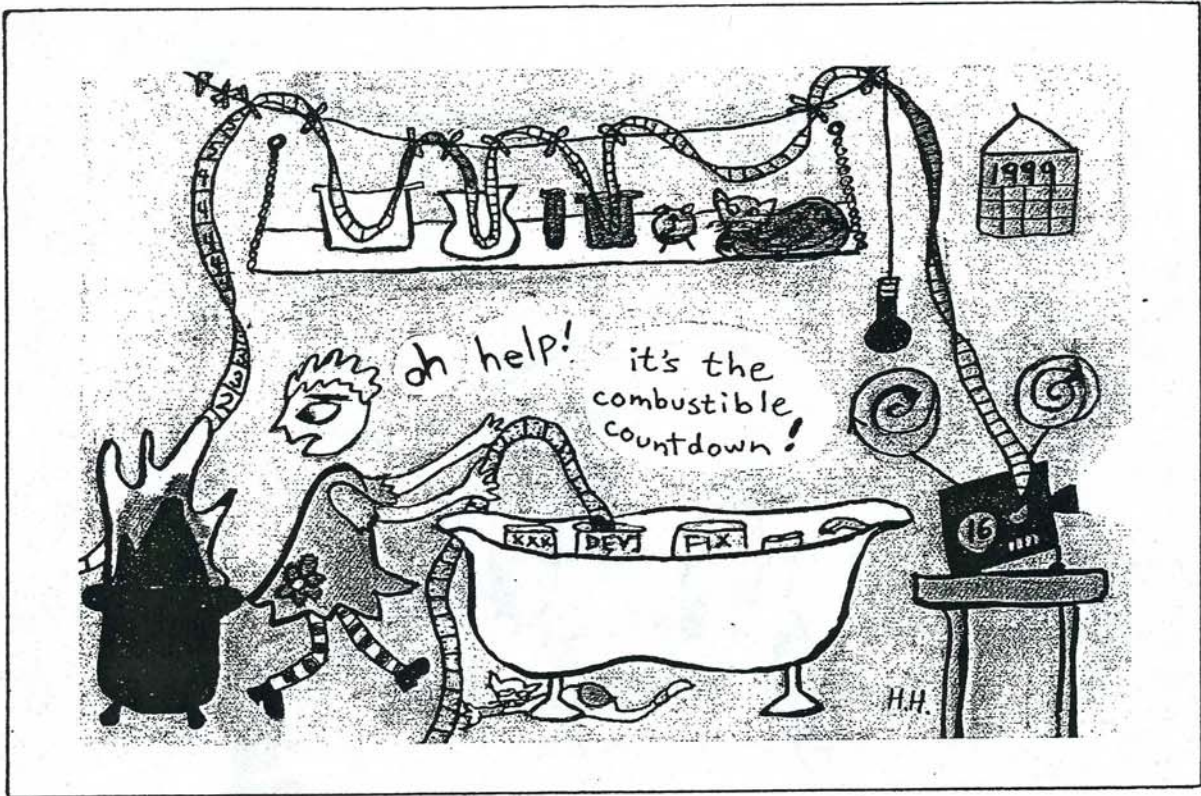


This book is divided into 3 sections:

**Cameraless Animation.....see page 6**

**Camera Tips and Projector Tricks.....see page 24**

**Handprocessing Film Recipes.....see page 50**



the original postcard  
call for contributions

**The Combustible Countdown !**  
**a cross-Canada handcrafted cinema tour**  
what I mean by handcrafted cinema  
 handprocessing, tinting and toning 8mm, super8mm  
 or 16mm movie films and cameraless animation  
 (creating or manipulating images frame by frame by  
 painting and scratching directly onto film)

a few reasons to use these techniques  
 (hands-on approach, low cost, fast results)

It's fun to handle film as a celluloid  
 canvas rather than as a fragile carrier of images,  
 only to be handled by lab technicians. you can add  
 to your film after it comes back from the lab or  
 avoid the lab altogether. You can make an animated  
 film without a camera. While new media moves away  
 from film, you can move *closer* to film, learning  
 more about its composition and its possibilities.  
 You can experiment and create the most beautiful  
 images ever.

What's the combustible countdown?

Throughout 1999 and 2000, I'll travel from  
 Halifax and learn handcrafted techniques from  
 workshops and artists in Toronto, Calgary, and  
 Vancouver. I'll also be collecting any technical  
 or aesthetic notes on handcrafted cinema from  
 filmmakers who'd like to share their work and help  
 to gather all the scattered information into a  
 sourcebook. Wherever you are, if you would like to  
 contribute to this sourcebook or eventually have  
 your own copy, please tell me right away!

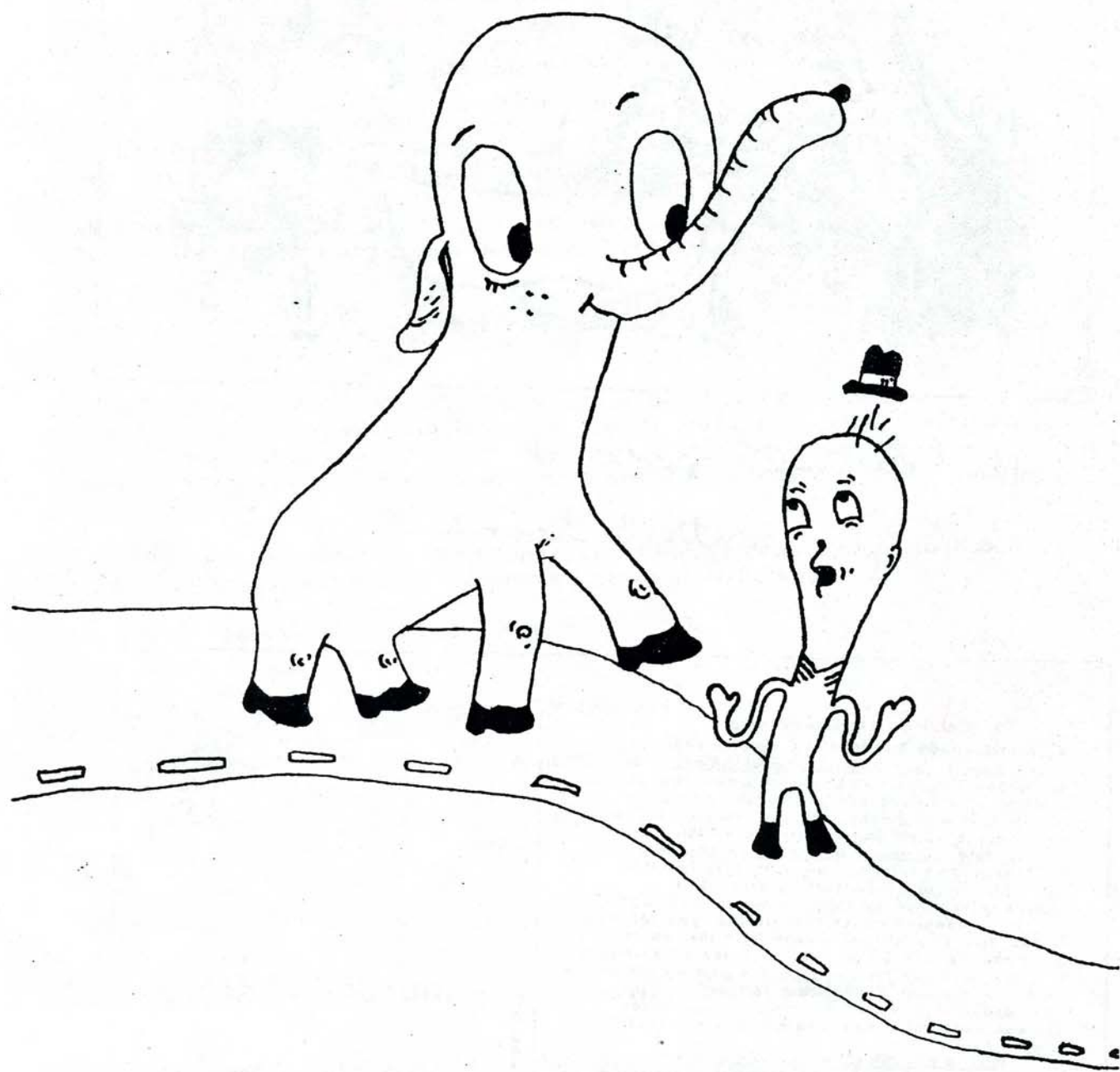
THANKYOU Canada Council for the Arts !!!



Helen Hill



Helen  
Hill



## II. Cameraless Animation

### LIST OF CREDITS

- page
- 5 Amy Lockhart, Elephant and Guy on Film, Vancouver
  - 7 Basic Guide to Drawing on Film, Helen Hill, Halifax/New Orleans
  - 8 Heather Harkins, Glitter Tips, Halifax
  - 9 Lisa Morse, Letra-Set on Film, Halifax
  - 10 Richard Reeves, Canned Goods and Left-overs, Pender Island, BC
  - 11-12 Devon Damonte, Photocopy onto Film, Massachusetts
  - 12 Rock Ross, Handmade Culture: Bread Labels, San Francisco
  - 13-17 Carol Beecher and Kevin D. A. Kurytnik,  
Advanced Cameraless, Calgary (Quickdraw Animation Society)
  - 18 Don Filipchuk, Scratching Cartoons, Calgary (QAS)
  - 19-20 Jen Proctor, Grocery List Film, Austin, Texas
  - 21 Naomi Uman, Bleach and Ink Work, California
  - 22 Adam T, Mr. Clean Film, Toronto/Vancouver
  - 22 Luke Jaeger, Fantastik Tip, , Massachusetts

page 2 drawing by Paul Gailiunas



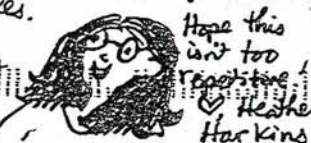
a still from Heather's animated film about Zsa Zsa,

→ Tips for Handcrafting Film! ITD 010606 16:39

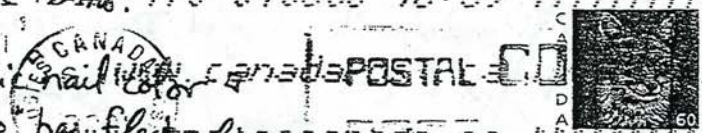
Wet 'n' Wild crystal nail color #477A, entitled "Psycho" transparent coloured plastic. When this polish is painted on clear leader, the colour of the plastic will project on screen. Many of the glitter nail polishes, like Lip Smackers' Jewel Nails have opaque flecks in interesting shapes that project as black forms on-screen.

- Before investing in fancy tinting ink for your film, try running a wide-tip permanent marker (in a light colour) over your film. This can give a brighter wash of pigment without streaks or puddles.

- if possible, try to rustle up some friends to help test different techniques and share ideas. Have fun!



Hope this isn't too repetitive!  
Heather  
Harkins



Helen Hill  
P.O. BOX 4398  
NEW ORLEANS, LA  
70178-4398  
U.S.A.

Photo: Zsa Zsa's final husband by Mike Graham



# Cameraless Animation

BASIC TIPS!

Get clear leader from an editing supply shop, or find old film and dip in household bleach and water until the images fade all away.

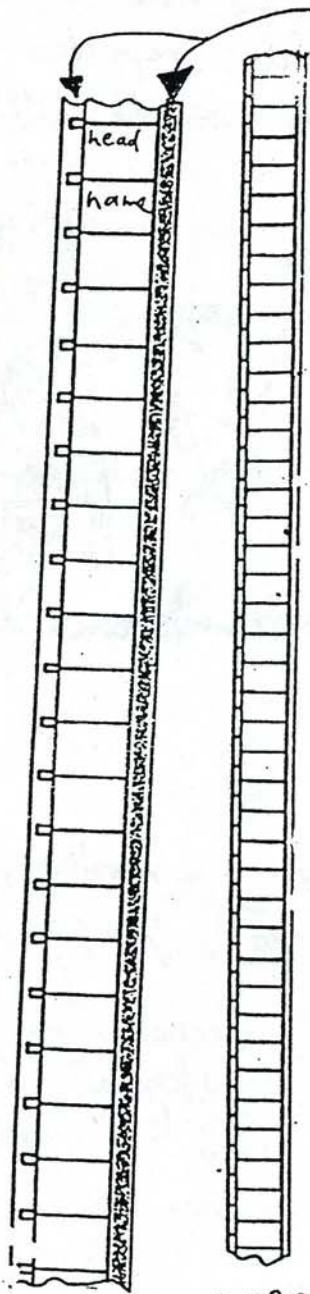
Or scratch into coated films.

Use permanent markers (not water based.)

① Keep the sprocket holes on the left and work from the top down (otherwise your doodles may be backwards or upside down).

② There are 24 frames in a second.

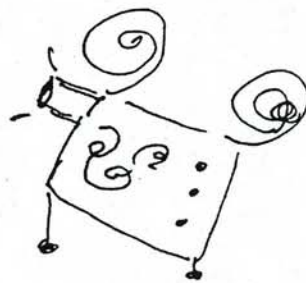
③ Keep checking your film by holding it up to the light or a window. Anything opaque will project as solid black because it will block the light from the projector).



④ notice the frame lines

soundtrack area  
④ Note the two margins (for sprocket holes and a soundtrack). A projector will not project the area reserved for a soundtrack (even on a clear film without a soundtrack!).

⑤ WATCH OUT!!  
Anything that peels off, flakes off or rubs off after it dries MAY WRECK YOUR PROJECTOR!

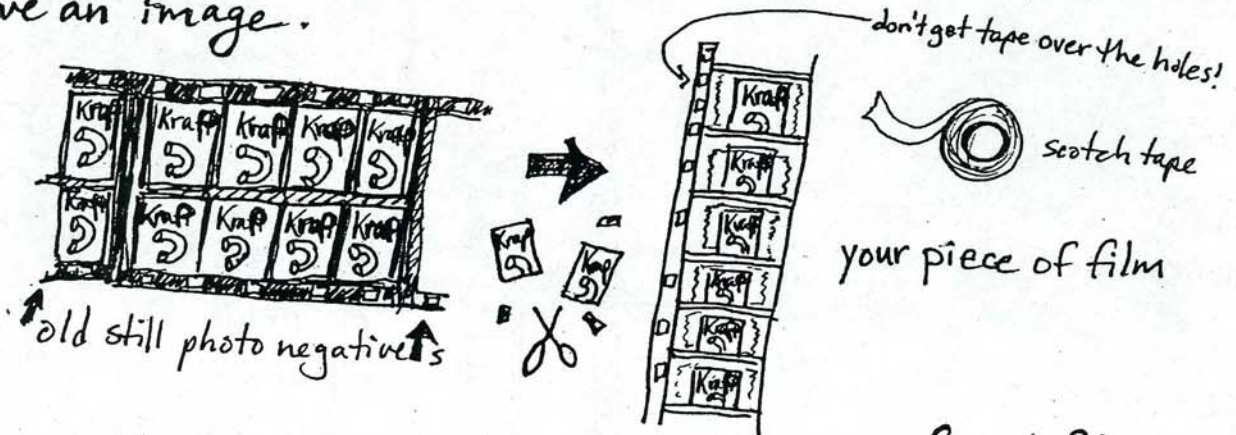


← you'll need a working projector to see it BIG

Helen Hill

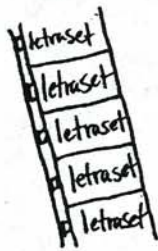
# SOME WAYS TO MAKE FILM

1. Taping still or moving camera negatives, or transparencies to film. Old still camera negatives with enough repeated elements are useful. For instance, I had still-negatives from photos of grocery store aisles, full of repeated labels. If you have about 24 of them (for the 24 frames/sec.) you have an image.



You could photo-copy onto transparencies, use found film, x-rays, slides, etc.

2. Letra-set. (or more!)  
I love letra-set. Applying a word in letra-set 24 times is painstaking, but looks great. You can find tiny pt. letters.



↓  
especially when you see it blown up on screen! Every little crack & chip magnified.

— Lisa Morse

morse1c@hotmail.com



## canned goods and left-overs

if you have been hand processing some super 8 or 16mm movie film and for some reason, the film has turned out either partially or all black or clear, with no pictures, then here is a way to cook up a real stir fry of images from left overs. try scratching into the emulsion with utensils like steelwool, exacto blades, even sandpapers, to get a variety of textures.

then use permanent film markers, transparent inks applied with brush, sponge or airbrush colours directly on the film surface.

household bleach mixed with just a little water works well on black film and reacts like a developer for some wild abstract images. (apply with q-tips)

when dry, the finished film or loop is ready for the projector, and a feast for the eyes as the images become alive and boiling.

bon-appetite and enjoy the splice of life.

r r r

From: "richard r. reeves" <flickerfilms@hotmail.com>

From: Christine Panushka

Hello Helen,  
This sounds like a fun project.  
First thing to remember, whatever material is applied to the film must be flexible and light must be able to pass through it. In other words, unless the filmmaker desires a black or darkly muddy image, it is best not to use opaque paints such as acrylics.  
Dr. Martin dyes work well, as do Lumicolor Permanent ink pens.  
One can test the flexibility of a medium by applying it to the leader. Then roll the film into a loop and vigorously whip it back and forth. If the medium flakes off, don't use it.

For scratching on Black leader:  
etching needles  
push pins  
sand paper over raised surfaces

Good luck,  
Christine

Christine is a professor at  
USC in California.

Photocopy onto film

Ingredients:

- Photocopier that makes transparencies. Generally best to have after hours access.
- Supply of clear film leader, (I've used 16mm and 35mm, theoretically 8mm would work too)
- Blank paper, 11x17(tabloid) or 8.5x14 (ledger) gives most mileage
- Clear thin tape in dispenser
- Scissors
- Glue stick
- Magnifying Glass (optional)
- Screwdriver (just in case)

This technique is based on the principle that if a copier can copy onto transparencies, it can copy onto film. It can be used for registered imagery such as titles and animating movement, and for abstract frameless effects. Here's a method for the registered kind - experiment for other stuff.

1. Cut a length of clear film, and tape both ends down long ways on a sheet of blank paper. This will be the template.
2. Take multiple copies of your source material, titles or images, and reduce down to fit into frame size.
3. Cut your source material into frame size bits, and working on a flat surface, glue stick the bits onto the film, paying close attention to framelines and registering each successive image bit. If you want the imagery or titles to move, this is where you'll animate it with slight changes in position on each frame placement. Leave about two inches at top and bottom of film strip blank so there's room later.
4. After glue dries, place this template face down on copier glass. Position filmstrip fairly near left or right edge of sheet size.
5. Run one copy on blank paper.
6. Cut the clear film into a supply of strips almost as long as the paper.
7. Then, without moving the template on the glass, use the one copy as a placement guide to position a piece of clear film so frame registers over image. Tape top and bottom edge of clear film smooth-edgedly.
8. Remembering the orientation (which end goes in first), set this sheet with blank film in the side hand sheet feeder.
9. Press start/ copy, and out comes the finished strip with copy image. Carefully peel off the finished strip and reuse the copy as guide for next strip (can usually use the copy 3-6 times before it gets too wrinkly, then run another copy guide).
10. Repeat this until there's an adequate amount of film, then splice it all back together, matching ends for smoothest registration.

**\*IMPORTANT NOTE** - avoid the rollers. When feeding the paper/ film sandwich, if the film lines up with a roller, readjust the placement of the template. If the taped-on film hits one of the first feed rollers, it usually sucks it up and winds very tightly around, and the rest of the night is spent disassembling the copier to extract the film.

More notes: this is not an exact science. The registration will wobble and vary somewhat, sometimes a lot. Some copiers get best registration at 101% or 99%. For a fabulous mottled black texture, put black paper behind the template (can also use other texture/graphics for background). For advanced technique, several strips can be copied at once (just avoid those rollers). For titles that scroll from side to side, the placement of the strip can be altered slightly each time. Graph paper under the template strip can sometimes help with fine animating movement. Can use black leader, copying on non-emulsion side, and scratch away to reveal photocopy image. The most fabulous results come from moving the template as the paper & clear film is copying – gorgeous streaks and stretches, zipping in and out of registration with some practice and trial and error.

Rubbings onto tape onto film  
Film Collage Devon-style  
Tape lift  
Textured Scratch  
Bag/Plastic iron ink transfer  
Drypoint

Devon says to  
contact him if  
you'd like any  
of these  
recipes.

**From:** Rock Ross <rockross@mac.com>  
**Subject:** handmade culture

Rock Ross wrote:

I like to iron the labels off of bread and similar product bags on both sides of clear 16 mm & 35 mm film. I learned this technique from Michael Rudnick (Baglight).

Michael Rudnick and I also have been using a Sharp copier to transfer images to the front and back of clear leader (2001bc & Charcoal Narcissus) We use one color for the front and another for the backs. This technique makes an effective soft focus backdrop that gives the front surface a dramatic relief. The strips of 16 or 35mm have to be laid side by side and taped down on the largest piece of paper the copier will take. The images can even be sized to fit frames or random. We have successfully transferred 16mm footage back onto 16mm clear leader in a unique texture (Footage). We have used combinations of handmade techniques; stamps, airbrush, letaset, scratch, paint, dremel, paper punches, stencils, embossing mold, bleach, sewing directly on film with a sewing machine and presented them with live music accompaniment.

I've learned that you have to make your own culture.

Sincerely  
Rock Ross  
16 Sherman St.  
San Francisco, CA 94103

## **Some notes for Helen on how we approach cameraless animation**

by Kevin D. A. Kurynik and Carol Beecher

### **1. Sculpting cameraless**

Kevin likes to use colour opaque film and a curved X-acto blade. He likes the colour opaque because of the natural colours green and yellow that are produced depending on the pressure applied to the knife and because the colour stock does not require moisture applied to it to make it easy to work with unlike black and white opaque stock.

Using a curved blade: A #11 X-acto blade only can make a thin cut on the film because of it's pointy tip, a curved blade allows for much more freedom in 'sculpting' images out of the black film. Kevin has enclosed an example of the footage produced and an example of the type of blade.

When adding other colours we simply flip the film upside down and apply Staedtler permanent markers onto the back very much like cel painting, line work on the front, paint on the back.

For scratching on opaque stock Carol likes to use a fine lithography knife (it looks like a quill pen tip without the slot for ink). This is especially good if you are working with 16mm stock. Very fine details can be etched into the emulsion and you can get the greens and yellows out of the 35mm if you are very careful. It also can etch into black opaque without having to apply moisture.

### **2. Registration**

If you want to be a real control freak with the images on colour opaque, you can draw the images on paper first. Photo copy a strip of clear leader with frames and draw on each frame, make sure the lines are quite dark (you can even test these first if you like with a line tester). Once you're happy with what you've got then you can transfer the images to the opaque stock. Cut a small square the same size as a film frame in a piece of heavy black paper and tape this to your light table, this will be the only place you should have light, cover up the rest of the table. Place your paper frame over the hole and then put the opaque frame on top. With all the lights off in the room you should be able to see the lines on the paper through the film frame. You can now trace/etch these lines into the frame. If the room isn't dark enough you can cover your head with a dark cloth or blanket. If this gets too hot you'll have to wait for the sun to go down so you can see what you're doing. It's recommended not to do this for more than 3 hours at a time, as it can be quite hard on the eyes.

You can also do this with the paper on top of the film frame. Securely tape the paper frame on top of the film frame and with an X-acto knife cut through the paper onto the film, don't press hard as you don't want to cut the film. When you backlight the film frame you should be able to see fine lines etched into the emulsion, this gives you a guide for further sculpting out the images.

### **3. Bleach**

Bleach can create interesting effects depending on how carefully it is applied. On the colour opaque stock you can sometimes pull purple out of the emulsion when you use bleach. Put a small drop of bleach on the frame, let it sit for about half a second and then you can tease the purple out of the liquid. Once you get the colour where you want it carefully soak up the bleach with the edge of a kleenex, be careful when blotting because you can also soak up the purple.

The plastic stick inside of a q-tip can work really well if you cut it like a quill pen tip. The cotton on the q-tip and any paint brush, synthetic or sable, will eventually be eaten away by the bleach, usually you can only get about 5 seconds of footage done before your brush disappears. You can extend the life of the brush a little bit by putting the brush in water immediately after applying the bleach, but it won't make much difference. Use a very small container of bleach (1 oz or less), with larger quantities the fumes can irritate your eyes and nose, and if you spill the stuff it won't be as big a disaster.

**Always remember that the sound stripe goes on the left!**

**About the filmmakers:**

Kevin D. A. Kurytnik and Carol Beecher are animators located in Calgary Alberta. They make stuff like drawings move, sometimes intentionally. Both of them work at a cool place called Quickdraw Animation Society, Carol as an arts administrator, Kevin as an animation instructor. They are also continuing to work on their epic cartoon "Mr. Reaper's Really Bad Morning". When that film is finished there will be a very big party. Check out the progress of the film and when the party will happen at [www.mrgeorgereaper.com](http://www.mrgeorgereaper.com).

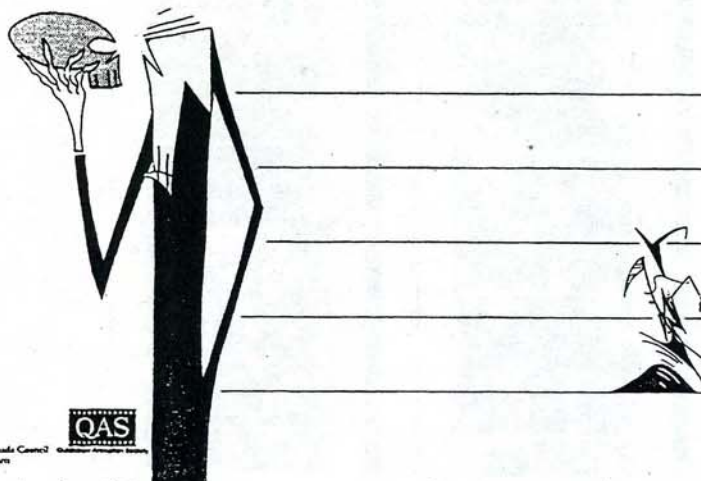
CARTOON PHOTO  
of THE FILM  
MAKERS:



**MR REAPER'S REALLY BAD MORNING**

is a film about the uneasy co-existence between life and Mr. Death

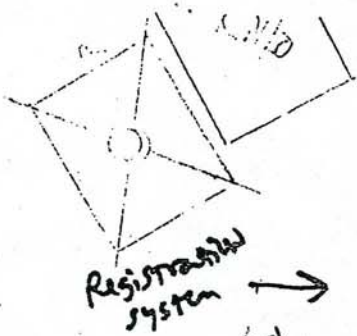
[www.mrgeorgereaper.com](http://www.mrgeorgereaper.com)



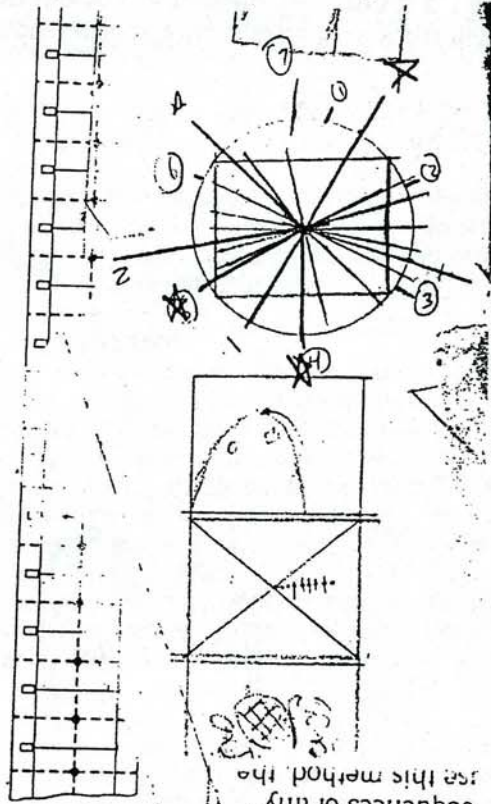
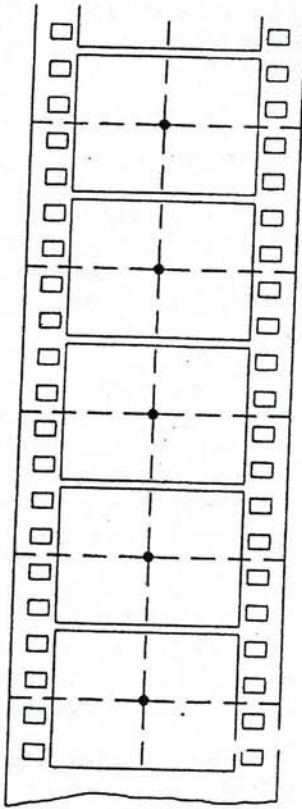
EDMONTON 488-2797 • CALGARY 249-3800 • OUT OF TOWN 1-800-486-7131 • WILD CARDS ARE FREE

ASK ME  
ASK ME  
ASK ME  
ASK ME  
by  
CAROL  
BEECHER  
CAROL  
BEECHER  
CAROL  
BEECHER

Kevin's Favorite Cameraless  
Sculpting Tool  
"Nothing works  
like it!"

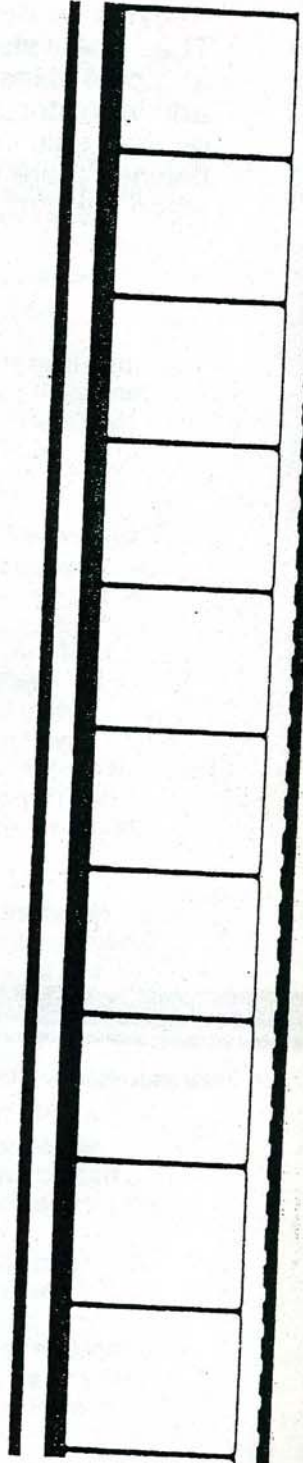


for  
"DUNVEGAN"  
Cameraless



sequences of tiny  
see this method the

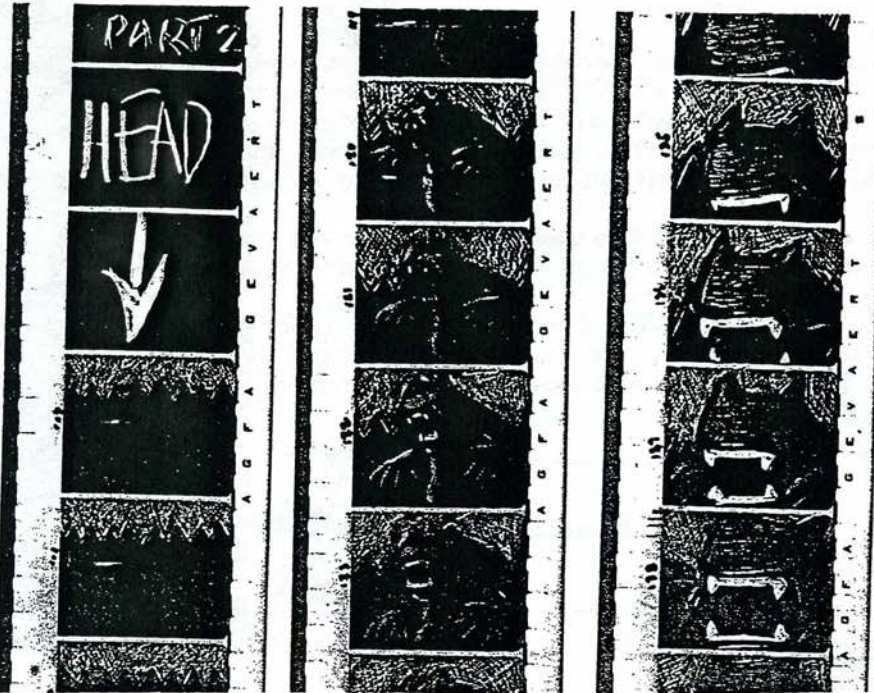
Norman McLaren  
completed the first  
drawn-on-film project  
in 1935. McLaren has  
carried the technique  
further than any other  
artist.  
COURTESY OF THE NATIONAL FILM BOARD  
OF CANADA



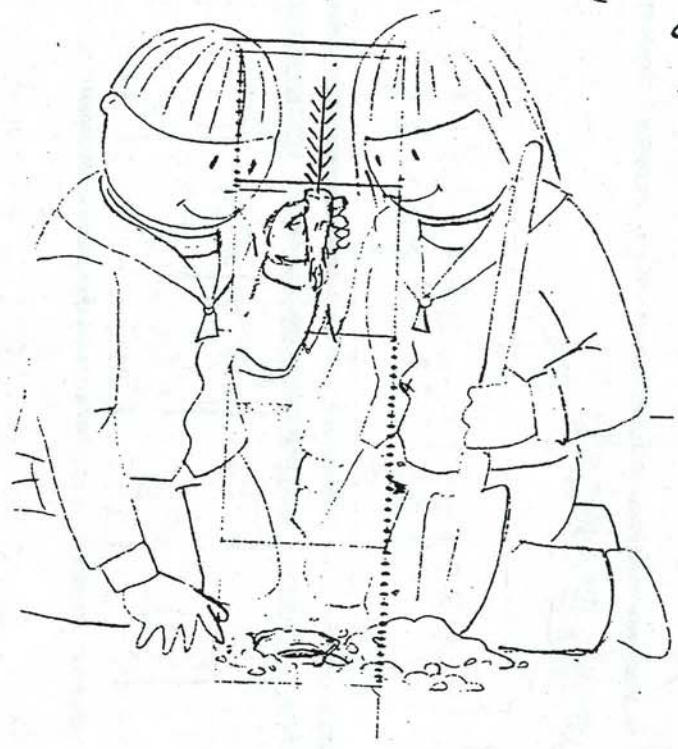
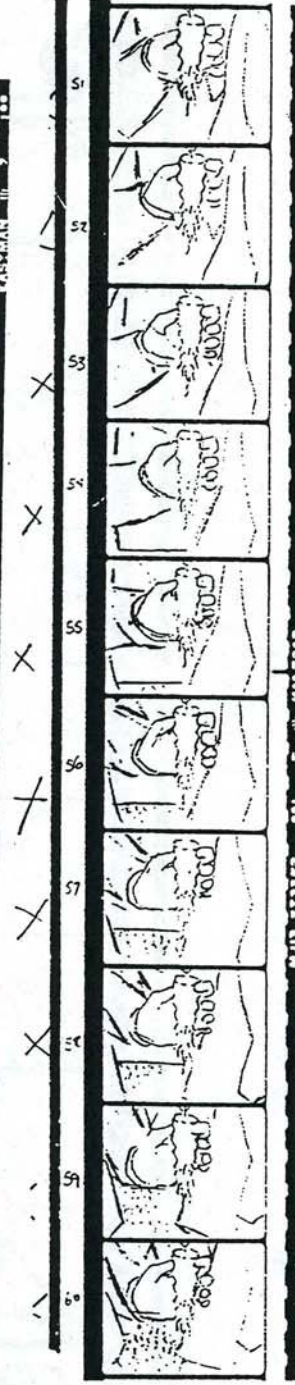
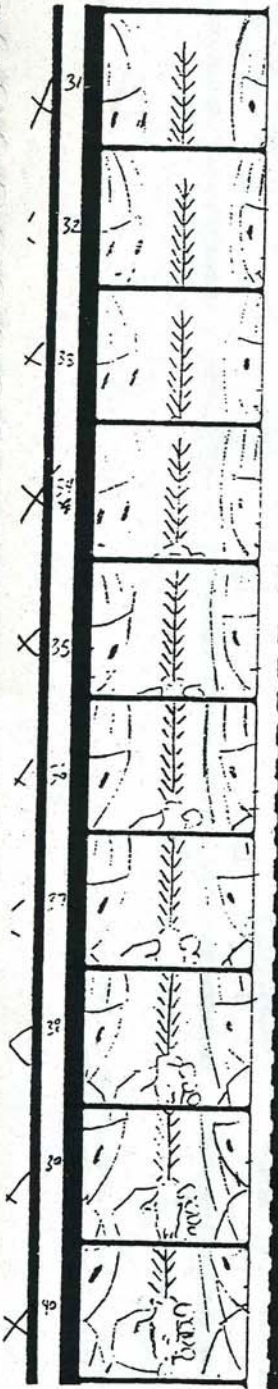
35mm  
template

"CARNIVAL  
MONSTER"

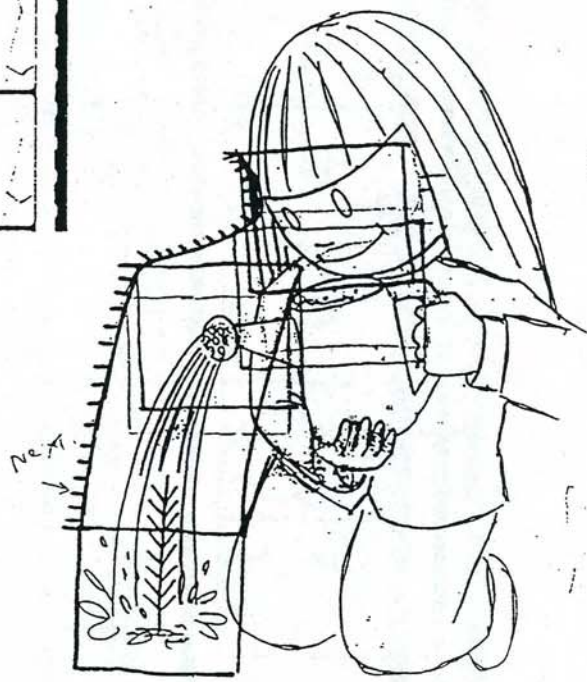
PHOTO  
COPY of  
FINAL  
FRAMES  
from  
A SEQ  
FROM  
"DUNVEGAN"







"PLANTING FROM TREES!"  
 ← TEASECTOR  
 CAMERA MOVE  
 SCHOOL



ALEX

FROM TYPES:  
 PLANTING FOR  
 ← "WATERING  
 SEEDLINGS"



ANIMALS

INSTEAD

OF

THE

man for a beast  
"CANNIBAL MONSTER"

PHOTO COPY of initial drawings from A SER from DUNVEGAN. DRAWINGS WERE MADE ON COPIES of 35mm man frames + line traced.

Then these images were transferred to the opaque colour camera lens 35mm film stock

THE FINAL RESULT IS ON THE ATTACHED COLOUR COPY



ANIMALS \* HURTING PEOPLE

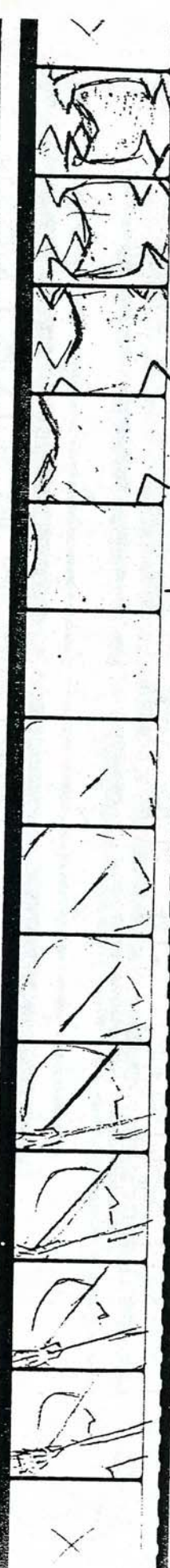


PHOTO COPY  
DUNCAN

PHOTO COPY

Black

My Cameraless Experience  
by Don Filipchuk

Don Filipchuk  
<http://members.home.net/filidon>  
Proprietor, SivAndZeek.com  
<http://www.sivandzeek.com>

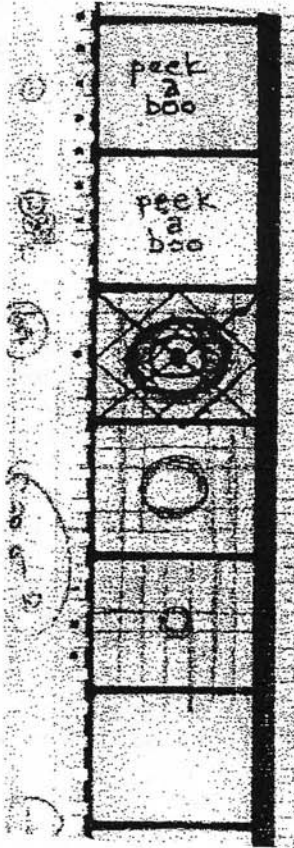
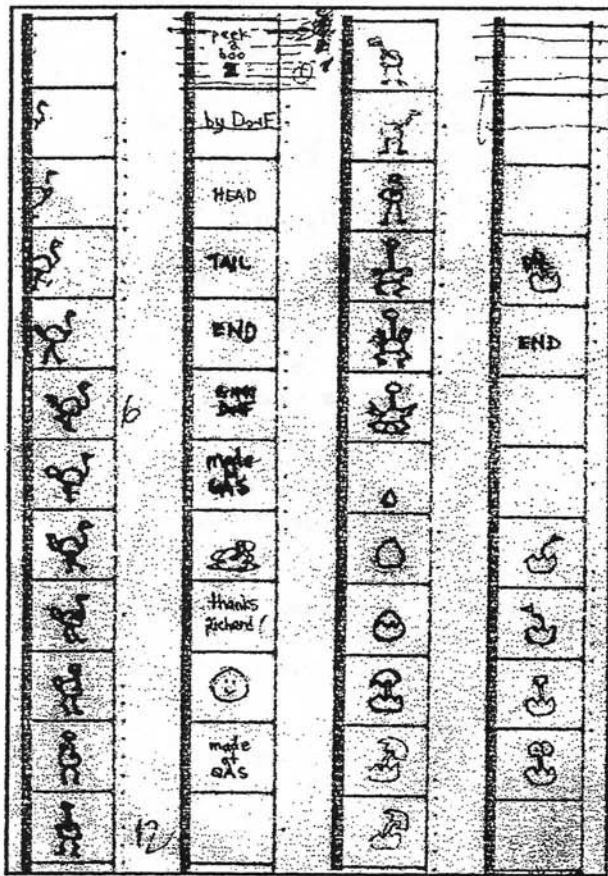
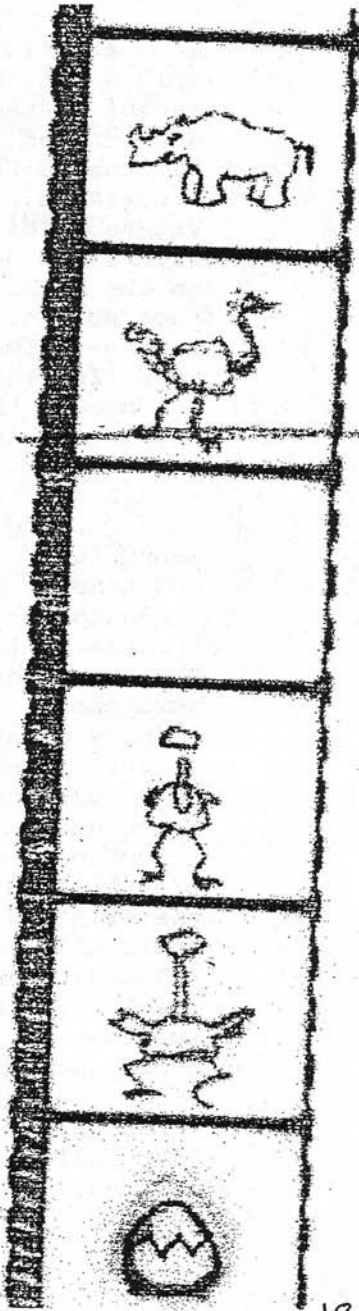
I have made two short animated sequences using cameraless technique, thanks to excellent workshops led by Richard Reeves at Quickdraw.

My animation style is mainly key-frame with line-drawing, so I like to do cartoony images and characters. These are really hard to do freehand and with consistent shapes within the canvas of a 35mm film frame, so I draw the key frames on a piece of paper marked out with the correct size frame workspace.

This makes it straightforward to test drawing the key frames, and lets me make my mistakes on paper first before I start scratching the images on film. I found scratching using a sharp implement (like a compass) worked really well to create clear (white) lines on a black 35mm stock - this creates a dramatic white line on a crisp black background - looks pretty cool when projected on the big screen!

That's all for now - enjoy these images from my cameraless scratch animation, and good luck with your animation too!

all the best -  
Don Filipchuk



Hand manipulation tips from Jen Proctor,  
Austin Cinemaker Co-op  
[canetoad@mail.utexas.edu](mailto:canetoad@mail.utexas.edu)  
[www.cinemaker.org](http://www.cinemaker.org)

Accidents are the one of the most exciting contributions that can be made to handcrafted film. I love to work on my hardwood floor after my cat's been rolling around on it, just in the hope that I might pick up some cat hair or bug legs or dirt on the film surface. Often, these bits of otherwise unwanted junk create spectacular textures or shapes, or become useful discoveries for creating layers of color or interactions of movement. I never put my film away when I work on it. I always leave it out and am sure to let the ends sweep across the floor as I paint each frame. Following are a few tips and discoveries I've made through my art of carelessness.

1. The basic materials I like to use: india ink of various colors, paintbrushes, Fresh Wildflowers scented Clorox (a little easier on the nose), q-tips, toothpicks, fingertips, masking tape, x-acto knives.
2. Other materials I like to use:
  - Vegetable oil. One of my favorite discoveries. Vegetable oil (or other oils, I'm sure) is wonderful for creating layers and depth between applications of ink. Put a layer of ink down on the film, let it dry, then apply the oil. Let it sit for a while, then add another layer of ink. Blot it dry with a tissue after a few minutes. The oil is thick enough to make one layer of ink feel like it's floating above the other when projected, while not so goopy that it damages the film or projector. You can also apply ink directly into the vegetable oil for interesting swirls and other effects. Or any variation of the above.
  - Salt. Another favorite discovery. Sprinkle it on top of wet ink, and the salt will suck up the liquid. The result is wonderful, tiny sunbursts or explosions within the ink, little crackles and crunchy bits of texture.
  - Beading needles. Great for intricate, detailed scratching on film. Purchase a fine needle at a bead store and insert it into the eraser of a pencil. X-acto knives also work for larger, rougher scratches.
  - Spray paint. Creates fantastic sprays of color and texture, sometimes with a fine, subtle spiraling effect. The drops tend to be quite varied in shape and size, so the effect is one of depth and layers, with some drops seeming out-of-focus.
  - Toothbrushes. Also good for spray/rain effects. Dip an old toothbrush in ink, then run your fingertip (or fingernail) across the bristles to spray the ink onto the film surface. Creates nice, small blobs of color.
  - Ink dropper. When using ink with a dropper top, squeeze almost all the ink from the dropper until just a film remains. Squeeze the last bit out as a bubble on to the frame's surface, and let the bubble pop on to the film. Creates an even circle of color with a thick ring around the edge.
  - Sandpaper. Wonderful for grainy scratches and scratches that follow each other in movement across the frame. Also creates interesting curved maze-like textures when combined with ink.

- Sponges. Like fingerpainting when you were a kid, sponges can be used for fun blots of unpredictable color and design, especially when multiple shades of ink are used on one sponge.
- Masking tape. Of course, this is the wonder tool for painters of all kinds. It's perfect for masking off a section of the frame and bleaching or painting around the rest. You can do almost anything to the rest of the frame and the masking tape will not let the ink or bleach bleed through.

Reticulation. Reticulation is my favorite part of working with india ink. For the most part, I've only managed to find black ink that cracks in those wonderful webs of movement, and even then, only really does it for Higgins me. Dr. Martin's tends to coat on more evenly and thinly, with less cracking. Over time, Higgins will continue to reticulate, causing your film to evolve and change and grow before (or without) your eyes. I love it.

India ink. Vs. Drafting ink. India ink goes on unevenly, with a blotchy consistency, tending to pool in some areas and fade in others. This can be fantastic if you desire randomness and unevenness in texture. India ink also rests on top of the film so it can be scratched or used to block light from getting through the projector. The flip side, of course, is that it tends to scratch easily inside the projector and can flake off over time. Drafting ink, on the other hand, absorbs into the celluloid, creating an even, translucent slice of color. Drafting ink is useful for coloring without changing the texture of the film's surface. Food coloring can be used in a similar way to drafting ink, though it's not as vivid.

My philosophy in handmade film is raid the pantry and see what you can discover. It's amazing what brilliant effects can be created using items just sitting in your fridge (especially those that have been there a long, long time). Let your mind go, drift into that hand-painting meditation, and your finished work will likely become a startlingly beautiful document of your grocery list.

Hello Helen —

So great that you are doing this. Here are a few tiny hints

① Nail Polish on the emulsion work to block the action of the bleach. I find that blue polish is the easiest color to see when you are working. Do not stay limited to the brush that comes with the polish. Nail polish can be removed after bleaching. Be careful to rinse the acetone (nail polish remover) off immediately. In a warm climate the acetone will begin to eat the film base (acetate).

② Black India ink works great to block out part of the image. Staedtler is the densest brand of ink and works great in the superfine rapidograph pen. Use on emulsion side.

③ Do a lot of whatever technique you are using. Allows the eye to focus.



MAYORES QUE ACOMPAÑAN AL TITULAR:	
NOMBRE	PARENTESCO
Naomi Uman	PADRE
naomiuman@yahoo.com	MADRE



Helen:

working on two films at the moment:

on one, i'm ashamed to say, i've simply purchased a cheesy kodak "home processing" kit....runothemill, i know....do any other chemicals do neat things to unprocessed films?? Ive never experimented with this... have an "artnouveau" friend who urinated on his unprocessed film as a performance piece, but it didnt amount to much more than a smelly film and a bad taste in my mouth for weeks..... :)

the other, i'm using bleach on unprocessed/exposed film (and windex, cream cleanser with bleach (especially the kind with those exfoliating bits thingummys), and exfoliating cream, mr clean). I wash off with water at diff. times, for diff concentrations. (note: make sure you wash off well, or it may harm the projector lens). I use dishcloths, sponge, toothbrush w. diff. strokes and stuff.....looks like brown dirt landscapes and weird hand movements....ive also added a 2nd strip w/ actual images w/ glue, though i'm not having much luck with that yet (i haven't tried actual splicing glue yet...hopefully that will work)....i don't want to make superimpositions....it looks bad.

keep on truckin'.....>AduMT,

From: ☺ Artist Collective <accomplishedsomething@yahoo.co.uk>

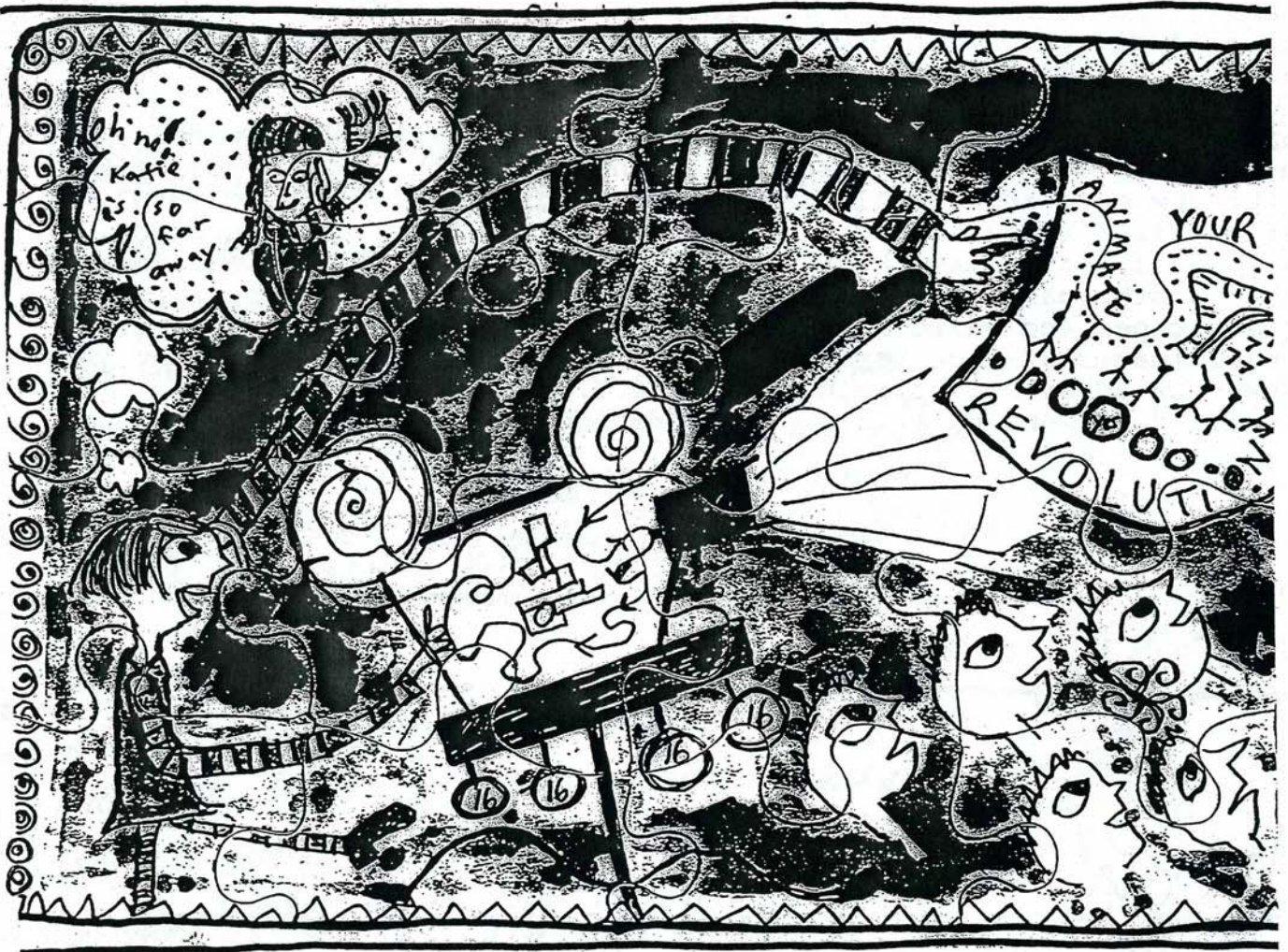
Helen -

here's some handmade

film advice: you can soften film emulsion by soaking it in "Fantastik". I've seen people do this, then transfer the emulsion to a piece of clear leader. It comes out all wobbly and shredded. Try it.

Luke Jaeger

30 Orchard Street · Northampton, Massachusetts 01060





### III. Camera Tips and Projector Tricks

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# JOHN PORTER'S FRAME BLOW-UPS

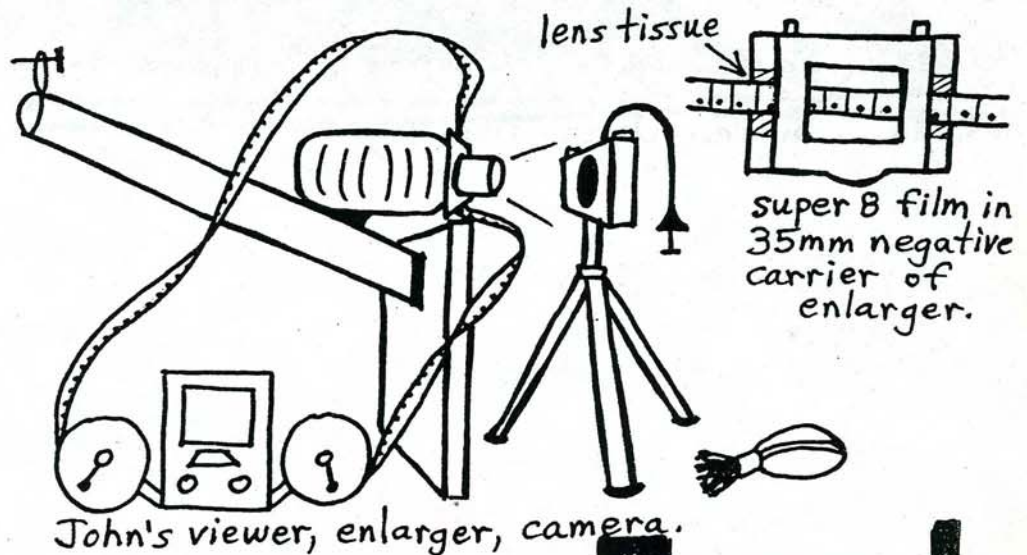
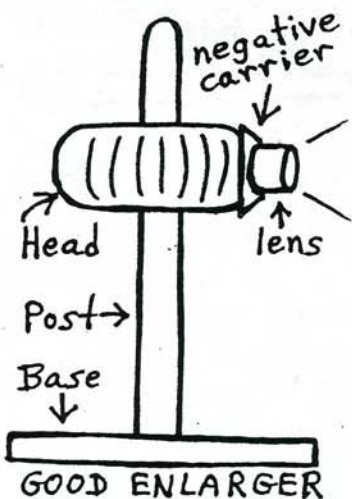
This system is complicated but it produces good results and some flexibility. You can make still photographs from standard 8, super 8 or 16mm movie film, choosing the photo's composition, and you don't need to cut your movie film into short strips. You can shoot on 35mm negative or slide film and later make any size prints at any time. I shoot on black & white so I can make my own prints at home, and I use fine-grain film (e.g. - Kodak Plus-X).

You need a photo darkroom enlarger, a single lens reflex camera with an in-camera exposure meter and removable lens, tripod, cable release, movie viewer and blower brush. A good enlarger like a Durst allows the head (lamp housing and lens) to swivel on its post and project horizontally. My basic Omega enlarger head won't swivel but the post swivels on its base. I have to turn the post backwards so the head projects past the base, then turn the entire enlarger on its side, with the top of the post tied to a hook on the wall, so the head is projecting horizontally. The enlarger wasn't built for this so I also have to insert cardboard wedges around the internal lenses and the head mount to prevent them from falling out of alignment.

Aim the enlarger lens at the lensless camera on a tripod. They will be very close. Everything should be in line - either perpendicular or parallel (I use a carpenter's level). With the movie viewer next to the enlarger find your frame and, using lots of slack in the film, being careful not to rub it against things, place it in the centre of the negative carrier. Tape folded lens tissue inside the negative carrier to prevent the film sliding around. Compose your blow-up by moving the camera forward, backward or up & down slightly on the tripod. You can crop a 16mm frame or include a few super 8 frames in one shot. I like to include the sprocket hole, Kodak edge numbers and a bit of the two adjacent frames. I can crop them out later when I make prints. Focus and change aperture with the enlarger lens. Change shutter speed and read the exposure meter with the camera. "Bracketing" exposures is unnecessary if you correct for any overly bright or dark centres fooling your camera's meter, which reads only the centre of your subject. Darken windows and turn room lights off when reading the meter and taking your shot, and turn the enlarger lamp off when not being used - they're expensive, and overheat.

Setting up then establishing your routine can take time, so try to shoot a lot each time. You'll speed up as you go. Choosing from thousands of movie frames can take even more time, so do that in advance in more comfort (at your favourite desk & chair, with TV). Sometimes shooting many different frames casually can be faster than trying to decide on those few perfect frames. You can choose from your negatives later. Mark the found frames with small pieces of folded paper, or make quick drawings or notes describing them. Keep all surfaces, your hands and film clean, especially with super 8. Blow-brush both sides of the movie film in the negative carrier just before placing it in the enlarger.

BGM Laboratory in Toronto uses an enlarger and they project down onto 5"X7" colour reversal paper (for \$30.00), or 4"x5" colour internegative film (for \$23.00), and they require you to cut your film.



top view of John's bench.



John Porter  
696 A Bathurst St.  
Toronto, Ontario  
M5S 2R3  
CANADA  
(416) 532-5129

# TOY TRICKS

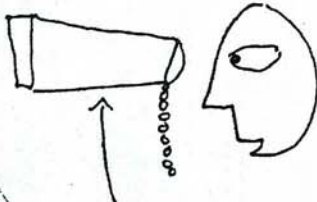
Save all your film outtakes and jam them into toys!



*National*  
 405 CLOVELL ST. SE  
 SEATTLE, WASHINGTON 98104  
 (206) 463-0701

Joe Kelly puts his own super-8 films in these. You must be patient and have an excellent splicer. Ask the company for a discount on empty (with no film) spools.

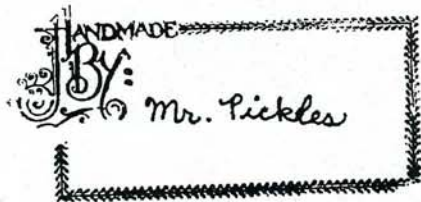
keychain viewfinders are great, make sure you can pop it open to put your own frame in, still sold in bulk for promotions.



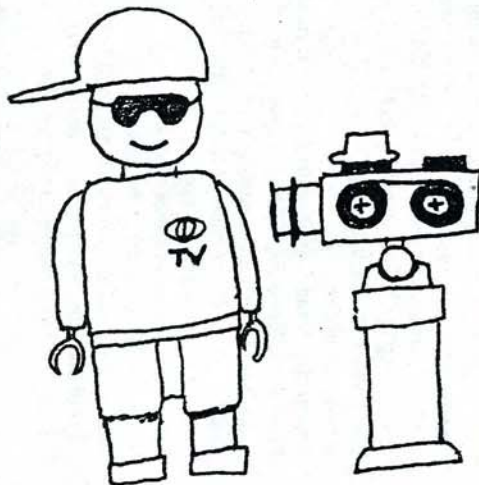
You get bizarre double images from putting your own frames in a 3-D viewmaster reel.



← sew on tags and rubber stamps →  
 from CRAFT SHOPS!



Hala Hill  
 (H H)



LEGO®  
  
 TV

as originally told by Jeff Warrin, then continually modified by people like you

#### materials

- Fine (600-grit) sandpaper
- Super 8 cartridge
- Aluminum tin (like a disposable pie tin)
- Smallest beading needle (#13 or less)
- Medium size washers
- Black electrical tape or camera tape
- Lighter
- Medium point Sharpie
- Elmer's glue
- Papermate flexi grip pen
- Magnifying glass or lupe
- Scissors
- Needle nose pliers
- Pencil with an eraser

#### assembly

1. Glue two or more washers together to create the desired focal length.
2. Cut a 1/2-inch piece from the sharp end of a beading needle. Using needle nose pliers poke the blunt end of the needle into the eraser tip of a pencil.
3. Cut a 2X2 inch square from your aluminum tin (make sure it is smooth)
4. Using the tip of the beading needle, carefully poke through the aluminum tin so just the tip of the needle comes through the other side.
5. Gently sand the hole to remove jagged protrusions
6. Check the hole with a lupe against a light source. The rounder the hole, the sharper the image.
7. Repeat step 5 and 6 until desired quality is reached.
8. Place a small amount of Elmer's glue around the perimeter of your washer stack and adhere to your aluminum tin piece so the pinhole is centered in the inside circle of the washers. Allow to dry. This is your pinhole lens.
9. With a sharpie darken the exposed side of the washer.
10. Cut out four 7-inch strips of electrical tape and adhere to the shiny side of the lens being careful not to cover the pinhole.
11. Line up the pinhole with the center point between the edge of the non-sprocket side of the film and the inner edge of the sprockets on a super 8 cartridge.
12. Tape lens down and secure light leaks.
13. Remove the guts and metal from a flexigrip pen so you are left only with the exterior.
14. Take a lighter and melt the flexigrip exterior at a point a third of the way down the surface so you can bend one end to a 45-degree angle.
15. Melt the other end of the pen a third of the way in and bend it at a 45 degree angle in the opposite directions of the first manipulation.
16. Heat one end of the flexigrip pen to the point where the rubber is very malleable. Very quickly with an agile and forceful hand, jam the hot end into the cranking mechanism of the super 8 cartridge. Allow to cool.

#### operating instructions

1. Turn crank clockwise with cartridge label facing towards the right.
2. Vary speed of crank based on film ASA and lighting conditions.
3. Crank will lose tension when roll is finished.
4. Keep a log of your activity to check your work later and compare different crank speeds in various lighting situations.
5. Pinhole films look best when projected with projectors that have speeds as low as three frames per second.
6. As you make remarkable discoveries, big and small, let folks know about them and we can continue to refine super 8 pinhole together. Ah man, that is truly beautiful.

#### some basic f stop information

10-millimeter lens - 6 washers  
# 13 - 33.33 f stop

7-millimeter lens - 4 washers  
# 13 - 23.33 f stop

4-millimeter lens - 2 washers  
# 13 - 13.33 f stop

1-millimeter lens - 0 washers  
# 13 - 3.33 f stop

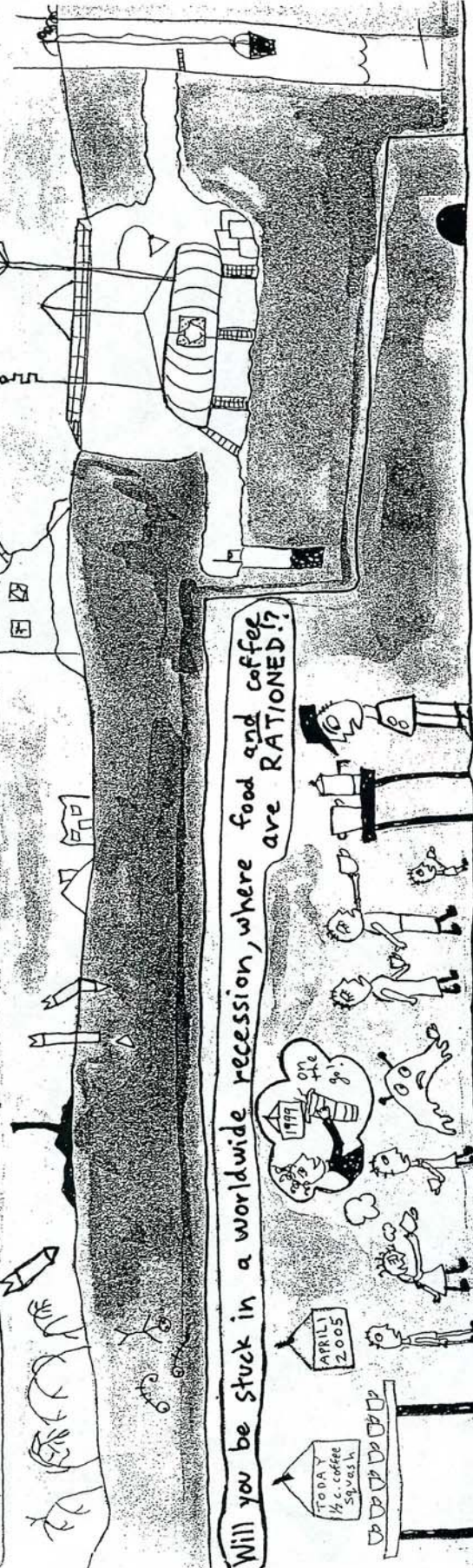
If you are interested in calibrating more f stops for different millimeter lenses consult pinhole resource literature on the topic.

Let us know if you come upon unique upgrades and/or modifications. Super 8 pinhole photography is an amateur science and its understanding relies on open dialogue amongst the curious and adventurous. At this point there is no website to consult but if you send your suggestions and revelations to me I will continue to update this document as we spread pinhole love around the world.  
Amateurish@yahoo.com

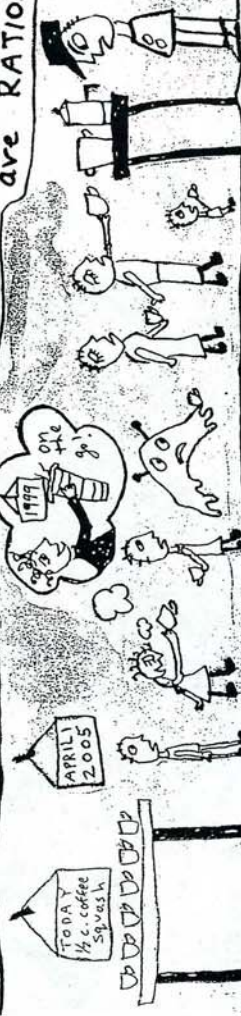
**Super 8 lives. Melinda Stone**

# WHERE WILL YOU BE IN THE NEXT CENTURY?

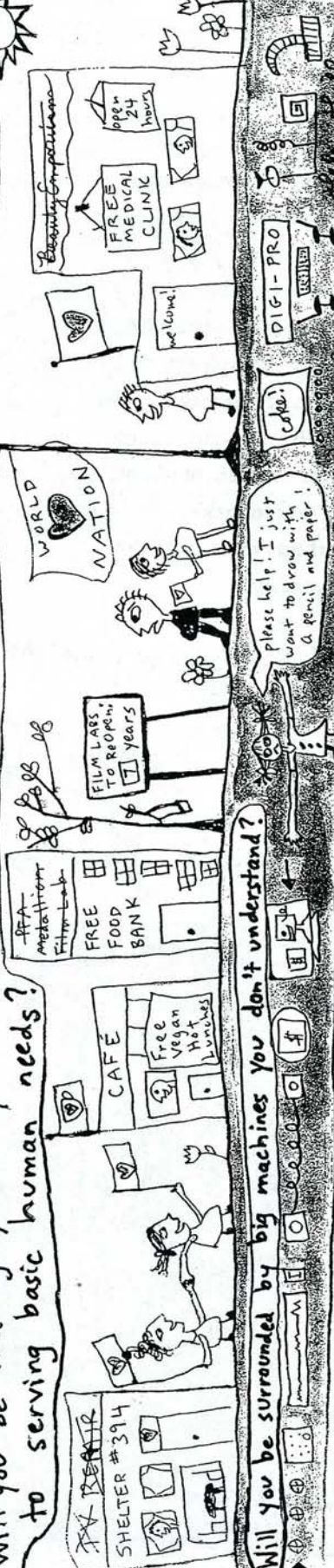
Will you be trapped in a tiny underground bomb shelter?



Will you be stuck in a worldwide recession, where food and coffee are RATIONED?



Will you be making your way in a better world, where all work and industries are devoted to serving basic human needs?



Will you be surrounded by big machines you don't understand?



## FILMMAKING MAY NOT BE SO EASY IN THE 21st CENTURY. BE PREPARED!

WATCH MADAME WINGER MAKES A FILM (A SURVIVAL GUIDE FOR THE 21st CENTURY)

R. Hill

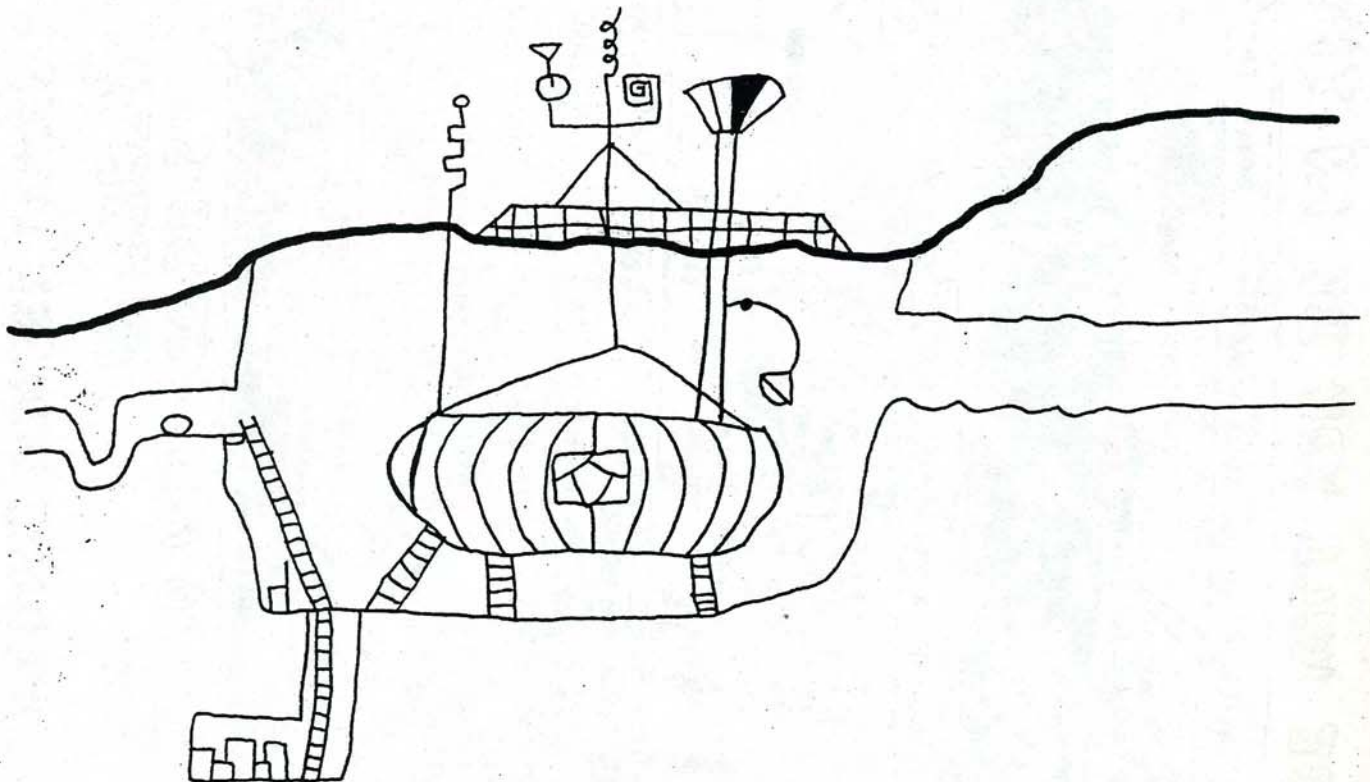
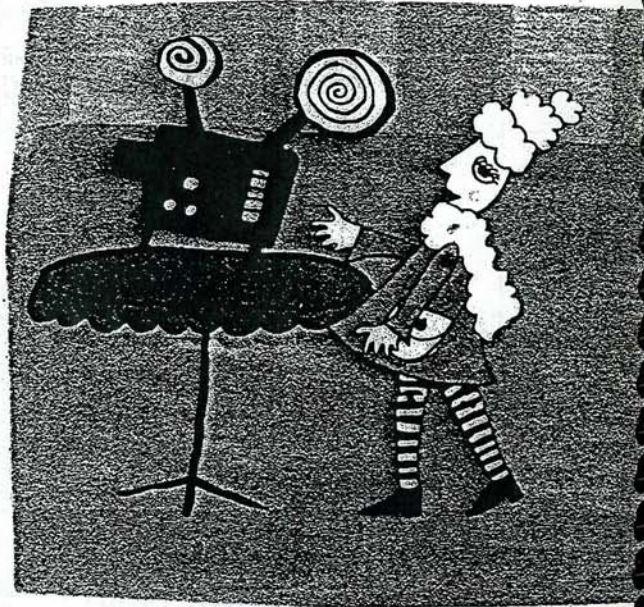
# MADAME WINGER MAKES A FILM

(A SURVIVAL GUIDE FOR THE 21<sup>st</sup> CENTURY)

by Helen Hill  
a 16mm film  
8 minutes, 45 seconds

"Filmmakers! How will you survive the new century? Watch *Madame Winger Makes A Film: A Survival Guide to the 21st Century!* Madame Winger, an animated character, shows how you can make a film, with the barest of materials, in your own home. Watch her examples of inexpensive and easy types of filmmaking, from drawing and scratching directly onto film to handprocessing it in your bathtub. Madame Winger wants to inspire you to make a film about something you love, without video, without computers, without big money."

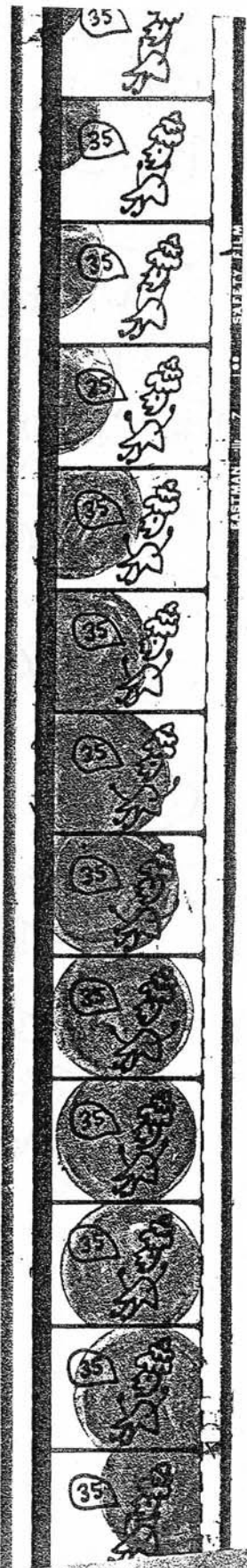
thanks to Pleasure Dome and AFcool



So many filmmakers never get to see this process of movie film developing. I hope that this film will inspire you to learn more. Please remember that it is a good idea behind a film and not fancy technology or a big budget that makes a great film. In this new century of changing digital technology, you may want to hide out in your own homemade film lab/ bomb shelter. Or you might take the barest of materials into your kitchen and make a lovely little flick about something you love. Filmmaking is fun, so get going.

The bad news is this. Film for photographs and movies still contains gelatin, which is made from animal bones. I hope that one day, a vegetarian film will be used. After all, toothbrushes used to be made from boar bristles. And now, welcome to the Madame Winger Miniature Pig and Independent Filmmaker Rescue Sanctuary.

Hi. I'm Madame Winger. The good news is that it can be easy to make a film. You don't need a lot of money, or a film lab, not even a camera. And you certainly don't have to keep up with the latest technology. For the next few minutes, I'll be showing you some of my all time favorite filmmaking techniques, from drawing and scratching pictures onto clear film, to filming and handprocessing your own movie film. Just remember: you do not need lots of money or the latest digital gizmo to make a good film. You just need a good idea.



# HOWDY HELEN (CHICKEN) HELL!

BEING THE KING OF FRUGALITY FILMS +  
GODFATHER OF IDIOT CINEMA, HERE'S SOME  
TIDBITS FOR FILMING ON THE CHEEP:

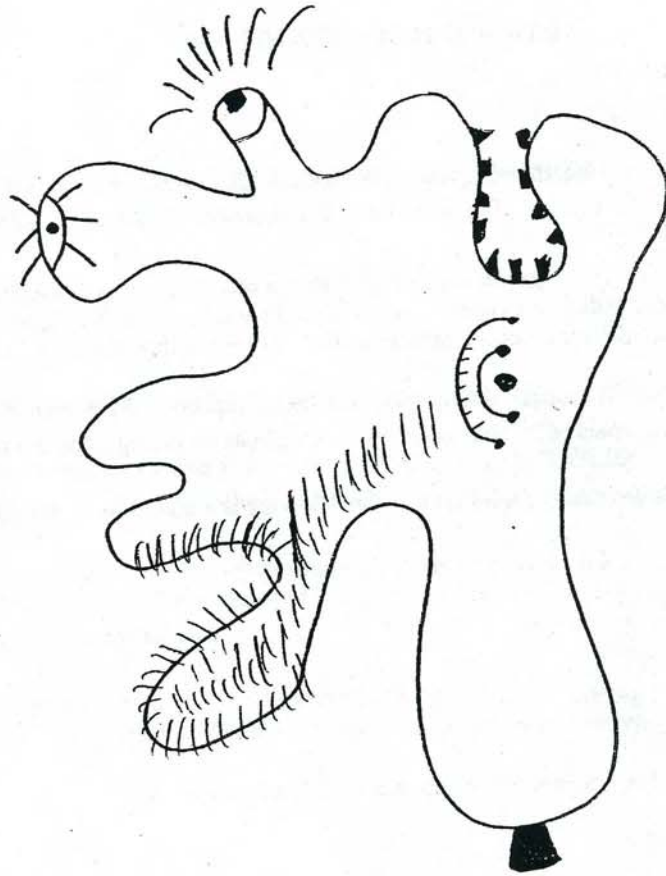
- ① SHOOT ON SUPER-8 FILM, TRANSFER TO VIDEO  
AND EDIT ON VIDEO. THIS GIVES YOU THE LOOK  
OF FILM FOR 'LIL DOUGH.
- ② VOLUNTEER (SP?) TO ACT IN STUDENT FILMS (MOST  
FAIRLY LARGE SCHOOLS HAVE FILM PROGRAMS) AND IN  
RETURN ASK IF YOU <sup>CAN</sup> USE THEIR EDITING AND/OR  
FILM EQUIPMENT. I DID THIS FOR MY FILM  
'JACK THE DIPPER' AND MOST STUDENTS ARE WILLING  
TO HELP YOU IF YOU HELP THEM.
- ③ FOR CHEEP TRANSFER: PROJECT YOUR RAW FOOTAGE  
FROM A PROJECTOR AND SHOOT THE IMAGES  
WITH A VIDEO CAMERA THEN EDIT ON VIDEO.

I HOPE THIS HELPS YOU, FEEL FREE TO  
PRINT ANY OR ALL OF IT. YOU CAN PRINT MY  
NAME AND FOLLOWING CONTACT INFO:

EMMY COLLINS  
KING OF FRUGALITY FILMS  
GODFATHER OF IDIOT CINEMA  
P.O. BOX 429  
PEAR Blossom, CA 93553-0429  
(661) 944-6997  
FRUGALFILMS@HOTMAIL.COM.

FRUGALLY,  
EMMY





EMMY  
COLLINS  
SELF-DRAWING  
LAX AIRPORT  
5.31.2001  
9:30 AM



## BOLEX 16MM CAMERA

A spring wound camera giving a maximum length take of up to 28 seconds. The camera should be wound after every take to ensure a full wind is available should it be required. The bolex takes 100 ft spools of film on daylight loading spools (2:40 sec).

There are two main types of film; reversal and negative which both come in either colour or black and white. Within the colour variety the film stocks are balanced for two different types of light - daylight and tungsten. Daylight stocks are to be used when daylight (skylight, overcast light) are the principal source of illumination. Tungsten should be used when professional photo

lights are the main source of illumination. The stocks can be used with their "improper" light source if filtration is applied either to the camera or the light sources. The principals of "correct colour balancing" can be disregarded if a particular effect is desired.

Most bolexs can accommodate up to three lenses of any length. The following is a guideline of the different "looks" of various lenses:

normal lens 25mm

telephoto longer than 25

wide angle less than 25

Bolex runs in speeds from 12 fps to 64 fps. Effective Bolex shutter speeds are as follows:

12 fps = 1/40 sec

24 fps = 1/80 sec

48 fps = 1/160 sec

64 fps = 1/220 sec

single frame = 1/40 sec

Bolex can do manual fades by lifting shutter angle lever and sliding down towards the bottom of the camera. Remember to leave shutter angle lever up and locked into open position (red line) to ensure full exposure.

The bolex always needs the filter drawer in it's place (behind lens) regardless of whether or not a filter will be used. If the filter holder is not in place the film can get fogged. A way to safeguard against this is to tape over the filter holder's slot if a filter holder is unavailable.

The eyepiece (diopter) must be focused to an individual camera person's eye. This is done before inserting lens so that ground glass can be seen. To focus on ground glass, point camera at bright object (light) and rock eyepiece nut back and forth until ground glass is sharp. Then lock nut in place and eyepiece will be focused for that individual.

Remember the acronym **FAST**:

**F** stands for focus - rear diopter focus as well as image focus.

**A** stands for aperture - the lens opening or *f*/stop determined by the Sekonic light meter.

**S** stands for shutter angle - determined by the position of the shutter angle lever (up is open - down is closed).

**T** stands for tachometer -the camera's speed which gives you the camera's shutter time (eg. 24fps = 1/80 sec.).

## THE SEKONIC LIGHT METER

1. Set ISO/ASA to correct setting.
2. Obtain incident light reading by pointing meter at camera from the object.
3. When shooting in high intensity light situations (i.e. - direct sunlight), use HIGH SLIDE (it slides in at top of the meter). Don't forget when using the high slide that you now take the reading from the High arrow on the foot candle scale.
4. When shooting objects too far in the distance to obtain an reading, try to obtain a reading by pointing the meter in a similar lighting situation. (Eg. If you are shooting the horizon, and you are in direct sunlight, but the horizon is covered by clouds, then try to get an incident light reading in a shadowed area.
5. The "correct" aperture is obtained by setting the foot candle scale (to the corresponding reading on the meter). This moves the APERTURE scale at the bottom of the Sekonic. Then you must decide what frame rate you will shoot at and get the corresponding f-stop reading.

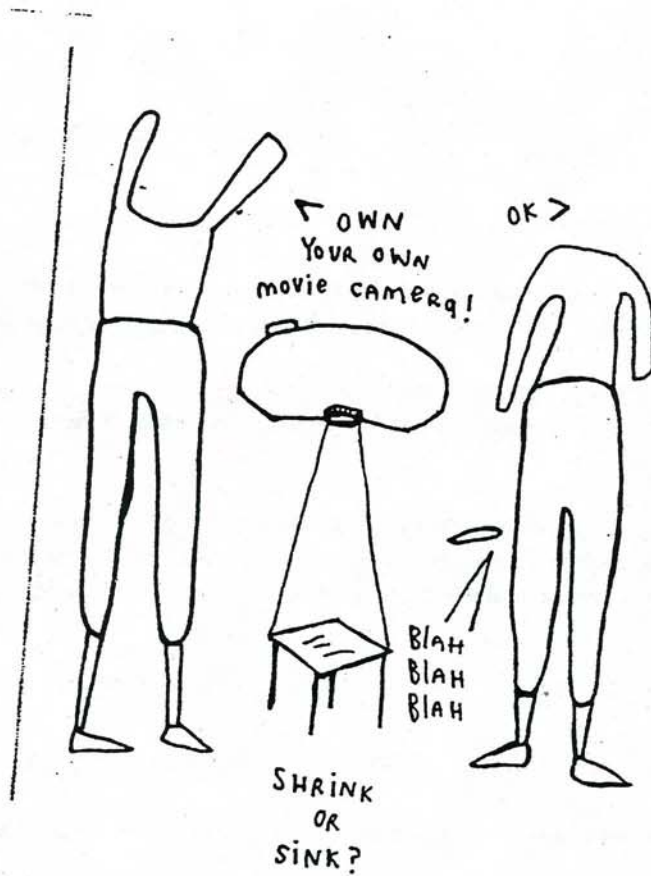
Steve Sanguedolce

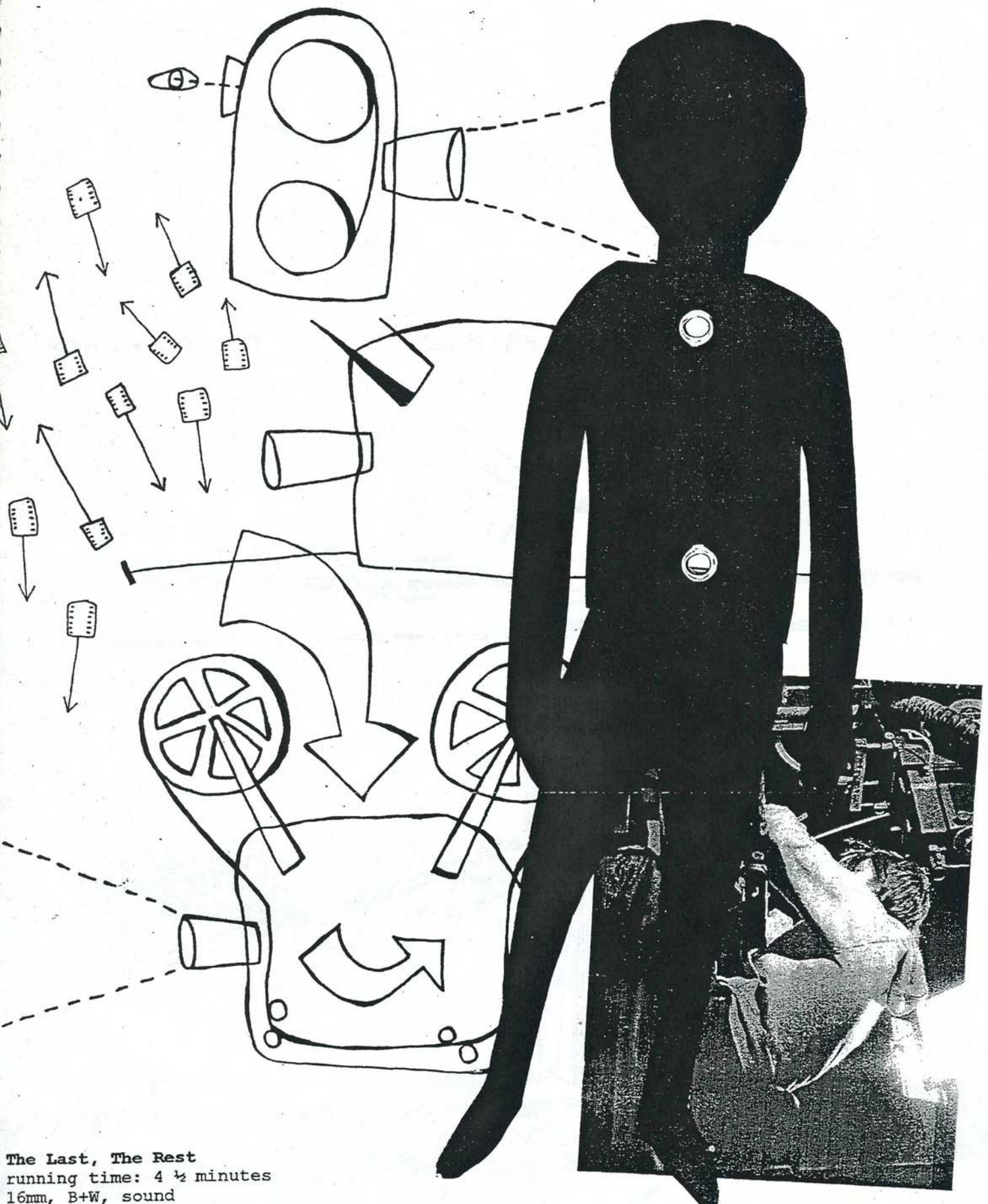
Jo



johannadery@hotmail.com

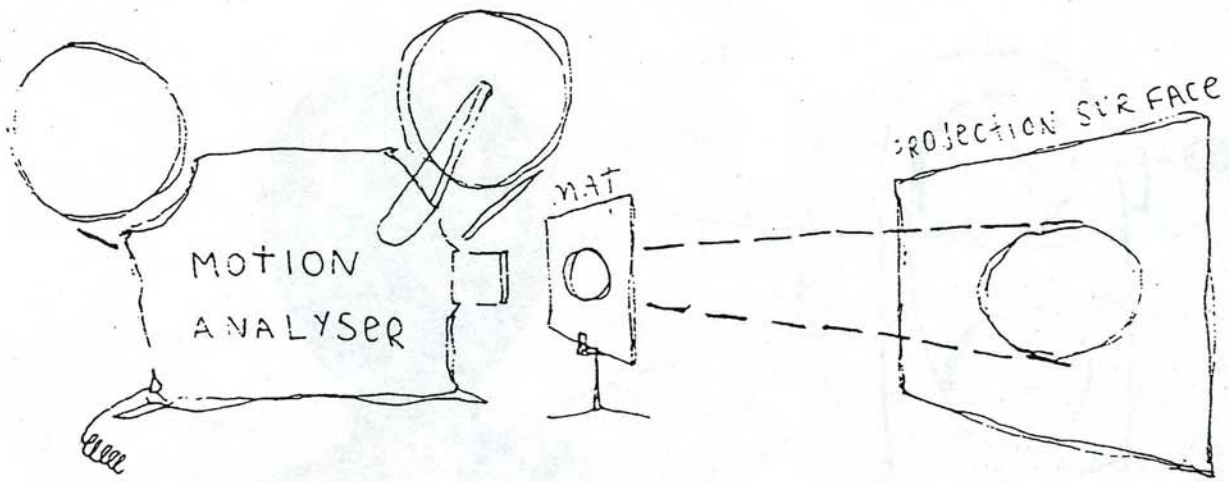
So mostly these days I make short films and perform live soundtracks along with them ... combining music + film, but I'd really love to move into bigger + better projects, it's all about time and money! I love cutouts and most other animation, and optical printing is a blast. I also love creating new rephotographing schemes using projectors set up in wacky ways (see little diagrams enclosed!)



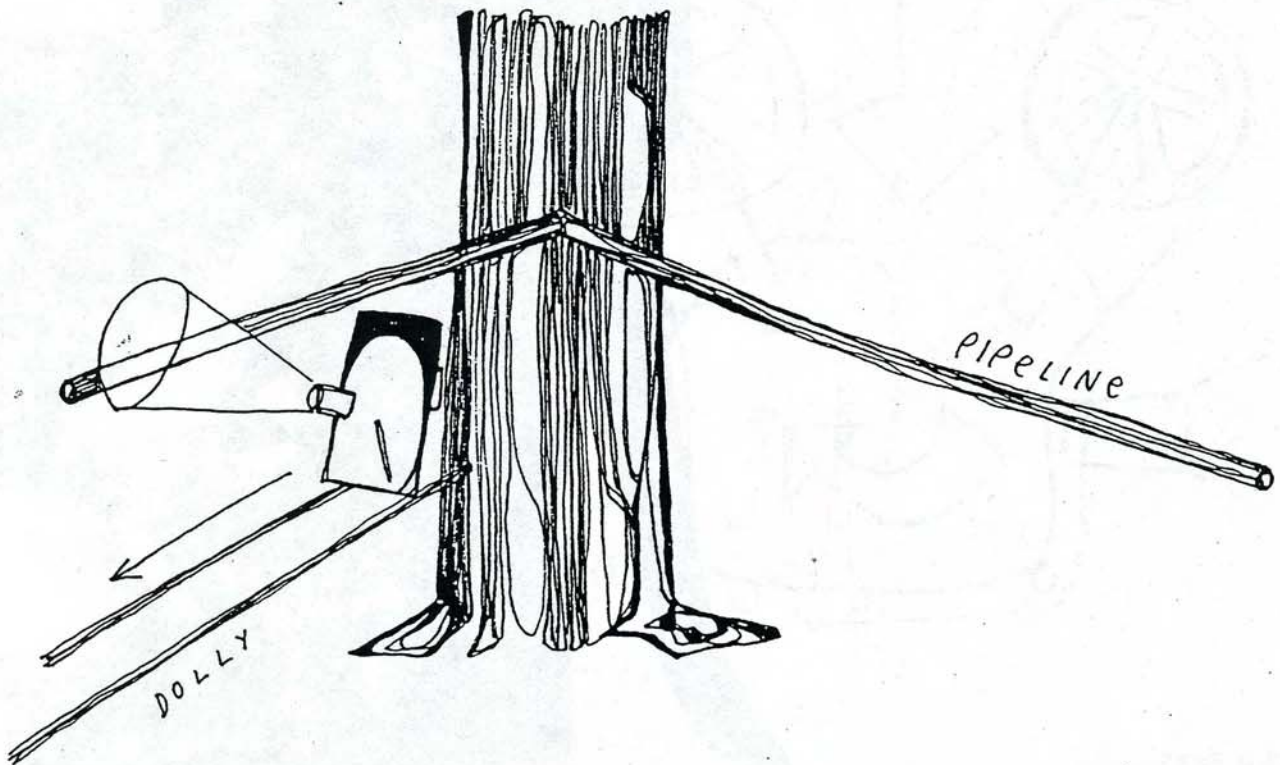
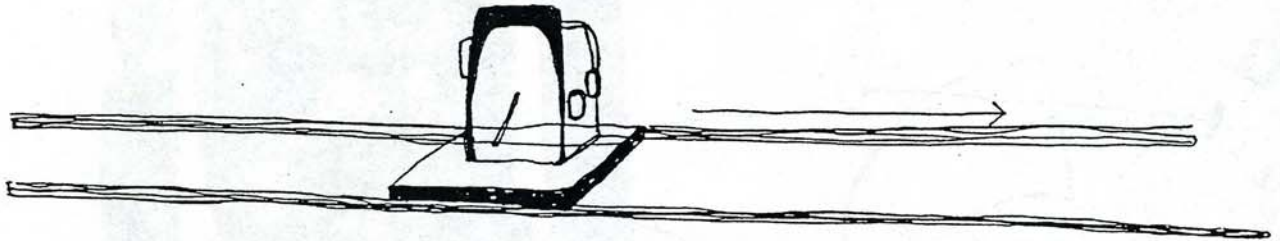


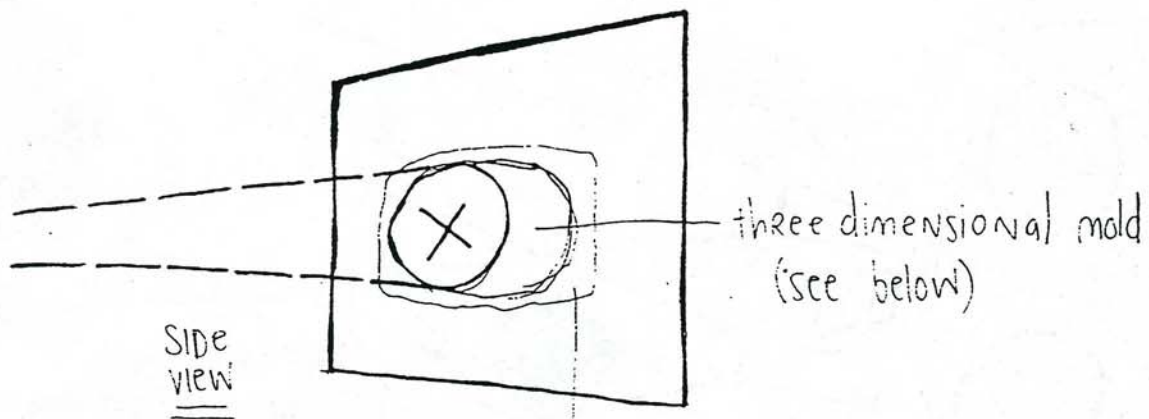
The Last, The Rest  
running time: 4 ½ minutes  
16mm, B+W, sound  
c. 2000

a film by Johanna Dery

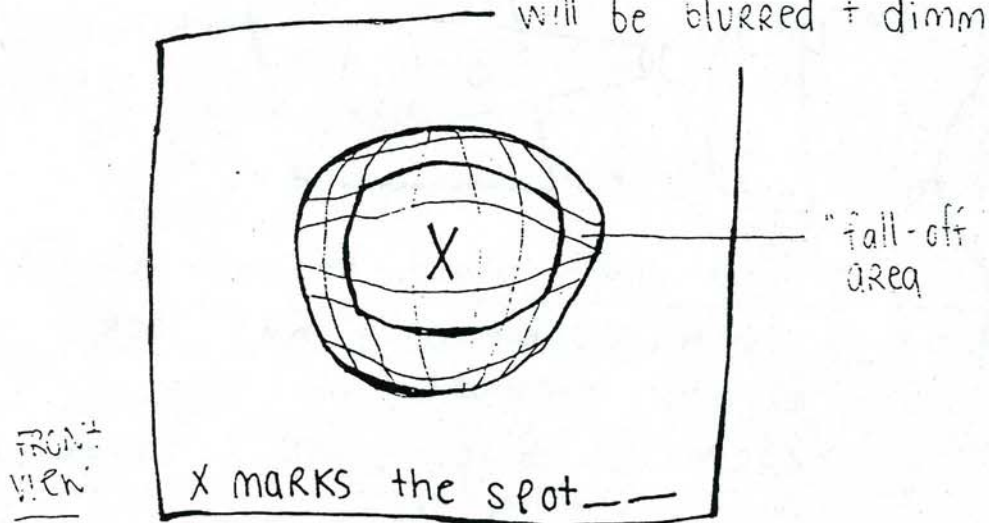


slowing / changing of speed of projection





Area of "fall-off" for  
projected image —  
will be blurred + dimmer

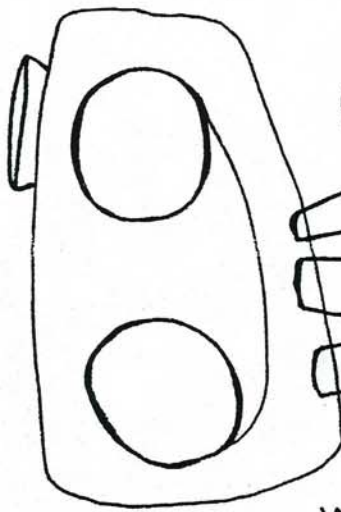


timeline



MARKS





Camera ...

lights ...



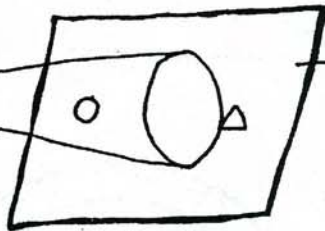
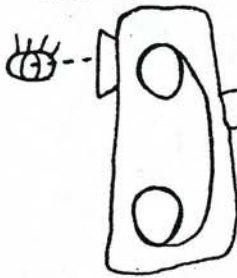
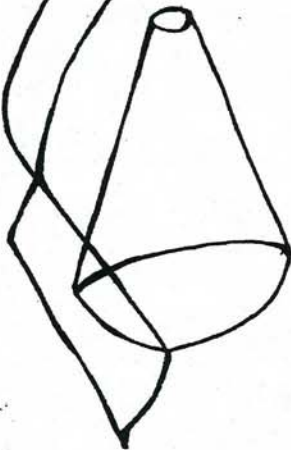
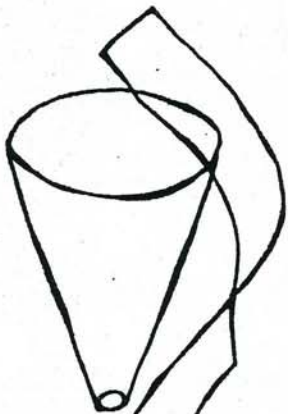
When you think you've got it figured out

MARCH 24 00

NORMAN MCLAREN

-AND-

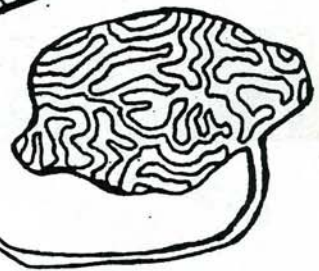
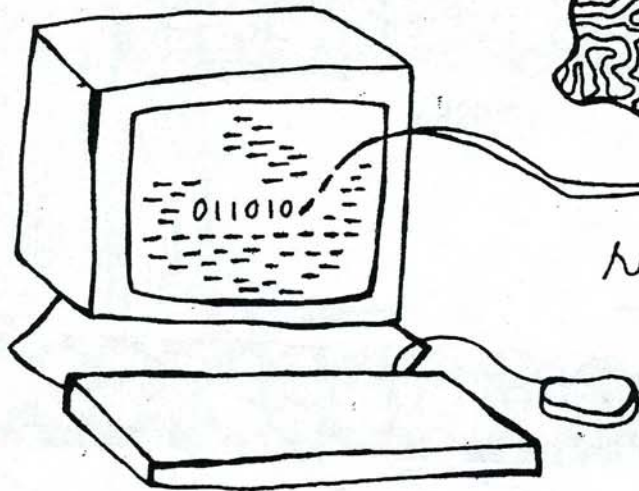
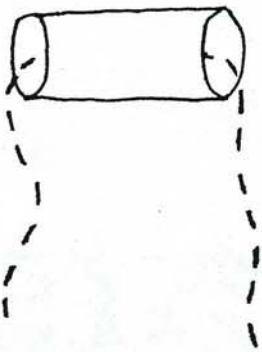
THE TRAVELING ZOOM



black background

- > zoom into black between objects ...
- > rewind camera 1/4 way back, and replace artwork ...
- > zoom into black between objects while fading in ...
- > Repeat, and you will have a traveling zoom!

THERE'S ALWAYS A MARGIN OF ERROR ...



ruining my life





2 film frames chewed  
by a little pet pig



QAS

The Quickdraw Animation Society in Calgary has an amazing animation video and book library. The folks there appreciate experimental filmmaking and are very kind people.

## The Web

Thanks! to [www.othercinema.com](http://www.othercinema.com)

(the website for Craig Baldwin's ongoing series of unusual and experimental film in San Francisco)  
for listing Recipes for Disaster!

their good links will take you to:

Scott Stark's FLICKER "home page for the alternative cinematic experience"  
[www.hi-beam.net/cgi-bin/flicker:pl](http://www.hi-beam.net/cgi-bin/flicker:pl)

Also: Norwood Cheek's [www.flickerfilms.org](http://www.flickerfilms.org) has lots of links and super 8 info.

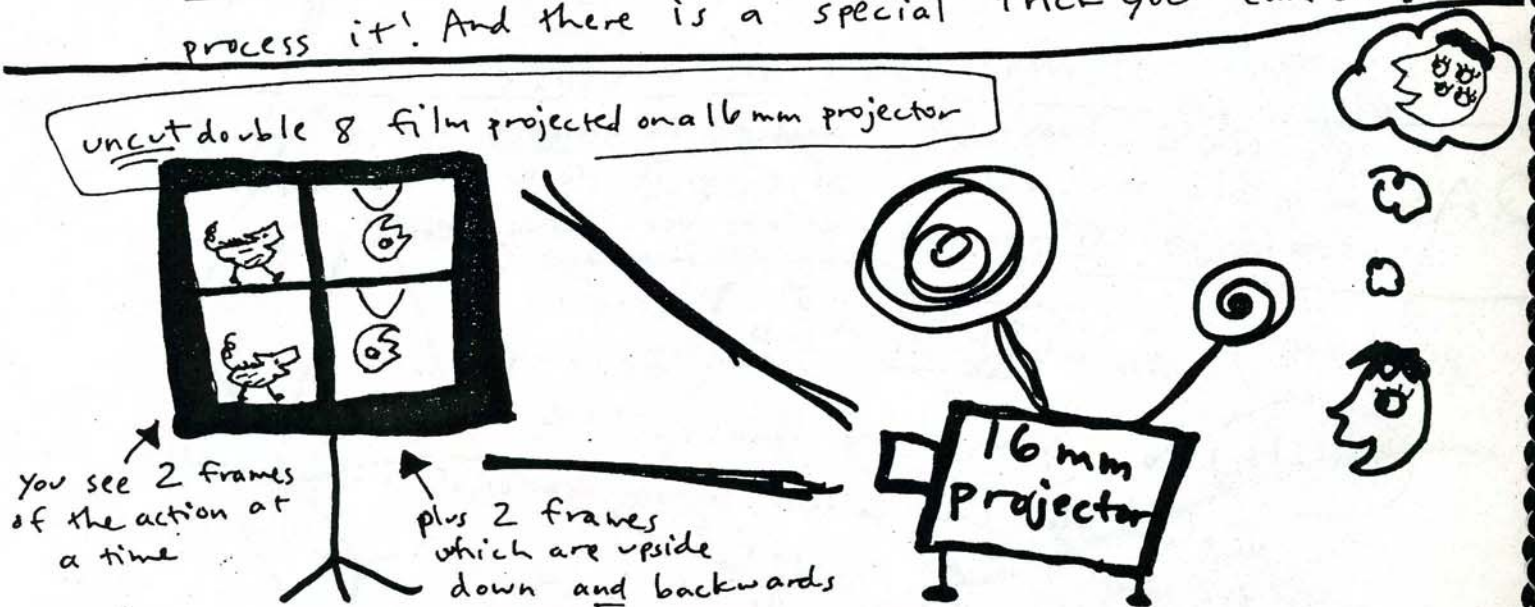
And: Small movies: The art and craft of making cinema

[www.city-net.com/~fodder](http://www.city-net.com/~fodder)  
is excellent, with plenty of links.

TIPS ON 8mm : double 8 (not super 8)  
 normal 8  
 standard 8

8mm was developed in the 1930's, by Kodak, who wasn't making enough profit from "amateur" interest in 16mm film. Basically, it is 16mm film with twice the sprocket holes and a camera exposes a tiny 8mm frame on one half of the film, then on the other half. (Later, the new and improved super-8 took over.)

But you can still buy used double 8mm cameras and new double 8mm film and there are labs which still process it! And there is a special trick you can do:



4 frames to watch!

↑ This can be solved (if you want) by filming with the camera upside down. with single frame animation, you could even shoot backwards (film the last picture first, ...)



not super-8 but you can get  
NEW (double 8mm) ASA 40/50 Cine-X reversal film  
25 feet: <sup>at</sup> FILMLAB  
445-447 North 7<sup>th</sup> Street  
Allentown, PA 18102-2835 USA

This lab also processes the film.

For the 4 screen look, you must ask them  
to NOT cut the film in half after processing.  
I asked and they knew what I was up  
to and it all worked well!

for regular 8mm, also see

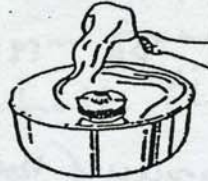
[www.athens.net/~macjava/filmpage.html](http://www.athens.net/~macjava/filmpage.html)

also: Kahl Media Art  
Postfach 1560  
D-50321 Bruhl  
GERMANY  
tel. (49) 2232 49188

all super-8 questions will most likely be  
answered by FLICKER the 'zine (from Norwood Cheek)  
or go to a Flicker web site:

[www.flicker1a.com](http://www.flicker1a.com)

17



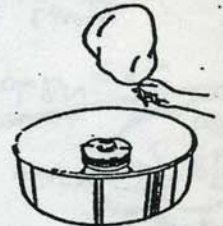
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18



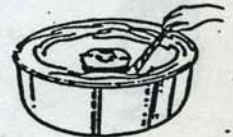
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19



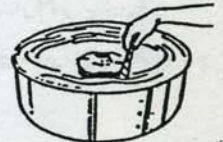
15



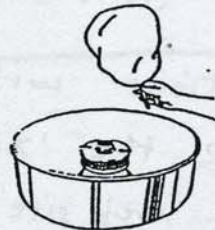
20



16



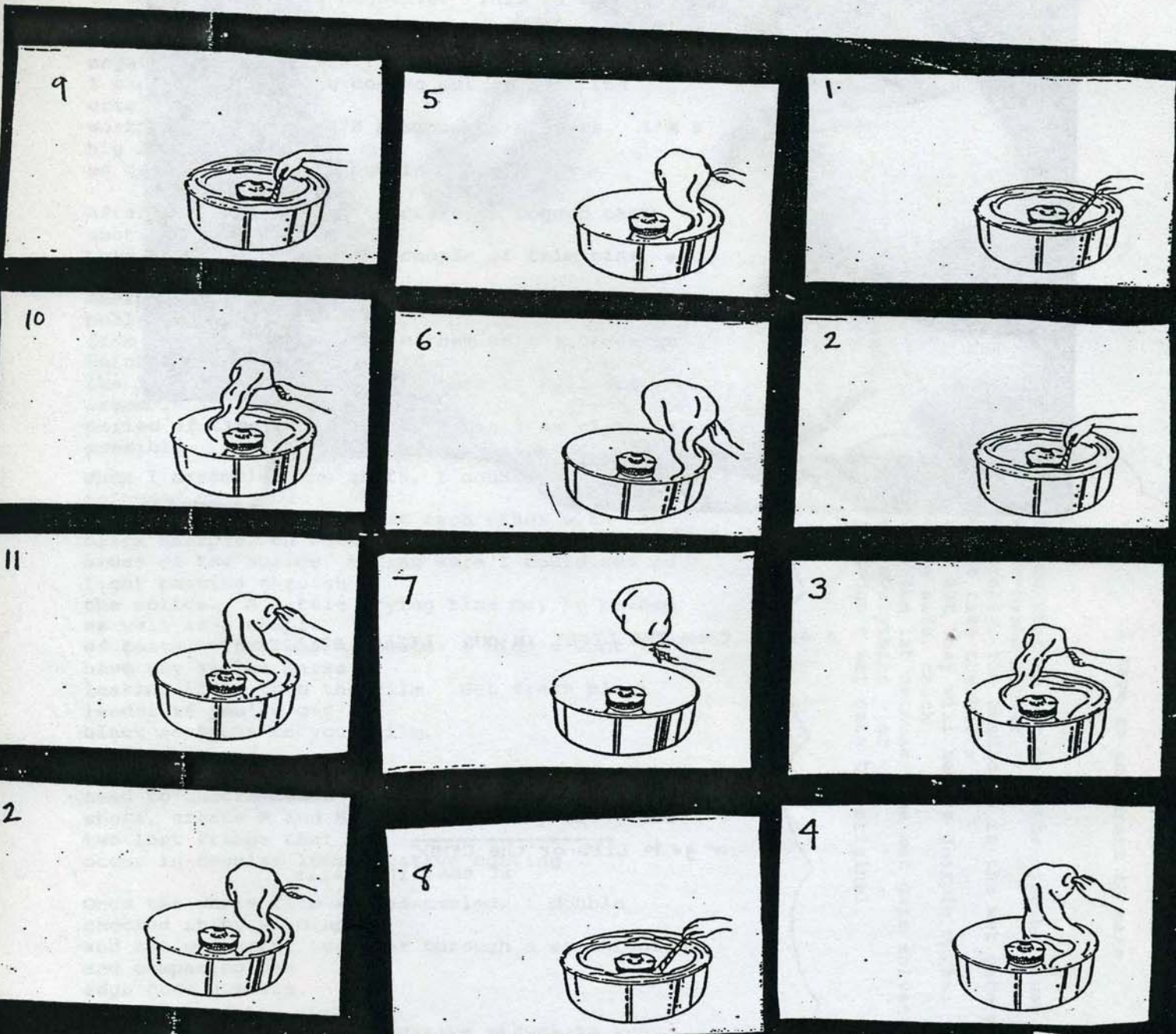
21



INSTRUCTION MANUAL  
AND PARTS LIST  
**ECONO-FLOSS**  
FLOSS MACHINE  
MODEL #3017 AND #3017EX

SMALL FILM PROMOTION IDEA:

I made this with the Econo-Floss cotton candy machine instruction manual for my film all about cotton candy, The World's Smallest Fair Photocopy, then cut:



all the cotton candy you can handle in the grassy field

FLIP MAKE YOUR OWN COTTON CANDY MACHINE FLIPBOOK:  
 the ① cut out white squares and stack them, 1 to 21, #1 on top.  
 MACHINE ② staple them on the left side: ③ flip  
 you may want to fan out pages for easier flipping



Helen Hill



a still from THE LIGHT IN OUR LIZARD BELLIES.

**From:** Sarah Abbott <neewa@mail.a-znet.com>

or go to LIFT or the CFMDC  
if emailing fails.

A good way to save money yet retain a fresh "negative" of your positive hand processed film is to have a positive workprint made from the positive original that you hand processed. I did this for THE LIGHT IN OUR LIZARD BELLIES (1999). Sebastjan Henrickson at Niagara Custom lab in Toronto gave me a workprint without my having to make a duplicate negative. This is one of the great things about reversal film that can be developed either as negative or positive. I had identical edge coding put on both the original and the workprint because 7378 has no key numbers. I'm a big logger of shots so did this before I cut into the print.

After I had locked the picture, I logged each shot in the film. I then gathered together a couple of trim bins, a loop and a black Sharpie in a cleaned workspace. At the bench, I pulled the shots from the original and hung them in the order in which they appear in the film in a trim bin. I chose to pull and assemble in the same period of time to keep the original as clean as possible.

When I assembled the shots, I double-spliced and coloured over the space where the shots meet each other with the black Sharpie, on both sides of the splice, making sure I could see no light passing through the splice. A little drying time may be needed, as well as a couple of coats. That was my taste: I didn't want to have any splice marks leaking light into the film. Get fresh black leader if you've got black sections in your film.

With this "positive cutting" method, there is no need to checkerboard shots, create A and B rolls, or worry about the two lost frames that occur in regular 16mm negative cutting.

Once the whole film was assembled, I double checked it by winding it and the workprint together through a synchronizer and comparing the edge code numbers.

I then had a duplicate negative struck to run answer prints off of.

If you want to wet gate the original, use a water-based marker. The chemicals in the wet gate process won't take the marks off, but they will remove Sharpie marks.

Good music, patience and snacks are recommended - it could be a long night!  
Good luck.

I have an amendment to make:  
If you want to wet gate the original, use a water-based marker. Generally, the chemicals in the wet gate process won't take the marks off, but they will remove Sharpie marks. To be extra safe, check with the lab because some wet gate solvents take off everything - or just don't wet gate the original.

I have an amendment to make:

## How to put leader on your finished workprint or negative so others can figure it out!

The first step to assembling any roll of film, or even completing a roll to pass off to another person, is to leader it up. If you can do this you can assemble anything!!

Leader is useful to negative cutters if you send them your cutting copy (C/C), to the lab, and for projectionists. Remember, no matter how many rolls you make, all the leaders must match, even your soundtrack!

here is a good leader recipe for 16mm negative head leader:

You will need:

Lightstruck (basically previously unexposed film used as a kind of fill. Since it is just camera film it will have the same dimension perforations as your negative)

Negative SMPTE Countdown leader

Black leader with a negative pitch perforation

Remember that the distance between sprockets and their size depends on whether the film is intended to be a negative or positive. Negative camera film, splicing supplies for negative cutting have negative perf. while the final projection copy and your workprint or cutting copy is positive perf.

You shouldn't take any old piece of black leader and insert it in your negative! Make sure it's negative perf (and clean!).

You will also need:

a hot splicer to make the final splices

scissors to make the initial cuts

paper tape to hold together the initial cuts (not on the good picture! Only on the waste frames!)

A synchroniser to measure frames and footage.

Start with 20' lightstruck for negative assembling/cutting (7302 fine grain release positive stock is ideal for negative assembly) or use white leader, for positive assembly and sound rolls if you like. Follow this with a SMPTE countdown (the 8, 7, 6, 5, 4, 3, in circles, ending with a 2 (where your sync beep will be on the sound roll, if using 'level sync.' meaning they have the same footage). After this comes 47 frames of black! The leader should be a standard; it is the body of your film that you can be creative with... finally after all this comes your first frame of picture (ffop).

If you are splicing together a 16mm negative and you want to be able to print them properly (or get a lab to do that for you) you will need to provide sync points. After you've attached all of your leader elements and you've attached your first piece of the body of your film, use a synchroniser to mark a sync point at the head of your negative.

(If you haven't seen one, a synchroniser is a row of ganged sprockets all one foot in circumference that all move together as a unit so any pieces of film run through it all are forced to move at the same pace. Since each revolution measures a foot (the circumference of the sprocket) a counter on the synchroniser tells you how many feet of film has been wound through it. The front-most sprocket also has a movable disk that labels each of the frames: 0 through 15 for 35mm film (16 frames per foot) or 0 through 39 for 16mm film (40 frames per foot))



Anyway, with your film in the synchroniser find the ffop and set the frame marker to 0 and zero the foot counter. Then roll backwards 15' from the ffop (again to a 0 point). That frame is your printer sync, or head sync. Mark that frame with an 'X' and hole punch it. It would probably be a good idea to zero the footage counter again since all your measurements you give to the lab should be taken from the head sync. Write an 'H' on the left side of the 'X' and an 'S' on the right, followed by the roll and show title on the right side. ie. A ROLL "The Spot" (where in this case "The Spot" is the production name!). At the start of the leader you should label it: (starting at the beginning of the film working towards the picture) HEAD A ROLL "THE SPOT" N.F.B. ORIG. COL. NEG., for example. (Here we are telling whoever handles your negative that: This is the start of the roll (HEAD), that it is the A ROLL (16mm negatives have at least an A and B roll and maybe more) that the film is called "The Spot" so the lab doesn't try to print the A roll of "The Spot" with the B roll of "My Rabbit, Chompy", that the production company is the N.F.B., and that that this is an ORIGINAL COLOUR NEGATIVE.) Oh, and remember, always write on the emulsion side of 16mm film using a permanent marker, preferably black (although red is common for the sound roll). Now roll ahead and assemble the rest of your show until you finish the last shot.

Eventually you will come to the...

Tail leader:

make a clean ending for your film, this way people know when to clap, for sure!! Here you should use use 3-4 ft. black leader at the end, followed by a tail academy leader. If you'd rather, you can replace the academy with another 3-4 ft of black, and finish with white leader. Your film won't have the fancy FINISH frame if you don't use the Academy but no one will probably notice.

However, if you have more than one roll, then put tail sync points on all rolls, ideally at an even footage, such as 420' 00 frames, as opposed to 420' 05 frames. Mark the sync points with an 'X' and hole punch it. label a 'T' on the right side and an 'S' on the left followed by the roll, ie. A ROLL, or C/C, (cutting copy), etc. and put the show title after it in "", also on the right.

If you're simply preparing a cutting copy or workprint you can tape splice your film together instead of using a hot splicer which are needed if you are splicing negative. Double splices are always a good idea especially if you want to project whatever it is you are splicing!!

Oh, and an aside on the wonders of paper tape...

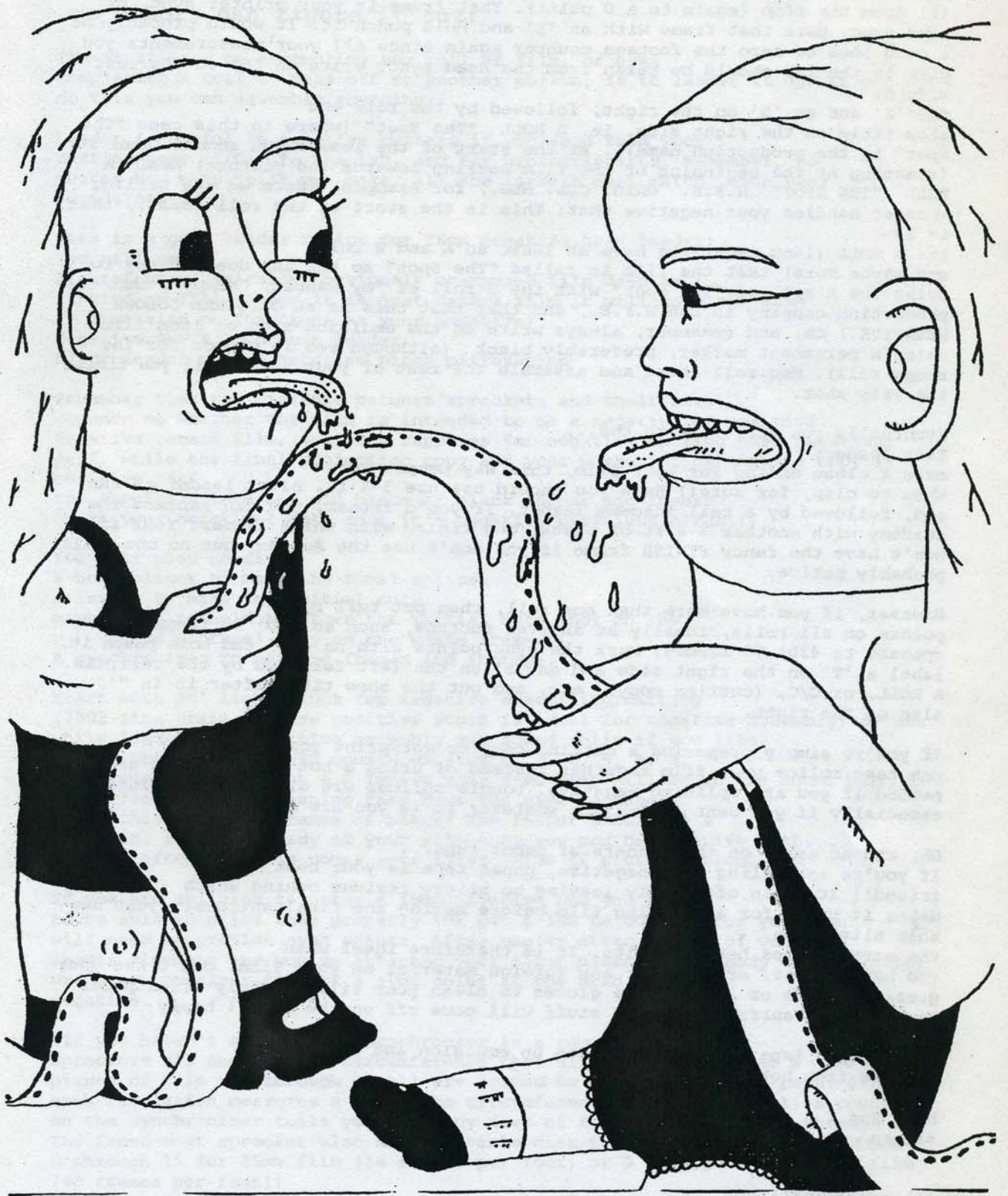
If you're assembling your negative, paper tape is your best friend!! It pulls off easily leaving no sticky residue behind which makes it great for assembling film before making the final splices...just use thin slivers on the scrap frames between edits. It is therefore ideal when you have a hair, or lint, or any foreign material on your film. don't use your greasy fingers or linty white gloves to clean your film, lightly stick paper tape to it's surface and most stuff will come off on the tape!! happy assembling!  
also, paper tape is great to clean up emulsion and cement residue from hot splices!!

have fun,  
siloen

[siloend@hotmail.com](mailto:siloend@hotmail.com)

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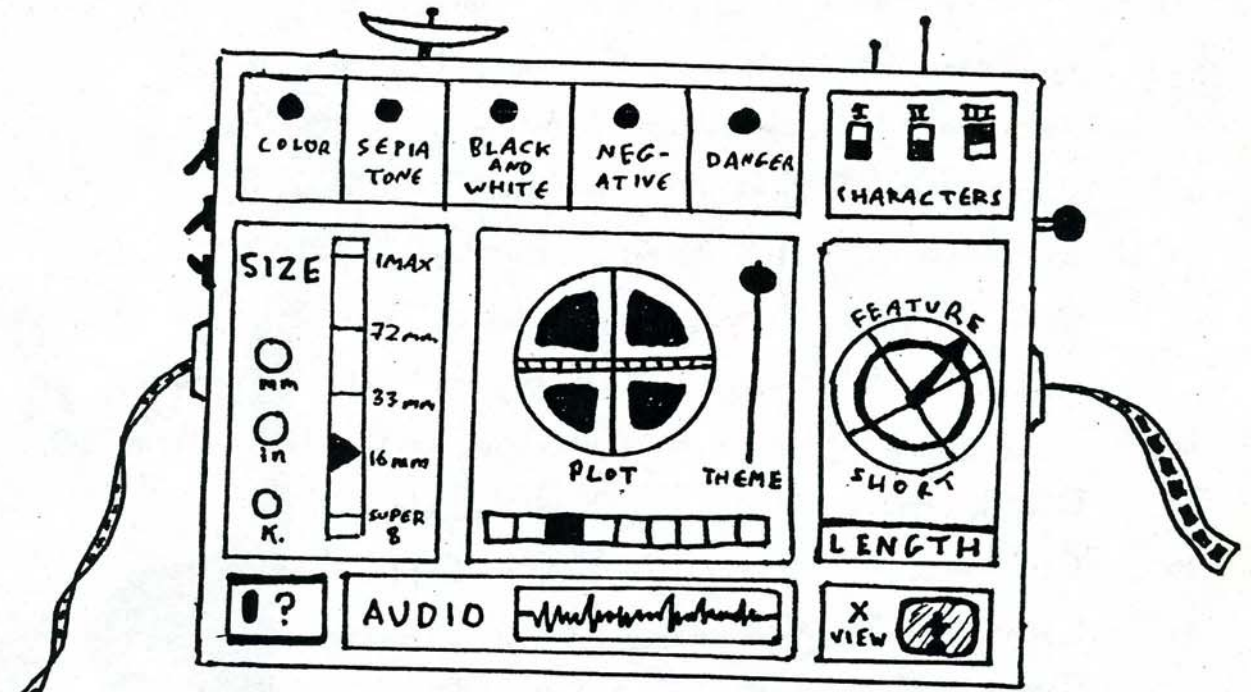
[siloend@hotmail.com](mailto:siloend@hotmail.com)



## IV. Handprocessing, Tinting, Toning

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- 52 Richard Reeves, Where to Find a Film Processor, Pender Island, BC
- 58 Gary Popovich, Bathtub Processing and Toning, Toronto
- 60 Helen Bredin, Processing in Cuba, Halifax
- 61 Elijah Aron, Chemicals are Friends, Los Angeles
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- 80 Ken Paul Rosenthal, Antidote for a Virtual World, San Francisco
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- 91 Alex MacKenzie, Fast and Easy, Vancouver
- 92 Helen Hill, Film Bee, Halifax / New Orleans
- 93 Elijah Aron, Secret Message, Los Angeles
- CK COVER Amy Lockhart, Two Girls Drool, Vancouver



STANDARD • AUTOMATED  
FILM • PROCESSING • UNIT

PR-G3 model G-3 8-16-35mm  
film processor ..... N \$ 85.50 (USA)

Chambless Cine Equipment

Route 1, Box 1595

Highway 52 West

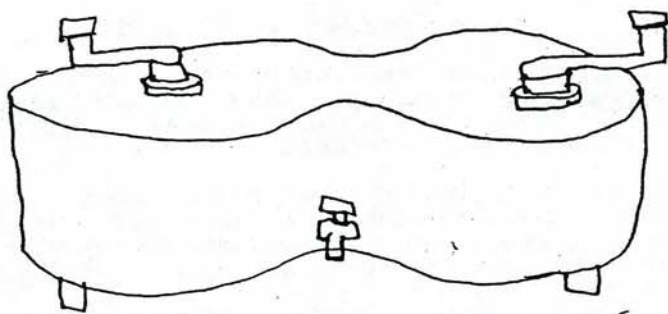
ELLIJAY, Georgia

30540-9723 USA

fax @ 1.706.636.5311

Kinda looks like this ↘

Handprocessor



good for super 8 / 16mm / 35mm (100' of film)

RRR

# BATH'TUB FILM PROCESSING & TONING BY GARY POPOVICH

## I. BATH'TUB FILM PROCESSING

### INTRODUCTION

You should read all of these notes carefully before you buy any of the items listed. These notes and this system were developed to suit my needs at a particular time and in a particular space...you'll have to do the same.

There are numerous ways to process and tone your own movie film. I chose open trays in my bathtub because it gave me darkness, running water, and most importantly I could work at any time in my own space, at my own pace. I was also interested in working directly with the surface of the film emulsion by using both suggested chemicals and anything available. At the very least you'll usually be putting some scratches on your film when you use this method — my interest was in working with scratches, water blotches, polarization, split toning and image fragmentation. However, if you're careful and adapt this system slightly (for example, using shorter lengths of film, using a rack system and deeper tanks, etc.) you can get lab quality images. In fact, I've often processed clean, pristine images in my bathtub; it's just that this system lends itself to experimentation and an idiosyncratic, personal approach.

These notes are a revised version of workshop notes I first wrote in 1986. The original notes developed out of a series of workshops given by Jeffrey Paull at Sheridan College in 1982.

### THE TOOLS YOU'LL NEED: (B&W FILM, EXCLUDING CHEMICALS)

**4 OR 5 PLASTIC TUBS** at least 10 cm deep and about 40 x 30 cm to contain the chemicals, water and film during processing. I use a larger tub for the water — it helps the wash. I put 3 tubs in the bathtub and the others on the floor next to the bathtub (see diagram 1). You'll need 5 tubs if you plan to use a stop bath (more on that later).

**1 WATERPROOF THERMOMETER** (for darkroom use). It should go to at least 50 C. You don't need a fancy thermometer — a cheap one is fine for mixing chemicals (this B&W processing system doesn't require precise temperatures within a fraction of a degree).

**1 PLASTIC FUNNEL** for mixing chemicals and NO OTHER USES.

**1 PLASTIC 2 GALLON PAIL** for mixing chemicals.

**1 LONG PLASTIC OR WOODEN SPOON** for stirring chemicals AND NO OTHER USES.

**1 PHOTOGRAPHIC SAFE LIGHT.** You can buy them in all sizes, styles and colours. You'll have to check the info sheets available on film stocks to determine which colour you'll need. I made my safe light for a few dollars with a simple socket and electrical cord and a few inexpensive light bulbs. It's not recommended but it worked for me — I kept the light at least 4 feet away and covered it with a wash cloth to reduce its brightness.

**PLASTIC JUGS:** 3 or more 1-gallon plastic jugs to store chemicals. You can use recycled jugs (household bleach jugs are good) or buy them for a few dollars each at a darkroom store. You'll need one each for the developer, bleach and fixer. If you use a stop bath you'll need another jug; you might want to store two types of fixer, one with a hardener, one without (I'll explain why later), so you'll need another jug for that. If you're into toning, you'll need a few more jugs.

**TIMER OR CLOCK:** If you feel relaxed and comfortable and reasonably accurate you can just count. If not, use an expensive darkroom clock or an inexpensive watch that glows green.

**A PAIR OF LOOSE FITTING RUBBER GLOVES.**

**A LINE AND CLOTHES PINS:** Clothes line, string, wire — anything on which you can hang your film to dry.

**A SPLICER AND PROJECTOR** so you can watch your images when you're done.

## STOCKS:

You can process most B&W movie film — Super-8, 16mm, 35mm (Kodak, Ilford etc.) I've used mainly Kodak B&W camera and printer stocks. I always ask Kodak to send me their free info sheets on the stocks I use — they give you good starting points for a developer and development times. (Info sheets can also be found on Kodak's website at [www.kodak.com](http://www.kodak.com))

I'd recommend doing tests and making notes so that you can repeat what you do, if you need to. Printer stocks aren't designed for camera use, but they create great high contrast images, and hi-con is best for split toning. With most of the printer stocks you'll have to do tests to find an ISO to shoot at (most of them are around 2 to 12 ISO, so if you're shooting indoors you'll need a lot of light. I've used 3000 watts at 4 feet to get a good indoor image).

I'd suggest you process at least a couple of rolls of film before you begin toning to familiarize yourself with the process and provide images to choose from — stuff you don't mind losing (as you become familiar with toning you'll likely watch the emulsion slide off the film a few times).

## EXPERIMENTATION:

You can process neg as reversal and reversal as neg, you can solarize images, you can push and pull development, you can use spray bottles filled with developer to create spotted development. In the beginning you should consider everything you do as a test...experiment, take notes. Film things you care about but that you don't mind losing.

## THE CHEMICALS YOU'LL NEED:

**DEVELOPER:** If you're filming with regular B&W stock check the info sheets for a recommended developer and use it or an equivalent. I use D-19 or other hi-con developers for my hi-con images. I usually put 2 gallons of developer in the plastic tub, and that's enough to do about 400 feet of film or more.

**STOP BATH:** For a few bucks you get a small bottle of stop bath which helps stop development. I don't use it; I wash my images really well after development and don't worry too much about critical development times.

**BLEACH: A REVERSAL BLEACH** — 1 litre of water to 9.5 grams of potassium dichromate and 12 ml of sulfuric acid (concentrated). Stir the potassium dichromate into the water, then add the sulfuric acid. You can find these chemicals locally although they aren't immediately accessible — you're dealing with chemical companies and highly toxic and dangerous chemicals. It's probably a good idea to share reversal bleach with others interested. Again, I'd use about 2 gallons, or about 8 litres, of bleach to a tub. I found I could do between 400-800 feet with this quantity.

**FIXER:** If you intend to tone your film, use a non-hardening fixer; if you don't, use a fixer with hardener to protect and preserve your film. Both are available. Some fixers come with hardener in a separate container that you can mix in. Fixer life is harder to gauge, especially with toning factored in; if you're doing a lot of footage you should have a few packages of fixer around.

Mix the chemicals ahead of time so that they can cool to room temperature before you begin processing. I work with development times based on a room temperature developer (development time decreases as the temperature of the developer is increased).

Leave a bit of space between the different chemicals i.e. between the plastic tubs in your bathtub (see diagram 1) so that you don't splash one chemical into another and contaminate it. I could only get 3 plastic tubs in my bathtub, so the other tubs would sit outside and next to the bathtub.

## GETTING STARTED:

Make sure your bathroom (or work area) is light tight. After a few minutes in the dark you may find a bit of light seeping through a crack in the door or window. If you can see your hands or objects around the room then there's too much light leakage (especially for faster films stocks). For regular camera stocks such as Plus-X, Tri-X etc., it's recommended that you work in total darkness; for slow

printer stocks you can work with the recommended safe light.

Always wear rubber gloves! These chemicals are toxic. I had a little pin hole at the end of my glove that let in reversal bleach, and I thought it was insignificant. My thumb turned prunish and took 9 months to heal, not to mention that these chemicals can make their way into your bloodstream. Be careful about splashing chemicals onto your clothes or skin.

## PROCESSING:

**1. DEVELOPMENT:** Determine your development time using the film stock info sheets as a starting point. Reversal is usually processed for about 2-3 minutes, negative about 5-7 minutes. The printer stocks require shorter development times (some require about 3 minutes for neg, or 1-2 minutes for reversal). I've found that printer stocks shot on an optical printer require a longer development than when they are shot with outdoor lighting. Do your own tests.

Set up your darkroom space, get a sense of where things are, then turn off the lights. I take my 100 ft. 16mm roll, or 50 ft. super-8 cartridge, and wind off a portion (you can pull the super-8 out, or break the cartridge open). I usually use 30 ft. lengths at a time because that's what fits comfortably into the tubs of chemicals. If you put too much film into the tub, the film will get tangled and stuck together, causing uneven development (which may be what you want). This system requires that I break off 30 feet indiscriminately and in the middle of a shot — if this bothers you, you can always use bigger tubs and more chemical and do 100 feet at a time.

Once you've broken off the length you will work with, put the remainder back into a light tight can, and dump the mass of film you have in your hands into the tub of developer. Start counting immediately. If you want even development, don't wind your 30 ft. off the reel directly into the tub — gather it up in your hands and dump the whole mass in at once. (It may be awkward at first, but it gets easier with experience.) Gently work with the film in the developer — separating it from itself, submerging it (you may have film sticking up out of the developer). You

## NEGATIVE IMAGES:

**1. & 2.** Develop and wash as above.

**3. FIX:** After the wash, go directly into the fixer. You're still in the dark, or with the safe light on. Check the info sheets for fixer time — it's usually about 5 minutes. The rule for fix time is twice as long as it takes to clear the film (when the milky whites become transparent), which is usually about 2 minutes. Then you can turn the light on for the remainder of the fix time. The fixer clears the film and rids of chemical by-products and residual developer.

**4. WASH:** Wash again for about 5 minutes. The info sheets probably will tell you to wash longer and it's always a good idea. I often wash for just a few minutes because I'm in a hurry to do a lot of footage and because I'm not worried about the longevity of my images because I'm usually reprinting and reprocessing. If you're at all concerned, wash longer — up to 10 minutes — or use a hypo clearing solution to cut down on wash time, help preserve your film, and save water.

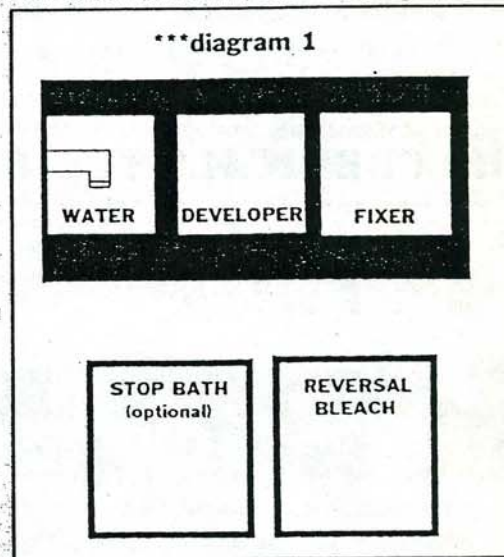
**5. DRY:** Finally, hang your film to dry. It gets all tangled like a mass of spaghetti, so you need a clean surface to do the untangling. I

must keep the film moving to provide fresh developer to the surface of the film, because as the developer's chemicals come into contact with the film they become exhausted.

**2. WASH:** After development, lift and drain the bundle of film and dump it into the water tub. In your wash you should always use running water (room temperature, like the chemicals). Again, gently move and separate the film in the wash. Wash for 1-3 minutes. If you're using a stop bath, it cuts down on wash time and can preserve the life of your fixer. I cup this step because of space considerations, and I wash a bit longer. There's a tendency to cut down the wash time because of impatience — it may mean you allow the film to overdevelop (because of residual developer on the surface of the film) and it could reduce the life of chemicals that the film goes into next.

Always wash your film before moving on to another chemical.

The next steps depend on what you want — NEGATIVE or REVERSAL images.



use newspapers and hang the film to dry on a clothes line strung across the apartment. As the film dries, go back into the washroom and do another 30 feet. It seems difficult and involved at first, but it gets quite easy, and it's really rewarding and a thrill to watch your own images developing.

You can now project, or reprint your negative images. You can also tone them at any time in the future. Remember, a non-hardening fixer works best if you plan to tone your film, and hardening fixer is best to protect and preserve your film.

Finally, a few additional techniques. Instead of dumping your film into the tub of developer, put the film into a dry tub and try filling a spray bottle with developer and spraying the surface of the film, then proceed as usual through the subsequent steps. Or try solarizing with the Sabbattier technique — mid-way through the development stage, flick your washroom light on and off very quickly, or use a quick burst from a flashlight. This will cause a partial reversal of the tones — a stunning, radiating effect.



# 2. TONING

I've experimented with different types of toning techniques. Remember, this info I'm outlining is not a rule — it's a system that worked for me. Experiment for yourself. I prefer toning negative hi-con images. You should try various stocks and techniques to see what you prefer — they work differently.

The best type of film to tone is one with a fair amount of density, i.e. blacks. That's what gets toned. Toning can cost a lot of money. The toners are expensive and don't last that long. If you're doing a lot of footage you'll need a lot of toner to ensure that all of your film will be submerged, or at least enough to swish around periodically and get a good potent colour to take to the film.

What follows is a rough sketch — there is no one method. The process involves looking, studying, guessing, chance and repeated attempts. Experience and note taking are your guides.

## BATHTUB FILM PROCESSING (CONT):

### REVERSAL IMAGES:

**1. & 2.** Develop and wash as above.

**3. BLEACH:** After development and wash, transfer the film to the bleach, and gently move and separate the film. Bleach for 30-40 seconds. Don't splash — remember, this chemical is extremely toxic, so don't get it into your eyes, nose or mouth, or onto your skin. If you do, wash it off immediately.

**4. WASH:** Transfer the film back into the water. You may now turn on all the lights. Wash for 2-3 minutes. Your water will be quite yellow — I dump it entirely at least once through this wash cycle. Your film will look pale milky white. Don't worry, you haven't lost the images.

What you have done is developed the exposed silver halide particles and turned them black, then removed them through the bleach stage. So what you have is clear transparent areas, and milky white areas. The milky whites are the unexposed silver halide particles.

**5. RE-EXPOSE TO LIGHT:** After washing, remove the film from the water and hold it near a regular light bulb for about one minute. You are exposing the rest of the unexposed silver halide particles on your film.

**6. SECOND DEVELOPMENT:** Next, dump the film into the

developer again. I use the same developer (yes, you are working with the lights on now). You are developing the remaining silver halide particles you just exposed to light, turning them to dark silver. The hi-con stocks take only a minute or so; other stocks take a few minutes. It's a process you can watch, so you can determine when your blacks are black enough.

**7. WASH AGAIN** for 3-4 minutes. You now have dark areas and clear areas, in a reversal image.

**8. FIX:** Then put your film into the fixer. You don't really need to agitate the film much in the fixer — just a few times is sufficient — but you usually have to sit there with it to make sure all the film is submerged. Fix for 1-2 minutes.

**9. FINAL WASH:** for 5-10 minutes.

**10. DRY.**

Once you've done your entire roll of film and dried it, splice the processed lengths together. The first batch goes onto the empty reel first — and remember that the image feeds into the projector upside down, emulsion facing out. (If you wet your fingers or lips and touch the film surface, the emulsion is the sticky side.)

**YOU SHOULD ALWAYS DOUBLE SPLICE THE FILM.**

### FINALLY:

#### PROJECT YOUR FILM

It takes just over an hour to actually develop 100 feet. The whole process, though, is long and takes a lot of work. I find I need anywhere between 6-12 hours at a stretch to feel good about what I'm doing, since it takes a long time to set up and get organized and it takes time to clean up (stains in the bathtub etc. can be removed with cleanser, water, brush). If you can keep some of your tools set up you can work for shorter periods, on and off.

Remember, this is my method. Yours might be different, tailored to your own needs. Experiment and be prepared to lose work and (seemingly) to waste time. It's all part of the process

Finally, this is all technique. At first you may be able to dazzle people with your images, but it can become empty technique without some thought and feeling involved. That's where your own personal investment has to come into play.

## THE TOOLS YOU'LL NEED

**TONERS:** I use Berg toners in sepia, blue, gold and copper. You can buy 1 quart or 1 gallon boxes. Warning: the Berg Colour Toning System is actually a box of multi-coloured tints; tints are dyes that colour the clear areas of your film. Toners chemically transform the black silver of your film into another chemical/colour.

**ABOUT 4 PLASTIC JUGS:** for containing the toner bleach and the toners. I recommend 1 gallon jugs — even if you don't buy the 1 gallon boxes of toner, you may do so in the future (it's more economical).

**3 CONTAINERS: FOR TONING.** I've used different systems. The best for me is 3 plastic garbage pails (about 2 feet tall) with lids that can be fastened shut. I use 3 different coloured pails for the 3 different toners I'm using. You can use smaller containers, but I find I need this size. I like to work with about 30 ft. lengths of film.

**1 PLASTIC 2 GALLON PAIL:** you already have this.

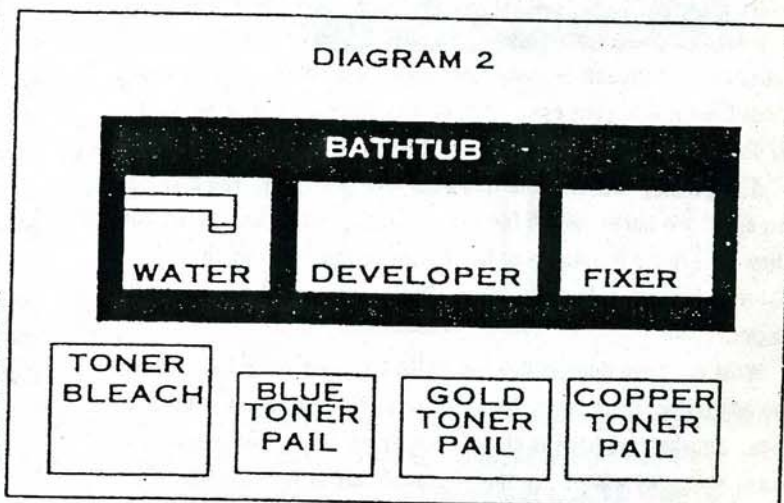
**1 TUB FOR DEVELOPER:** you already have this.

**1 TUB FOR FIXER:** you already have this.

**WEIGHT:** Something to keep the film submerged in the plastic pail (I use a 400 ft. super-8 take-up reel).

I only buy the sepia toner for the toning bleach included in the box; I like the other colour toners better, and find less use for the sepia. This sounds like a waste, but the other toners have no bleach included in the box. I have been able to purchase an order of bleach alone in the past because I made a very large order of chemicals — try asking around. Kodak sells a separate toner, but I personally don't like it much; it seems less potent. You can also mix your own toner bleach (I tried but didn't find a formula that worked for me).

DIAGRAM 2



## INSTRUCTIONS:

### USE GLOVES!

Mix the toners according to package directions (later you might want to experiment with greater degrees of potency).

Mix the bleach.

Put each of the toners in separate pails. You don't need to keep these three toner pails in the washroom at all times — it gets cluttered so I carry mine back and forth (see diagram 2).

I start by submerging my film in the pail of bleach, using a super-8 take-up reel to keep all the film submerged. The blacks must be turned to a sort of beige colour. This takes a long time the first time you submerge a particular piece of film — anywhere from 5-20 minutes, sometimes more. The time depends

on the stock and the density, as well as the strength of the bleach. The bleach lasts a long time but it does diminish in strength; once it starts taking 30 minutes or more to work it's time to dump it. You might have to re-arrange the film in the pail of bleach — sometimes the film sticks to itself so tightly that the bleach can't get into some spots to change the black to beige.

Once you've transformed all the blacks to beige, pull the film out, drain it and wash for a few minutes.

Then put the film into one of the toners for about 5 minutes or so. You can then wash for 1-2 minutes, dry, and project your film. You will have whites, and the black will have been replaced by the toner colour you chose.

## TONING (CONT.)

You can continue the process. When I begin, I often start with yellow because blue can be too powerful to begin with. In yellow, the film will turn a brownish colour in the first few minutes (it gets more intensely yellow the longer you leave it in the toner).

For the first round of toning I usually leave the film in for a few minutes, then remove it and wash. I then put the film into the developer for just a few seconds — I can't say how long exactly. Sometimes it's 10 seconds or so. The developer will take the toner out and start returning some of the blacks. Quickly remove the film from the developer and wash it. This process will give you split toning and image fragmentation later.

I then put the film back into the toning bleach, which takes away the blacks that have re-appeared and prepares the film for retoning. This bleaching usually takes only a couple of minutes.

Wash again. Now place the film into another coloured toner — try blue.

I continue this cycle of re-developing, bleaching and toning 2-3-4 or more times. After a couple of cycles of yellow and blue, I might reverse the process. That is, I bleach first, then wash, then re-develop, wash, and tone. This further fragments the image. You must experiment and observe. Keeping notes can help.

You can fragment the image so much that you have total abstrac-

tion. Sometimes the emulsion just slides right off (not often). Sometimes the film becomes so heavily scratched that you lose the image. Again, experiment.

Once you feel you've done enough to the image, stop. Wash for a few minutes, dry and project it. You can always continue the process at any time in the future.

If you feel that the image is too dense — i.e. it's thick with developer residue, toner and by-products — you can thin it out. A good test is to see if you can look through the image. Is it semi-transparent? If it's not, if you can't see through it even though it's coloured, the projector light will not be able to pass through and the screen will be dark. By placing the film in the fixer briefly you can thin out the film. If it stays in the fixer too long you lose your image — it slides right off or thins right out. I often fix the film for a few seconds, rinse, and try looking through it again. If it's still too dense, try fixing again. You might lose a few before you get it right; your eye must become experienced.

**N.B. AFTER YOU'VE FIXED THE IMAGE YOU CANNOT TONE IT AGAIN. SO MAKE SURE YOU'VE TONED AS FAR AS YOU FEEL IS NECESSARY BEFORE DOING THIS. IF YOU DO TRY TONING AGAIN AFTER YOU'VE FIXED YOU'LL LOSE THE EMULSION — IT COMES RIGHT OFF.**

printed before in:



(Reprinted from April 1995, Vol. 14  
Issue 6 & May 1995, Vol. 14 Issue 7)

here's my portrait:

010101  
010101  
010101

good luck  
gary

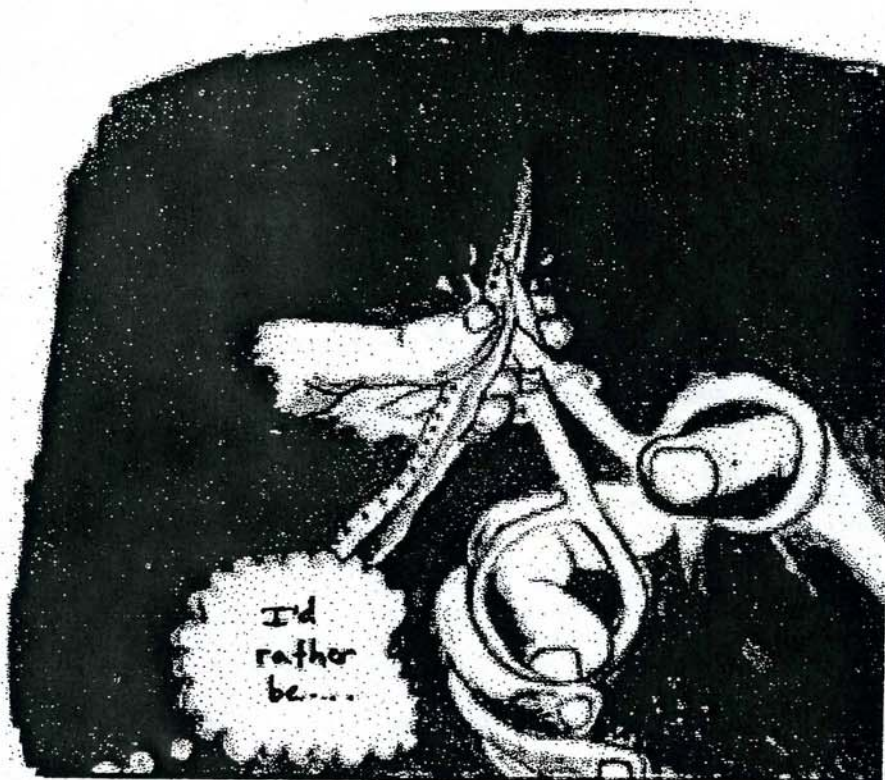
Gary Popovich may be  
contacted through LIFT  
in Toronto.

Handprocessing is handy.

please note:  
Kodak no  
longer makes  
7378.  
see page 3.  
H. Hill

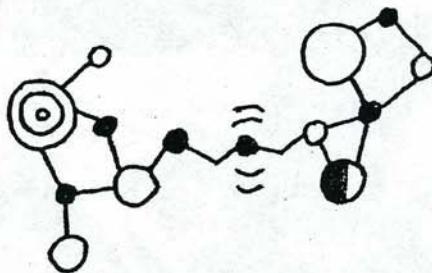


I was on a family vacation. It was the first time in a long time that we'd all been away together. It was my aging parents and me and my older sister - the spinster sisters - at a resort in Cuba. I wanted to film our vacation. I had brought 6 100' daylight spools of 7378 and a very old 16mm camera called a Cine Kodak - it looks like a Kleenex box with a little lens on one end. Most people test out their gear before trying to jump in and film with it. Not me. I'd been given the camera months before and I kept thinking about testing it out but I never did and then it was too late so I packed up the camera and the film and some chemicals. I decided I'd test it when I got there. In Cuba I finally took a closer look at the camera. I tried to load it and, to my horror, found that it had a double claw system to move the film through the gate. My film was single perf film - only perforated along one edge. I tried to force it to work but the second claw punched holes and the pressure caused the film to ride up out of the gate. To most people this wouldn't be a big deal but to me it was. It was a symbol for the way I lived my life. I was severely disorganized and a procrastinator. I had to film with this camera. I decided I would trim the film down so that it would clear the second claw. I got into our hotel room's stand up closet with some black tape, a daylight spool of film and scissors. I figured that the width of the edge of the scissor blade was about the width of the strip that I wanted to cut away so I tried to keep the blade flush with the edge of the film that I was cutting along. I sweated all over the film and I felt like screaming but after an hour and a half I had 100' of 13 or 14 mm film. It ran through the camera well enough. I filmed. It was so hot outside and extremely bright. I hand processed in the bathroom sink that night. I used waste paper baskets, ice buckets and wine caraffes to hold the chemicals and since there was no such thing as cold water I had to keep going to the hotel bar for ice. The film came out black. It was not unreasonable to think that it was a problem with the processing. I tried again. This time the film was mostly black with a tiny area that was clearer. I recognized it as a shadowy area on a veranda... so the film was being exposed too much. Of course having hardly looked at the camera before I didn't even know if the lens came off. I fiddled around with some metal sliding bits and pieces. It came off. I couldn't tell if the apperture was stuck wide open but - judging by the film that seemed to be the problem. Miraculously I'd brought a series of Neutral Density filters to tape on if I needed to. The next day I filmed another test and used the filters to stop up. That night I processed. There was a range of exposure on the negative. It looked a bit weird but there was stuff there. So I got back in the closet for a few more hours and cut down all the film. Back in Canada I hand processed all of the film to a negative. All the footage was a bit blurry because my method, although an improvement over the original



problem created another problem. Having the film engaged on only one side also made the film not register properly. It got through the gate but not with the right pressure. So, the footage sometimes is a blurry waterfall and sometimes it's ok. It was fine with me though. I had brought my super 8 camera and my stills camera and between those three cameras I got some nice images of my odd family. It wasn't just fine because of this but because I will always remember this trip and be inspired not to be so disorganized when such a good opportunity comes along again. It also showed me how useful hand processing can be. I know this probably doesn't rate on the list of weird places that people have hand processed - it wasn't a ditch in India, the back of a tractor trailer or even a public washroom but it was good because it helped me - in the end - diagnose my own camera at a fraction of the price and a fraction of the time that it would have done had I sent it to a lab. So that's really good. I know I didn't talk about Cuba at all and I'm sorry about this but what I have written is far too long. If you want to know about my thoughts on Cuba or my experience of filming in Cuba you can email me at [helenbredin@yahoo.com](mailto:helenbredin@yahoo.com). Also, I got the lens on the Cine Kodak camera fixed for twenty-five dollars - it was stuck wide open and it shoots double perf film very well.

CHEMICALS  
ARE  
FRIENDS



## Developmental Experiments in the Basement Bathtub Lab:

A Brief Lab Report by Becka Barker <starwipe@peaching.com>

### INTRODUCTION (what I thought).

I was first introduced to handprocessing black and white film stock a couple years ago by my filmmaking friends, Helen Bredin and Helen Hill. About half of all film I've shot since then I've processed this way, for reasons of expediency, cost, aesthetic choice, and just the rush that comes from determining as much of the physical process of filmmaking as possible. Using 16mm high-contrast, fine-grain film stock designed for optical soundtracks (Kodak 7378), I am consistently surprised by the range of midtones it's capable of producing. But up till now, I've had limited experience with different developers. So I was curious to discover what would happen if I tried different developers on this one film stock, keeping the rest of the process constant.

Of course, the idea of keeping all other "variables" totally constant doesn't really mesh with the scrappy DIY look so loved by filmmakers who work this way. Practically speaking, from the little experiments I'm about to describe, there is no way I can solidly conclude that any differences I noticed were due to my developer choice. Other factors influencing the look of the film are amount of agitation, temperature, and age of chemistry (just to name a few); all of these differences are extremely difficult if not impossible to quantify using a friend's basement bathtub. But bear in mind that this increases the potential for happy accidents that defy empiricism. So be ready to embrace it in all it's volatile, messy glory.

### MATERIALS AND METHODS (what I had)

Part 1) the supplies

Developers: Kodak TMAX liquid concentrate, 500ml  
Kodak D-11, powdered (to make 3.8L)  
Kodak D-19, powdered (to make 3.8L)

Stop: Ilford ILFOBATH Odourless Stop bath

Reversal Bleach: from Kodak 5L liquid concentrate

Fix: Kodak fixer, liquid concentrate

Also: 8-10 large commercial restaurant style buckets (the Mediterraneo restaurant in Halifax deserves props for supplying me with eight tahineh buckets). Basically, you need enough buckets for each chemical, plus two washes, and one more designated "dry bucket".

Also: one 500mL graduated cylinder. (you could also probably get away with a glass measuring cup usually used for cooking, but the markings on those are less accurate)

Also: one digitemp (a flat laminated card) thermometer

Also: one chemical/dust mask.

Especially if you're working with powdered chemicals. I know this can be a pricey item, but it's really necessary if you plan to continue making films this way. I know the chemicals may not bother you too much now, but you'll notice the effects in about 20 years when your kidneys stop working.

Also: a small clock with glow-in-the-dark hands.

Or you can just count a lot. Make sure the glow from the clock doesn't hit your film (I kept the clock face flipped down, just checking the times periodically).

Setting: One light-tight bathroom that's no longer used for bathing, in a residential basement.

Kodak no longer makes 7378. Please see page 3



-Part 2) the process

First, with your mask on, mix all chemicals according to their package instructions. With the D-11 and D-19 powders, you have to mix them at higher temperatures (100 or 125 degrees fahrenheit). I goofed and mixed the D-11 at about 30 degrees higher than it should have been, and it STILL worked.

IN TOTAL DARKNESS:

- 1 - developer (various times and developers tried)
- 2 - stop (30 sec.)
- 3 - reversal bleach (60 sec.)
- 4 - water wash (3 min.)
- 5 - flick light on, re-exposing film to incandescent light (2 min)

WITH THE LIGHTS ON:

- 6 - developer (60 sec.)
  - 7 - stop bath (30 sec.)
  - 8 - fix (4 min.)
  - 9 - water wash (5 min.)
- hang to dry on clothesline.

NOTES: I attempted to keep chemistry temperature between 66 and 72 degrees fahrenheit, but working in a basement made the chemistry cool off rather quickly. To combat this problem, I added more hot water with the appropriate dilution of concentrated chemical. Another way to deal with this problem may be to periodically let hot water run in the stoppered bathtub itself (keeping the chemistry in their individual buckets in the tub).

MATERIALS AND METHODS (continued)

Part 3) the experiments

I divided my film into several small strips for experimentation; each strip got a different treatment.

TMAX: This developer should be able to handle different black and white filmstocks capably.

D-11: This developer is intended specifically for high-contrast filmstock, and gives no suggested times for development.

D-19: This developer is also used for high-contrast technical, scientific, or industrial purposes, and like D-11, gives no suggested development times.

USING TMAX DEVELOPER

I think I may have either wound up with a defective bottle of TMax developer, or there was something freaky with the tap water that only affected that developer (the latter is entirely possible, given the sludginess of Halifax harbour). My results using TMax developer were consistently awful, regardless of how I varied the development times from 4, 8, 12, and 16 minutes. I doubt my problem was due to contamination, since I mixed a second batch of Tmax developer and that yielded the same result as with the first batch. Or maybe TMax just does not work well on this high contrast filmstock. In any case, this result totally surprised me.



#### USING D-11 DEVELOPER VS. D-19 DEVELOPER

The difference I noticed between the D-11 and D-19 developers, though both are specifically intended to work for high contrast filmstock, was how they handled different development times. The D-19 seemed to be more sensitive to producing a slightly better range of midtones at 2, 4, and 6 minutes, whereas the D-11 gave a consistently flatter result. Optimum development time for my film, on this occasion, seemed to be about 5 minutes for the D-19 and 4 minutes for the D-11; both developers were at about 70-72 degrees F. Bear in mind, although I did not consciously attempt to try different conditions for re-exposing the film in between the reversal bleach step and redevelopment step, the intensity and time of re-exposure to light probably varied from trial to trial (usually depending upon how cold my hands were at the time). This difference would also have an effect on the contrasty quality of the image. For either the D-11 or D-19 developers, 2 minutes was nowhere near enough development time, and 6 was a little excessive. I would recommend 5 minutes of developing time with either D-11 or D-19 if they are roughly 70-72 degrees F.

Additionally, I seemed to achieve the best results when I used TMax only as a REdeveloper, for one minute. I have a feeling that this may have helped maintain some of my midtones...

I'm going to stop right there with my speculative conclusions; after all, if you are at all like me, you probably don't handprocess your film for reasons of finite exactitude. If this mode of working appeals to you, you can make all kinds of discoveries accidentally. Just make sure you write everything down.

So here is what worked best for me in the end:

#### IN TOTAL DARKNESS:

- 1) 4 Minutes D-11 or 5 Minutes D-19 developer
- 2) 60. sec. stop bath
- 3) 60 sec. reversal bleach
- 4) wash with water, 2min.

#### RE-EXPOSE TO LIGHT (1 min), LEAVE LIGHTS ON

- 5) re-develop in TMax, 1 min.
- 6) 60 sec. stop bath
- 7) 4 minutes Fix
- 8) wash for 5 minutes in running water.
- 9) hang to dry.

DON'T EAT  
THE FILM





### HAND DEVELOPING 7378 AS NEGATIVE

Rate stock at 10 ISO Daylight.

Under red safelight spool film off into container or bucket. (Make sure you test the safelight before you start otherwise you may lose all your film).

After mixing you Dektol developer to a stock solution,

add **Dektol developer** 1:10 for 2.5 - 3.5 minutes @ 20C.

Reuse developer for 400 - 500 ft of film, then dump (use till it's brown and muddy).

Stop-use **stop bath** for 30 seconds or **wash** for 2 minutes.

Fix for 5 minutes using **Film Fixer**. Save fix until HYPO CHECK indicates it is exhausted.

**Wash** for 10 minutes.

**Dry** - (I use a clothes dryer for 5-10 minutes on a gentle cycle. Do not overdry as you will shrink the film and damage it).

### HAND DEVELOPING 7378 AS REVERSAL

Rate stock at 16 ISO Daylight.

Under red safelight, spool off film into container.

Add **Dektol developer** - approx. 3 - 4 min (1:5 @ 20C).

Exposed silver halides turn to black silver. Unexposed silver

halides will remain original stock colour. Use developer 400 - 500 ft. then dump.

**Wash** for 2 minutes.

**Bleach** for 45 - 60 seconds using reversal bleach.

Highlights in original scene are exposed silver halides that turn black and are removed by bleach and become clear. What's left is unexposed silver halides - milky areas (shadow areas in original scene). Save bleach approx. 800 - 1000 ft per gallon.

Turn **lights on** and leave them on. Re-expose film under strong light for at least one minute. You cannot overexpose film at this stage.

**Second wash** for 2 min.

**Second developer** 1 min.

Milky areas turn into black silver. When film edge is good and black -job is done. Don't leave it in too long cause it will start to reduce highlights.

**Wash** for 2 minutes.

**Fix** for 3 minutes.

**Wash** for 5 minutes.

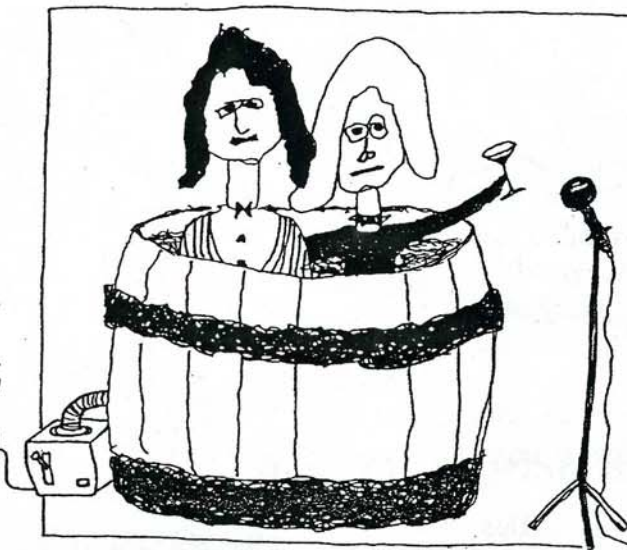
**Dry** for 5 - 10 minutes in a clothes dryer or hang film on a line.

In reversal, if final image is too dark, film was either underexposed or underdeveloped. The opposite is true in negative.

Note: If reversal film does not have crystal clear highlights, you may have to use a sodium thiocyanate in the developers which will clear the highlight areas completely.

When testing developers for reversal process, always use a positive developer (Dektol paper dvpr.) as it is a high acting developer. Do not use negative developers such as D-76 as they are slow acting developers.

\* previously  
printed in  
LIFT  
newsletter,  
Toronto,  
1998.



## In the Chemical Kitchen with Steve Sanguedolce: A Recipe for Contact Printing

by Si Si Penaloza

cartoon by Sisi

If processing and developing film was like a Betty Crocker recipe bake-off, Steve Sanguedolce would be the teenage contestant Gidget on crack. I recently visited Hell's Kitchen (or Hog Heaven) and watched Steve at work. In the span of three hours the man can demystify the whole high brow technophilic altar of film processing. He does not heed any such film handling warnings and has long since thrown out the instruction insert on How to Care for Your Negative. There is no celluloid sanctity in the Chemical Kitchen. He's a bit of an alchemist really, devising his own chemistry ratios and dilutions. Sanguedolce develops his film in plastic industrial buckets, churning it as if he were making butter. With a rubber gloved hand he reaches into the toxic bucket and tosses the film in dektol like spaghetti. I was not surprised when I noticed a black film developing tank a la LIFT sitting, a little dusty, like a totem door stopper.

Like meeting with filmmakers who are designing and scheming alternative processes in the interest of liberating themselves. It's problem-solving empowerment. In this spirit, they take more of the tactile craft of film literally into their own hands. With this do-it-yourself attitude, the filmmaker severs the umbilical cord with that mothership in the sky that is THE LAB. Going it alone in the dark under safe light is very liberating. You are one with your own chemicals. You are pulling and pushing all the stops. You are a free agent. To hell with that sniveling co-dependent relationship you once had with those fascists. A certain sovereignty is gained in not viewing the lab as the be all, end all light at the end of the proverbial tunnel.

Lab technicians scoff in abhorrence at Sanguedolce's irreverent manhandling of the medium. Some might say he's a madman. This is after all the guy who, after hand developing his film, unceremoniously tosses it in a laundry dryer set on a delicate spin cycle. Technicians are puzzled at the scratches and strange substances (goo) that show up on his film.

It is precisely the scratches and irregularities that activate his unorthodox filmmaking practice. He is a painter; he is painting with light, toner, and emulsion. The effect is surreal, sublime - not to mention hypnotically beautiful and kind of poetic. The man's a maverick; my appreciation for his work has been so enhanced by observing his process.

He showed me a short film he "cut for the Council" about two brothers on the road. It was ethereal, even on a Steenbeck; I look forward to seeing it in a true projection. The colors were super-saturated. Sanguedolce's desire is to print ultra high contrast images, this allows for a trademark effect: a permeation of the positive/negative spaces with brilliant color fields. The whole piece possessed a pulsating momentum of sound and color. The hand-crafted quality of the work is unmistakable; its organic hand-

made feel produces a visceral, almost primal response. To my surprise, I responded in the way I would to a painting - appreciating painterly strokes, gestures, and texture.

Sanguedolce's explanation of his contact printing method was actually quite easy to follow. It all started as he was experimenting with double exposures. It was because of this that Steve initially tried to two tracks of picture at the same time. Realizing his steenbeck could take two tracks through the gate was all he needed to get the reels rolling onto his contact printing innovation:

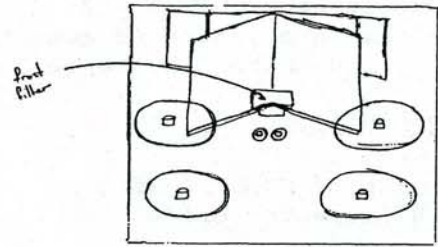
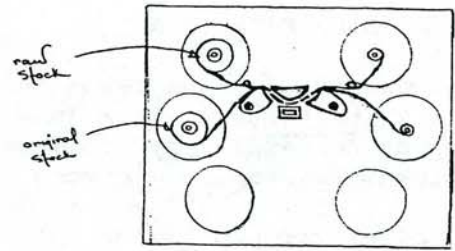
"... If I could do that, then I could run my original picture on this sprocket which is the second mag track and run my raw stock/unexposed film on the picture track. If I shone a light through it then I would in effect be exposing the film making a contact print. And a contact print is exactly as the term denotes - two pieces of film together with light shining through. So all you really need is a mechanism that holds your film together and moves it in unison with the registration intact so when you shine a light through you're exposing the back piece of film."

Steve pointed out that the raw stock he's printing on is a really slow film speed. He's found that with slow film, there's little chance if any fogging. He runs the film at normal speed and uses a steenbeck overhead lamp supply (a regular IKEA light fixture with a seven watt bulb) that is domed so light is contained and doesn't flare. The cardboard curtain is used to make sure the back film doesn't catch any light. The cardboard is folded slightly to fit in front of the prism. He uses a diffusion material in the small cutout window so the light is more even. Gaffer tape is used at the bottom of the cardboard to ensure that light doesn't seep underneath. Steve takes a final step in the effort to control light by draping his film change bag over the cardboard. This will ensure the film is not fogged. "I am processing it as a negative. That way I can do any hand tinting on the contact print and go and get a print from the lab and the neg is untouched. It enables me to work from my library of original sources."

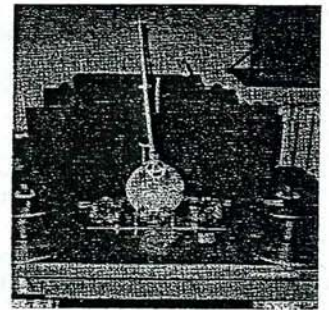
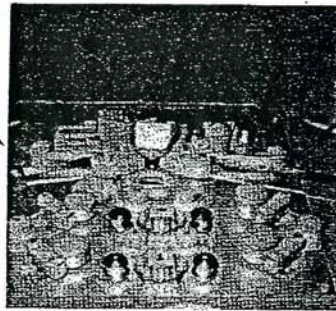
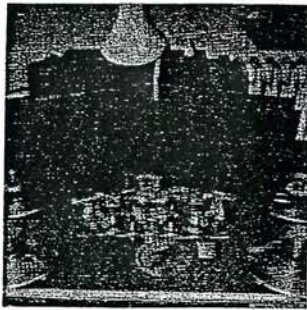
If you're interested making your own contact prints and cutting costs by going around the lab, here's a step by step account of the Sanguedolce method:

### HOW TO CONVERT A CONVENTIONAL STEENBECK INTO A CONTACT PRINTER:

1. Cover all light leaks in room (cracks under doors, windows).
2. Remove Prism.
3. Turn off normal overhead lights. Turn on safe light.
3. Build cardboard curtain with small window cut-out. Insert curtain with small window in place of prism.
4. Wind original footage on the second mag track.
5. Wind raw stock on the picture track.
6. Make sure emulsions are facing each other.
7. Put a change bag or black cloth over the whole cardboard curtain.
8. Run the film at normal speed.
9. Develop in chemistry.



Photographs and diagrams by Jan Bird



expose

I should make mention of one slightly tricky thing in regard to this contact printing method. Sanguedolce reviewed it nice and slow for me:

"In film there's a concern between A and B wind. Usually all camera originals are B wind when you get it from the lab. When you make prints of that it's A wind. Because I'm treating this as a negative I wind it on here as a B wind. It's kind of complicated. If people have questions about this, they should call me. It really just means - make sure emulsion is towards you when you're exposing film. The two emulsions are always together, facing each other."

I thought I was the scratch n' sniff girl when it came to working with my outtakes and dailies. I thought I liked to defile and bastardize the surface of my pictures. In Sanguedolce's chemical kitchen I'm a lightweight. Sanguedolce uses all his senses in working with his film: "The emulsion side is usually the lighter color of the two sides. If you're not sure which side the emulsion is, put it in your mouth and it sticks to your lip." At this point I watched in amusement as he popped the film in his mouth. It did indeed stick to his lip. "I like the taste of film." I guess that's a helpful hint if you're trying to figure it out in the dark.

Watching him work with his buckets and jugs of chemistry is like watching a mad scientist. There's a certain frenzied quality to his practice that translates into the chaotic play of the images. His darkroom (a converted laundry room) has the intensity of a

very tightly controlled accident scene. I half expected to see chalk outlines of reels gone by the wayside. His hand toning method is somewhat of a chancy venture. In doing such unconventional things as running your film through an acid bath, he runs the risk of erasing the emulsion completely. It burns and lifts the emulsion off and he could be left with a clear plastic strip. However with contact printing on his steenbeck all is not lost; he can simply make another print of his original and start hand tinting again.

I would recommend any workshop with Steve Sanguedolce; his approach is practical, his explanations clear and candid. I wanted to linger and learn, watching him at work all day. Unfortunately I had to get on the road to Montreal where I was on assignment to observe an anomalous urban colony of raccoons. They call them *raton-laveu* in French, meaning something like rats that wash. It was explained to me it is because they wash their food before eating it. But reduced to a rat? That's kind of a bad rap for such a nice animal.

With these nine steps and a block of time on a LIFT steenbeck, you can make your own contact prints. It's an amazingly simple procedure yielding great results. Root around in your old outtakes and give it a whirl.

Then make like a raccoon and wash n' rinse.

## PROCESSING WITH URINE

Processing in urine tends to boost the contrast of black and white reversal film (almost like a "glossy" 16mm), especially if the urine samples are collected from the morning voids of heavy drinkers, where the potency is greater.

Supplies for processing black and white reversal in a urine mixture:

### FIRST DEVELOPER:

1 pack of KODAK D-19  
3.8 Litres of urine X 2 (that's 7.6 Litres in total)  
Sodium Thiocyanate to modify 1st developer --  
this also makes the image a little "brighter" (optional) OR

### SECOND DEVELOPER

1 pack of KODAK D-19  
3.8 Litres of urine

### EVERYTHING ELSE

Bleach, Clearing Bath (or vinegar mixture, or rinse in water many many times), Fixer, and some photoflo to mitigate streaks.

### Mixing the Developers

In two separate containers, pour 3.8 Litres of urine. In order for the D-19 crystals to be able to dissolve completely, you will need to heat the urine in a pot on the stove or in a microwave. I use the stove to heat the urine, as I prefer to use a non-porous, metal container. The urine doesn't need to come to a rolling boil, but it does need to be VERY hot. (It's similar to making jello; if the liquid isn't warm enough the crystals won't entirely dissolve, leaving a gritty residue at the bottom of the container and the overall mixture less potent than it ought to be.)

Then add a package of D-19 to each container, and stir constantly. Don't forget to wear a mask and gloves, since the chemistry tends to splash around a lot.

Once all of the dissolving has occurred, add the liquid sodium thiocyanate to the first developer, if you're using it and stir.

Seal both developers in separate air tight, light-proof containers and let cool to room temperature for standard processing (or you may play with the temperatures for reticulation effects).

Then process as you like.

### SOME THINGS TO REMEMBER:

Wear a mask and gloves.  
Don't modify the 2nd Developer with Sodium Thiocyanate.  
Store the mixture outdoors if you can, as it has an offensive odor.

Any questions? email me: [tfrederi@sfu.ca](mailto:tfrederi@sfu.ca)

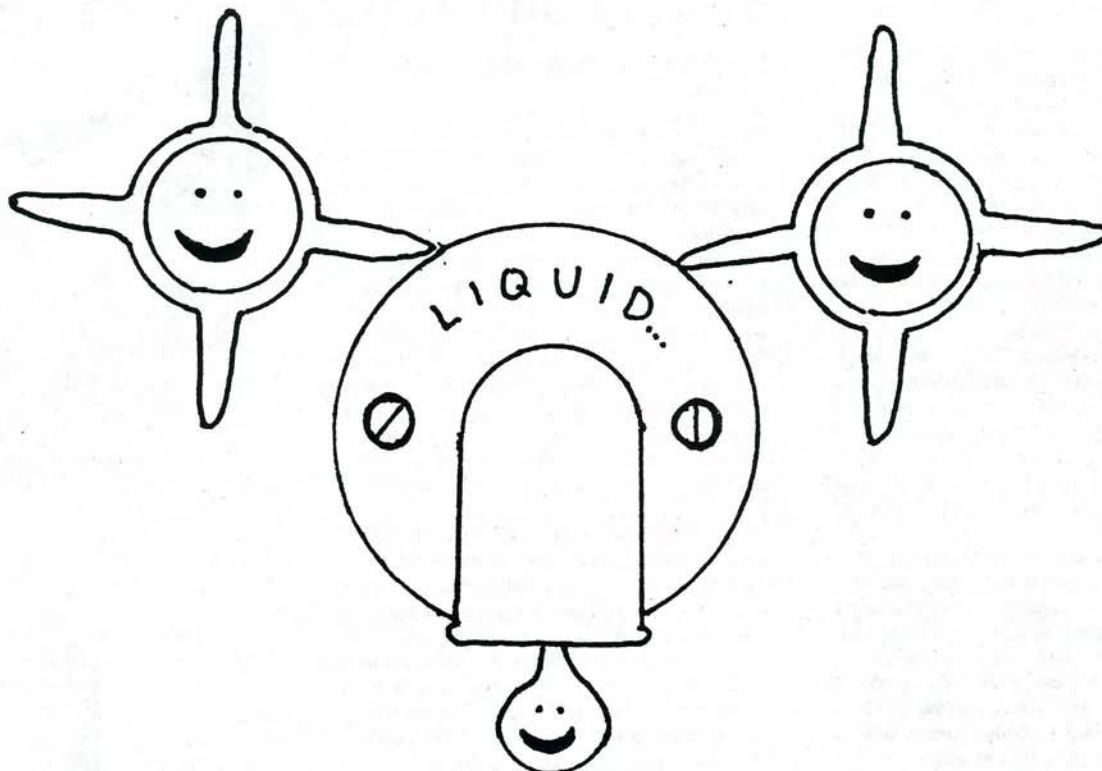
TL Frederick

OR

or mix the D-19s with urine instead of water, and then augment the first developer with 36.8mL of Sodium Thiocyanate.

Also, I should mention that

the outcome is maybe more "sparkly" than glossy what with the whole pH imbalance



HAND PROCESSING WITH C41 CHEMICAL

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My second film, Chaos, originally shot on super8 reversal stock was processed in C41. The C41 chemical kit is commonly available from photo darkroom store. In total darkness, my kitchen, I unreeled the film and processed it in a washing bucket. (Some people may consider to wear gloves because of the corrosiveness of one of the chemical bath) The chemical residues formed a thick opaque layer on the emulsion. After the film was dried. The layer was partly removed with a Q-tip to expose the image below. The stroke of the Q-tip became part of the rhythm of the movement of my film.

I had produced 5 short films. Three of them on the distribution listing of MovingImages. All three involved with hand processing and optical printing.

All the best.

Yun Lam

Yun Lam Li <yunlam\_li@yahoo.com>

#3 341 West 20th Av. Vancouver BC, V5Y 2C5 Canada

Hi Helen,  
I am looking forward to seeing this book of techniques in hand make film.

# Tinting and Toning

by Marty Bennett and Christina Zeidler

Tinting and toning are chemical processes which add colour to your film, usually to black and white material, but experiments with colour film will provide interesting results as well. The principal of toning is that the chemicals on the film (the emulsion) are loosened from the base of the celluloid and then tone (colour) is introduced. This puts colour into the blacks effectively replacing the black with colour, e.g. a red and white image. Tinting puts colour on the entire image, e.g. a black and red image effectively staining the entire image. Well that's the theory.

Our introduction to tinting and toning originated at Phil Hoffman's Experimental Film Workshop. See Phil's article "Fish in the Sky". On returning from Mount Forest and equipped with all the inspiration imbued from that experience we decided to hand colour the footage we shot. What follows is not in any way a comprehensive examination of tinting and toning but rather a brief account of our summer experimentation with this process.

As well as shooting our own footage we had worked on a little project together called "The Ungnome" based on our experience of camping at a trailer park/golf course for a week. We thought this would be perfect because it was only 5 mins of footage. "Why bother editing first?" we thought, "we can always decide later what to use." We later found that tinting and toning is a labour intensive project like no other and it can get tedious as well as expensive....make sure you edit first or as much as you can.

We set up our lab in Marty's garage. The garden hose proved a more than adequate water supply and we purchased a dozen reasonably air tight containers (1 liter or larger, yogurt containers will work too) for mixing chemicals, rubber gloves, stir sticks for mixing and for jiggling the film in the chemicals, a clothes line with attached paper clips for drying and of course the berg colour-toning system which we purchased at Henry's -shop around for the best deal. In addition we purchased the berg copper toner and the berg blue toner which are sold separately. The total cost for the set up was less than 100 dollars and we probably coloured about 600 to 800 feet of film. Follow the mixing instructions on the package, we mixed everything in two batches in order to preserve the chemicals longer.

O.K. this is totally pedantic but it completes the picture. This is the basic recipe for success: break off a short section of film. If toning with a one-step chemical, put it in, let it sit, then stir, checking it all the time then take it out and wash. If using the berg toning system, put film in the activator, wash it, put it in the colour, then wash again. If you wanted to only tone with the berg system it goes straight into the colour then for a wash. How long??? How many times?? Well that all becomes part of the process. After the bath the film can be hung to dry on a clothes line...quite literally. Just loop the sprocket hole through a paper clip (bent slightly to form a J) and attach the paper clip to the clothes line. Voila!

There must be other companies ...but all we could find was berg. The berg colour toning system can act both as tinter or toner depending on if you use activa-

tor (the chemical which lifts the emulsion from the base) or not. The system comes with separate bottles of colour (blue, red, green, yellow, red, violet) and activator. We found that with most of the colours you had to use the activator even if you just wanted to tint. You have pay attention to how long you leave some thing in the activator or your image could entirely lift off the emulsion. This process is incremental, greys first and so on so it can provide amazing results. Experiment.

We were not happy with most of the colours in the system package and mixing the colours does not work like normal colour theory. But you can mix the colours. You can do something called a duotone (two colours) but the ones you are supposed to do it with we didn't appreciate...violet in the whites with green in the tone...blughhhh.

This is where most of our experimentation happened. We went duotone/colour mixing mental. We would approach it like, "let's make orange"( a seemingly impossible colour with the berg combo plate) and then go crazy trying to get it...and we did. Our favorite colours in this respect were: yellow (please note the yellow must be mixed at a stronger concentrate and you must use activator to make it take) yellow was always a good base or mixer colour and the copper toner which could rescue any colour disaster with a couple of seconds worth of dipping.

The Copper and Blue toners (there are also sepia and yellow but we stuck to these two) are strictly toners. The chemicals come all in one and it does the activating itself but more gently then straight activator. The blue is fairly straight forward but in the copper if your film is left in too long the greys will start to fall off the effect is as though the film becomes slightly solarized, again be careful you don't lose the image altogether! We did most of our experiments with high contrast black and white film. Which would enhance the solarized look. We often tried to get more out of our exposure with this which works to a small degree. In all cases you can control the amount of saturation or activation by watching the chemicals closely and rescuing your film at the appropriate moment. You can also use household bleach instead of activator in the berg colour toning system process which proves both merciless and beautiful. You can also "adjust" the picture by rubbing the film in this state.

Other crazy experimentation happened with: painting on the film with un-mixed toner, using permanent markers at various stages in the process, using rubber cement and scotch tape to block sections from being effected, and a strange experiment with beet juice and mould which the jury is still out on.

Hand processing and hand colouring require acceptance of a rule not usually associated with film-making -your film is not precious. This loss of control, this fearless handling of the material is where the process begins and the beauty is revealed. But this mystical process can lead to your best footage being wiped out of memory for all time...oh well.



WARNING:  
RESULTS MAY  
APPEAR UNEVEN!

The process becomes one of trial and error, you are extremely vulnerable to the laws of chance...especially if you work out of a garage. So we decided or the process dictated that we must include variables like timing, chemical exhaustion, contamination, air temperature (heat wave) memory failure and perhaps even drunkenness -it was summer after all and brea... from the "lab" consisted of trips to the back yard and drinking beer while we waited for the chemicals to adhere to the celluloid or often waiting for them to slide off.

Fixing: we didn't do this very much but you could Washing: a slippery issue because it is part of your variables. It is best to wash in-between each stage, order to preserve the chemicals but if you don't wash enough the film will continue to be contaminated and you wash too much it will often result in a loss of colour...best to pay attention...re-tone things that fac etc. Disposal: also a sticky issue, we now own a couple of fairly toxic containers...any suggestions?

We would often rent the cineviewer and winder from LIFT so we could view our progress in the garage, we should mention that we were not appreciative of our results until we saw the material project... Then we experienced the sense of exultation at our efforts.

For more detailed information please consult "Bathub Processing" by Gary Popovich (available at the LIFT office). His explanations are very good and very accurate. But we disagree with the last part of the article: he argues that with out content this process is empty, we argue that nothing is empty in this process, it will lead you.

From: "christina zeidler" <muddyknuckles@hotmail.com>



This article was first printed in

see this article on page 53 of this book



Hi, Helen.

I saw in the latest Workprint that you're researching home processing of film.

I thought I'd pass along a few web links I found when I was looking up home/hand processing information for my super 8 a few months back.

<http://www.dibbs.net/~brantley/s8proc.htm>

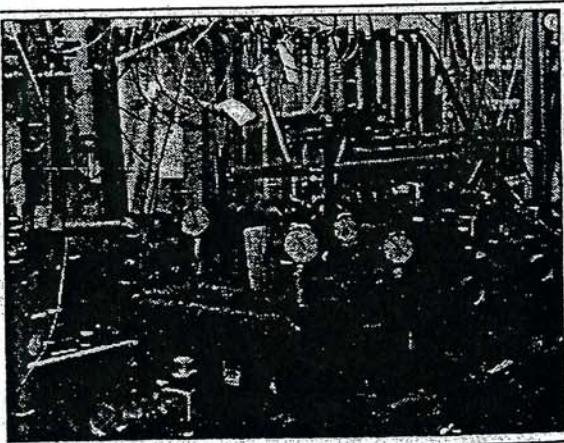
This is Mike Brantley's Super 8 processing page, and it has info on processing tanks and stuff like that. (I've seen the tanks at ebay.com ever now and then)

He also has about 3 different links at the bottom of his page leading to other home and hand processing web pages.

Hope this helps a little.

From: "Steven Legge" <steven\_legge@email.com>

Plumbing. Equipment used for pumping chemicals from storage tanks to processing machines. One of the great mistakes made by groups of filmmakers is to divert energy to the processing of film. It's a non-creative effort, and usually not worth the trouble.



*Independent Filmmaking*

by Lenny Lipton

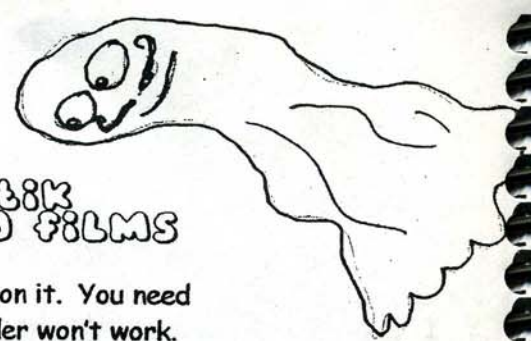
# HOW TO MAKE PRETTY BATIK STYLE TINTED AND TONED FILMS



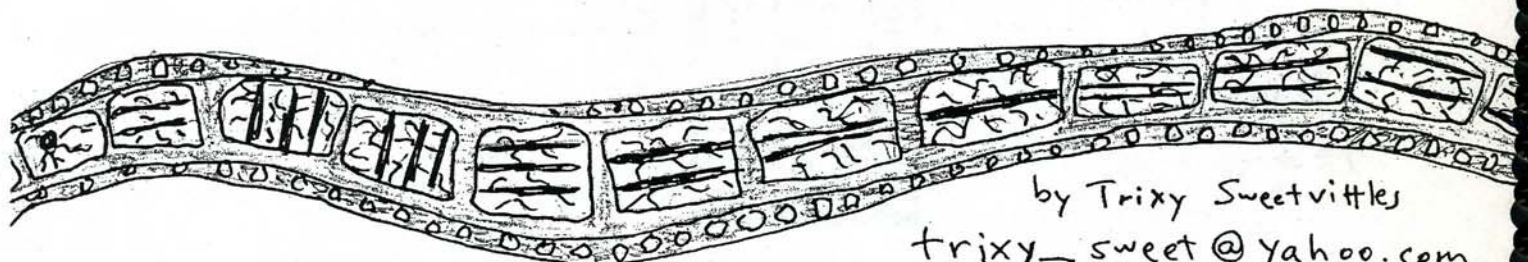
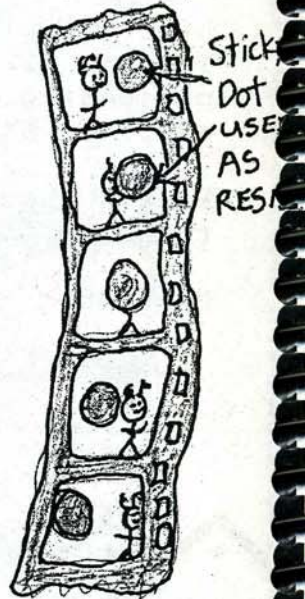
1. Start with a hunk of film with some kind of image on it. You need the emulsion for the tones to adhere to, so clear leader won't work.
2. Find something to make your resist with, something removeable like strips of masking tape, cheap labels cut into circles with a hole puncher, graphic art tape or anything that's sticky but non-permanent. Put your resist on your film in fun and interesting patterns.
3. Dip your film in some Berg color tones or tint/activator combo and let it set for 5mins or 5hours or however long you think you want it to soak up the color.
4. Rinse and dry your film.
5. Apply a thin layer of vaseline to the film.
6. Remove your resist materials trying not to smear the vaseline around too much. Your goal is to expose the film under the resist and leave it vaseline free.
7. Repeat step three with a different color.
8. Repeat step four.
9. Clean the vaseline off your film with film cleaner.
10. You're done!!



This process was adapted from a technique Harry Smith described in Cecile Starr's and Robert Russett's *Experimental Animation-Origins of a New Art*. Harry Smith used airbrushed inks and dyes on clear leader with this batik method to make his films No.2 and No.3. The batik effect is really special; the vaseline is not uniform and allows the second color to bleed through the first. I've been doing a lot of frame by frame stuff with shapes cut out of label paper and it looks super electric. My favorite tint/tone combo has been the yellow toner with the green tint over it. If you're combining tints with tones, the tone should come first, otherwise they bleach out a lot of the tint color.



I've only used B&W film for this technique.

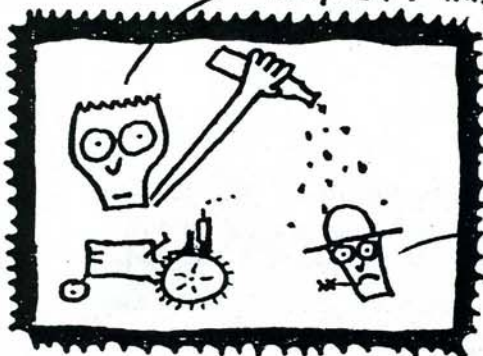


by Trixy Sweetvittles  
trixy\_sweet@yahoo.com

# YE OLDE Tyme HOFFMAN FARM FARMERS REDUCERS

→ The following Photo was taken while I was applying the reducer directly to a farmer @ Phil Hoffmans farm.

Why ish't this WORKING!



What are you doing?  
Can't you see I've got fields to PLOW!

\* Please Note: These are for reducing the density of your FILM!  
→ NOT for shrinking farmers as I originally hoped! DARN!

## KODAK REDUCER 4A

\* Seems to Attack shadows 157

This recipe was

**CENSORED**

by Rob himself ---  
(due to dangerous chemicals)

### WORKING SOLUTION

1oz PART A  
+  
4oz PART B + WATER TO MAKE  
1 Litre

## KODAK REDUCER R5

\* Seems to attack the whole image more evenly

### Stock Solution A

as Potassium Permanganate 4 grains or 0.3 grams  
WATER 1 litre  
Sulfuric Acid (10% mix) 1/2 oz or 16 cc.  
\* Careful!

### as STOCK SOLUTION B

WATER 96 oz or 3 litres  
Amonium Thiosulfate 3 oz or 90 grams

### WORKING SOLUTION

1 PART A to 3 PARTS B

Use these Reducers as you would with hot pepper sauce when cooking!

"You can always add a bit more ... but you can't take it away."

Dip your film in for a while, then wash and look at it.

Repeat if necessary → until your beautiful images appear from that thick nasty emulsion. HAPPY COOKIN'

IRON CHEF ROB BUTTERWORTH

robnmoni@sympatico.ca

# Why I Film

By Ken Paul Rosenthal

My films are essentially an unscripted string of beautiful possibilities. They are less about taking pictures and more about collaborating with a particular natural or urban space. The notion of a finished film is a glass carrot to me, that is, the goal of completion is not visible. The indeterminate nature of alternative photochemical and organic-based manipulations short-circuits my own intentions, encourages the unpredictable, and inspires me to treat the film emulsion as a living organism. It's not so much content that drives form, but *process* that breeds content.

How can a more universal consciousness be experienced on the film plane? Burying film in the earth, soaking it in cooked wild berries, or composting it in seaweed are a means of conversing with an environment on a more macroscopic level, of exploring a more empathetic and cyclical relationship between soil, emulsion, and flesh. These strategies are beyond developing pretty colors. Repeated visits to a particular geographic region also sensitize me to life below the landscape as a corollary to what happens beneath the surface of the film. For instance, after months of observing how wave patterns reflect the ocean floor, my experience is transformed from picture taking to a meditation on light, and an inquiry into cosmic forces. It's about deep listening with my eyes.

The world wields me as an instrument of its own creative life force. Picture the ripples that move away in concentric circles from a stone cast into a pond. To press the camera trigger at just the right moment, or make the perfect edit is to inhabit the space between the ripples; to echo and be in sync with the creative intelligence that generated the universe. My filmmaking practice is as much about finding my place in that universal design as it is about getting dirt—and emulsion—under my fingernails.

hey helen,

just a reminder; my website should be up shortly. please  
include it in your  
new cookbooklet: [www.kenpaulrosenthal.com](http://www.kenpaulrosenthal.com)

thanks! kenneth

## ***ANTIDOTE FOR A VIRTUAL WORLD***

~ Hand Processing Motion Picture Film ~

by Ken Paul Rosenthal c. 2001

### The Unbearable Tightness of Seeing

When and where TV puts me in a perpetually pixilated pinch, hand-processing motion picture film serves as an antidote for a virtual world. A 500-channel cable subscription subscribes us to the illusion that more choices permit more control over what and how we see. That illusion is betrayed by the culture cum cult of WATCHING TV. The TV se(c)t dictates resigning the retina to a boob tubular wave of images which neither crest nor crash but continuously roll into our living rooms. We drown in the see of TV because we passively absorb it rather than actively participate with it. Instead of remote control we must *emote* control. TV will consume our vision unless we exercise insight. What'll it be: sink or sink? Or create a swim swim situation? Are you ready to turn the tide?!

### The Texture of the Gesture

The look of hand-processed movie film is pure shake and bake. This process is not for those who prefer the film surface with a smooth polished complexion. Instead, oozing mounds of crusty chemical infections will bleach, bleed and belch all over your perfect Kodak moments. Sometimes the film will become a crumbling arctic ice floe: image chunks will skate and reposition themselves like bad buoys or Pollackesque life preservers. Or it will resemble a fly strip stuck with half-buzzed guts draining and staining the length of the film. YES!!! The colors remind me of smashing gypsy moth caterpillars with a hammer as a child in New Jersey. I never knew what color innards would spill out. I'd expect chocolate, and out came lime green. Hand processing is just like that. It's the flavor of the moment. Even black and white can look like Walt Disney puking.

### A Womb with a View

Though many claim that giving birth to a child in this daze and rage is a decidedly selfish act, my own sleeping dreams of giving birth leave me profoundly pro-creation. Aah, to bare a tiny ray of sunshine projected in one's own image. Hand processing gives you a womb of your own. With the sacred sovereignty of God you are Alchemist, Mod Hatter, and Mad Scientist all in one; transforming sun to silver, opening the can of peanuts which unleashes a celluloid snake, then screaming, "It's alive!!! IT'S ALIVE!!! Dr. Frankenstein should have it so good. We get to bury the goods *and* dig'em out! You'll be the proud parent of a perfectly imperfect creature whose patchwork quilt features will put Boris Karloff to shame. And nothing, I mean NOTHING, beats the first view of a

newborn image damp with birth bath cradled in a frameline crib. You'll be maniacally giddy and passin' out cigars.

### Getting a Grip (sort of...)

Whereas commercial film labs are chemical chameleons yielding consistently inconsistent color and contaminated costs, hand processing is a mercurial and serendipitous mixture of control and non-control. Plus it's remarkably economical. I've processed up to 10 rolls of Super 8 with one \$30 home developing kit, ignoring the instructions about the number of rolls per run and "exhausted" chemicals. IMPORTANT: Expired chemicals do not mean beat results, rather, beatific ones. The idea is to get what we *didn't* pay for.

Hand processing grants you SOUL CONTROL. It inspires an attitude of non-, if not anti-intention; an embracing of the gesture rather than a prescribed result. *It requests disregard for expectation.* THAT is the throbbing heart of this pulsing push and pull PROCESS which breathes and breeds between inspiration and form. To be specific, *expect the unexpected* and learn to appreciate it!

### Primordial Noodle Soup

The following recipe should prove how simple it is to get a 'taste' (I don't mean this literally!) of hand processing by using store bought kits. Such kits are ideal because they provide chemistry in easy to mix concentrates for producing "accurate...high quality" images. However, it is beyond the scope of this article to provide detailed information on processing motion picture film using separately purchased solutions. So here's all you 'knead' to make delicious images:

#### Color:

- 1 Tetenal E6 Slide Kit by Jobo
- 4 1-liter brown photochemical containers
- OR**
- 1 Fuji Hunt Chrome 6X Processing Kit
- 7 5-Liter brown photochemical containers (or equivalent)

#### B&W:

- 1 Kodak TMAX Direct Positive Slide Kit
- 1 Gallon Fix
- 1 Liter Hypoclear
- 6 1-liter brown photochemical containers

#### Super 8:

- 1 35mm 2 or 4-reel stainless steel developing tank

- 1 11 x 14 x 4 inch deep plastic tray

16mm:

- 1 35mm 10-plus reel stainless steel tank, or large plastic photo tank (the lids tend to stick)
- 2 Large trays if you're using the Fuji Hunt Kit

For both gauges:

- 1 Flat-top thermometer
- 1 Measuring graduate
- 1 Pair rubber gloves
- 1 Pair scissors
- 1 Hammer
- 1 Apron
- 1 Egg
- 1 Length string
- 1 Blow-dryer
- 1 Pair Goggles
- 1 NIOSH/MSHA certified Respirator (a must!)

Other comparable color kits exist, but I've only used the ones manufactured by Jobo and Fuji Hunt. Both kits' chemistry uses an E6 process intended for Ektachrome color reversal slides, which is perfectly suitable for developing both Super 8 and 16mm Ektachrome 'VNF process' color reversal motion picture film stocks. However, the Jobo kit uses only 4 steps vs. 7 steps with the Fuji Hunt kit (more on this later). The TMAX kit was designed for Plus-X and Tri-X black and white reversal stocks, but includes neither fix nor hypoclear. Hypoclear should follow fix as it will cut your wash time from 20 minutes down to 4. I recommend using the Tetenal kit for Super 8 since it makes only 1 liter of each solution. The Fuji kit supplies 5 liters of each solution so it is more appropriate for processing larger amounts of 16mm. So are you hungry yet? Here's the basic methodology:

1. Follow the kit's instructions for mixing chemicals.
2. Super 8mm: In *total* darkness, hold the cartridge at a slight angle on its edge against a hard surface. Strike with a hammer from above on the diagonally opposite top edge. After one good crack, peel the cartridge open by hand. You'll manage with no more than 3 decent blows once you get the bang of it.
3. Remove and *completely unravel* (important!) the 'platter' of film from the cartridge and its core. Bunch up and stuff the entire mess into the most appropriate tank, then cover *securely*.
3. 16mm: In *total* darkness, simply pull the film off the 100-foot daylight spool. Keep in mind that you only need to spool off as much as you feel is appropriate for the tank

you're using, then return the rest to its light-tight box. You can keep track by estimating an arm's length of film as equal to about 3 feet. Be careful with 400-foot loads because they have nothing more than one small plastic core to support them.

5. Follow the kit's instructions for processing. Be sure to remove excess air from the collapsible containers by pressing them down until the solution rises to the lip, then cap. This slows down oxidation of the chemicals. If you are using standard containers, just squeeze them from the sides.
6. After the final wash, remove and dangle your tangles over a length of string, blow-dry (not too hot, or the film will curl into an unfashionable 'do), and gossip with it about Hollywood. Get sassy!
7. When just dry, find the *tail* end, which will read "exposed" on Super 8. Attach the tail leader and begin spooling onto reel by hand. REMEMBER: The image should be upside down, and the sprocket holes closest to you when spooling from underneath the reel from left to right.
8. Attach head leader and project.

*~ Now wasn't that yummy? ~*

The following pamphlets are of paramount importance to maintaining and sustaining the universe within and without:

"Safe Handling of Photographic Chemicals" J-4, \$1

"The Prevention of Contact Dermatitis in Photographic Work" J-4S, 50 cents

"The Environmental Emergency Card" J-2A, 10 cents

One copy of each may be ordered free of charge through Kodak's information center 1-800-242-2424 x25, 9am-7pm Eastern Standard Time. PS: Photographic chemicals will stain your tub yellow, and make your brain mellow. WEAR PROPER PROTECTION AND ALWAYS PLAY IN A WELL-VENTILATED SPACE!!!

Manja You Eyes!

*"Chance favors the prepared mind"* -Bobby McFerrin

Now you're ready to explore the possibilities. Let's start with tank size. Cramming a 50-foot roll of Super 8 film into a 2-reel tank is like having sex with yourself in a footlocker (and I'll, uh, leave it at that). A larger tank allows more room for the chemicals to flow around the film, encouraging a (relatively) clean image and surface. If the outline of



sproketholes dancing across your projected image doesn't thrill you, (I love the way they recklessly and rhythmically punctuate and sweep through the frame) you may use open tubs rather than a closed container. However, depending on which kit you're using, the critical first and/or second steps must be undertaken in TOTAL darkness to prevent fogging. *Consult the kit's instructions for more details here.* As long as the chemistry completely covers the film, the open tub method *should* provide you with the most spotless image. Conversely, you might try filling a spray bottle with the first developer and 'mist-ify' your expectations still further!

Experiment with temperature and agitation. Cooler temperatures tend to yield 'warmer', blue tones while warmer temps usually produce 'cooler', yellow and green tones. Adjust development times according to the push/pull table in the kits' instructions. Over-agitation increases grain and contrast, while under-agitation decreases grain and contrast.

You can bless your mess by solarizing it. Half-way through the first developer, *while in complete darkness*, remove the tank lid, lift out your film or leave it in the can, and *very* briefly flash it with a 100-watt bulb from about three feet away. Return it to the tank and continue processing where you left off. Presto! Instant funky!

Please note that most reversal kits such as the Tetenal combine certain steps for expediency and convenience, thereby preventing you from experimenting during certain stages. However, the Kodak TMAX B&W kit will permit you to make a negative image when you skip the steps between the first developer and fixer baths. Leapfrogging from the first developer to the fixer using the Fuji Hunt kit will give you a sepia-like negative. The same kit will let you whip up a tasty color negative when you process normally, but exclude the reversal bath step. If you're a daring cook, you may desire the flexibility (and savings) of purchasing your chemicals in separate, bulk amounts from either a retail or mail order photo supply company such as Photographer's Formulary in Condon, Montana, USA; 1-800-922-5255/phone, 1-406-754-2896/FAX.

Kodachrome cross-processed in B&W turns out sorta sepia. When shooting you'll need to overexpose your film 1 stop. Increase your First and Second Developer times to 12-14 minutes each, and even more if you experiment with Ektachrome. *Briefly* returning Kodachrome to the bleach and redeveloping baths may bring out some orange tones. Depending on what you consider acceptable, three rolls of the same stock are generally the limit before the solutions become exhausted. *Be aware that cross processing will render your chemistry incompatible with the stocks it was intended for.* So use near-expired solutions which you are prepared to throw out. Please dispose of them at a proper hazardous waste site!

Accessorize! Accessorize! Add materials and debris from aspirin to zippers to the soup to stir up that slop-apocalyptic look. Attack the film itself after removing it from the cartridge. Bounce and pounce on it! Wrestle that doggie to the ground! Then push its plastic puss into the mud! And the fun need not stop after the final wash. I've soaked my hand-processed film in dyes derived from cooked berries and seaweed, then set it in the sun to dry. I particularly love to re-photograph my hand-processed Super 8 film. If hand processing is like giving birth, then re-photographing successive generations of your own film is pure incest. Such inbreeding bears beautifully malformed and grotesque offspring.

More inspiration appears in the 'trouble-shooting' section of any kit's instructions. It lists 'problems' such as "gray streaks or blotches" and "light crescents" beside their possible causes and corrections. However, I must admit that when deliberately shooting for troubling effects, the results may seem too clean. Which reminds me of a few aphorisms by my musing muse, James Broughton:

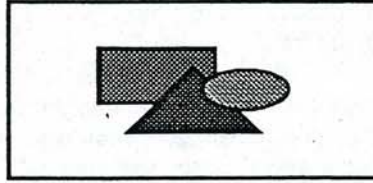
"Precise spontaneity is the only way of hitting the mark"

"When you know how to be where you are and to do what you do, you can take any risk"

"By all means, try all means"

And by all means, HAVE FUN!!!

###



## do-it-yourself page by the Super8 Reversal Lab NL

This is a short version for black & white reversal films processing. It gives you the basic technical information on how to process your own black & white super8 film. All chemicals mentioned are easy to get but be very careful if you start mixing the stuff. The chemicals are very bad for your health and increase the risk of cancer! Everything you do is at your own risk! This receipt is a starting point and experimenting will lead to better results. It also depends on your own personal idea on how your film should look. Please do email me if you have any doubt or troubles.

### 2. time table for super8 black&white reversal filmprocessing (20 °C)

1e developer	6	minutes
wash with water	2	minutes
bleach bath	2	minutes
wash with water	2	minute
clear bath	2	minutes
wash with water	1	minute
re-exposure (500W at 1meter)	1	minute
2e developer	2	minutes
wash with water	1	minute
fixing	4	minutes
final wash with water	10	minutes

### 3. receipt for black&white revelsal filmprocessing.

First developer: Dokumol (1+9) from Tetenal or Dukulith (1+3) for a higher contrast.

Bleach is made from: Potassium Dichromate  $K_2Cr_2O_7$  (**POISON!!**) To make 1 liter: ad 10grams to 400ml warm water. Then add 10ml Sulfuric Acid 96%  $H_2SO_4$  (**BE CAREFUL it can explode**) to 400ml cold water. ALWAYS add the sulfuric acid to water and NEVER vice versa because it can explode! Always wear protective clothing like gloves and glasses. Ad the two 400ml solutions

together and add water until you have 1 liter.

Clear bath:

Sodium Sulfite  $\text{Na}_2\text{SO}_3$  (LIGHT POISON) Add 40grams to 1 liter warm water.

Second developer:

Every normal film developer will do. For example you could use Dokumol 1+9 or Kodak D76.

Fix bath:

Every normal film and paper fix will do. Like Agfa Agefix 1+7.

**Disclaimer: Be aware of what you are doing. Everything you do is at your own risk. Consult a chemist in case of doubt. Safety first and don't let minors touch any of the chemicals. Seek medical help *immediately* in case of burning or swallowing.**

Frank Bruinsma  
Super8 Reversal Lab Netherlands  
June 2001

Super8 Reversal Lab Netherlands  
Frank Bruinsma  
Super8 Reversal Lab NL  
p.o.box 6669  
3002 AR Rotterdam  
Netherlands

<http://www.super8.nl>  
info@super8.nl



16mm

# BLACK AND WHITE PROCESSING

FILM STOCK  
16mm 7231 Plus X Negative

*This is the standard test for checking centering area movement on an animation stand.*

CHEMICALS  
Kodak D76 Developer  
Kodak Fixer

The dry chemicals can be purchased at Camtech Camera Exchange here in Calgary. The address is 1015 11th ave. SW. phone number: 244 0333.  
The 946 ml fixer costs around three dollars and the D76 3.8 L Developer costs around seven dollars. If properly stored this stuff can last for six months.

LOADING  
Practice loading with light on using previously processed film.  
Spools hold approximately five feet (200 frames) of 16mm film.

SOLUTIONS  
Use rubber gloves during development procedure.  
AMOUNT OF SOLUTIONS:

1 Spool	-	275 ml
2 Spools	-	375 ml + 100
3 Spools	-	450 ml + 75
4		525

SAVE SOLUTIONS - Pour back into containers when done.

1. AGITATE EACH SOLUTION FOR FIRST THIRTY SECONDS. AFTER THIS TAP BOTTOM OF TANK COUNTER AFTER THIRTY SECONDS TO REMOVE AIR BUBBLES.
2. AGITATE SOLUTION FOR FIVE SECONDS EVERY HALF MINUTE FOR THE DURATION OF EACH PROCESSING TIME.
3. RINSE IN LUKEWARM WATER.

PROCESSING TIMES (With chemicals at room temperature.)

- DEVELOPER- 3 MIN.
- RINSE- 1 MIN.
- FIX- 4 MIN. (after half the total time in the fix, film can be exposed to light without effect.)
- RINSE- 30 SECONDS.
- WASH- 2 MIN. (Unscrew top and place tank under tap with light flow of water.)

DRYING, ETC.

Squeegee excess water off film strip and hang to dry. Rinse equipment and leave to dry before storing.

# Developing 100' of 16mm slop test

People who use  
ANIMATION STANDS  
+ LAB PROCESSING refer  
to HAND PROCESSING  
AS TESTS,  
messy tests.

stock: 7231  
-mix dry chemicals  
(from Camtech 244-0333)

Using A 100' TANK WITH REWINDS

1 gallon of each chemical - developer D-76  
- fixer (hard)

Chemicals are reusable three times if you mix this much  
Follow chemical mixing carefully regarding temperatures.

Amount- The slop test unit takes 2000 ml of chemicals

-mix dry chemicals (from Camtech 244-0333)  
1 gallon of each chemical - developer D-76  
- fixer (hard)

Follow chemical mixing carefully regarding temperatures.

warning: if you use camera room #1 your film will be on core. You must transfer it to a daylight spool or directly onto a metal spool to be slop tested. Core will not work.

1. If you have stuff on a daylight spool you will have to transfer it to the metal spool by placing the daylight spool in the slop tester with the film connected to another metal spool in the totaldark.

2. Wind the film onto the metal spool.

3. In the total dark open the container and take out the daylight spool. Attach the film to the other metal spool and carefully close the lid making it light proof.

4. You are now ready to slop test.

Rotate the spindles continually back and forth.

For developer: -30 min (pour chemical back in bottle)  
-rinse with water for five minutes  
-1 hr fix  
- 15 min. wash with water  
(hypo clear if you do not want streaks)

Squeegee the wet film

Ask staff somewhere you can lay the film to dry on cheese platters with 16 field animation paper on top. Let dry overnight.

H-Aden tells me that you can process Colour film.  
He slop tests Kodak 7248 using the  
above chemicals. The result is a  
SEPIA TINTED NEG.

ONE TIME WE HAND PROCESSED 100' OF 7231 AND TOOK THAT NEG AND IIA084  
A COLOUR POSITIVE PRINTER. IT TURNED A COOL LIGHT GREEN.

Maïa Cybelle Carpenter

# HAND PROCESSING INFORMATION

Maïa Cybelle Carpenter is an experimental filmmaker, multi-media artist, educator and independent curator born and raised between New York and France. She studied contemporary experimental music at the McGill University Conservatory of Music in Montreal, graduated with a BA in Women's Studies and Film from Barnard College, Columbia University in 1997 and has an MFA in Experimental Film from the School of the Art Institute of Chicago, 2001.

Maïa has taught hand processing and alternative film technique workshops and given artist lectures at The School of the Art Institute of Chicago, The Academy of Arts in San Francisco, at Phil Hoffman's Independent Image - Making Residence in Ontario, Canada, and at private studios in Chicago.

## FILM/PHOTO ALTERNATIVE PROCESSING SOURCES

**Porters Camera** Box 628 Cedar Falls, IA 50613-0628 1 (800) 553.2001 / 1(888)

PORTERS

<http://www.porters.com>

[fotomask, tints & tones, darkroom equipment, fun stuff, etc...]

**Photographers' Formulary**

Box 950 Condon, MT 59826 (406) 754.2891 / 1(800) 922.5255

[bulk chemicals]

**B&H Photo New York City**

<http://www02.bhphotovideo.com>

[sells tints & tones of all brands, processing chemicals & kits and more!]

**Berg Color Tone NY**

<http://www.bergcolortone.com>

(distributed through BKA photo(.com) in Vernon Hills, IL or other photo stores]

[tints & tones available at photo stores, but contact distributor or company directly for bulk amounts]

**Rockaloid**

<http://www.rockaloid.com>

[Halo-Chrome silver toner & liquid emulsion]

**Kodak** 1 (800) 621.3456 / 1(800) 755.1816 (fax)

<http://www.kodak.com>

[buy bulk amounts of processing chemicals- some examples below]

ASK FOR STUDENT DISCOUNT IF YOU HAVE AN ID

#1464114 rapid fix (solution A & B which is the hardener-do not add)

#1973247 Fix Solution A only

#1946045 D19 powder

#1866227 Clear Bath replenisher

#1866268 1st Rev. Developer D94

#1866201 ReDeveloper D95

[also buy 16mm hi-con single perf (sound) stock great for toning 7378] - #8854291 1,000 ft = approx. \$66.24

**Consolidated Plastics** (330) 425 3333 fax

[for plastic buckets, containers, aprons, pvc gloves, etc...bulk is cheaper]

**Local Hardware Store** or Home De(s)pot

[full face positive pressure cartridge respirator OSHA standard 29 CFR 1910.134 with acid gas, dust and mist pre-filter]

**Local Art Supply Store** - ex) Pearl Paint [Martins transparent film color paint, Marshall transparent oil paints, India inks, pigments, Pebeo Gel Crystal & Vitrail.]

## **SUGGESTED COLOR/TEXTURE MATERIALS & TECHNIQUES FOR APPLYING TO 16MM, 8MM, S8 & 35MM FILM**

**Compiled by Maïa Cybelle Carpenter - mc369@hotmail.com**

Please note: I have used most of the materials and techniques below, but this is just a primer. You must experiment and try these out yourself. Different environments may lead to different results. Always test before using these methods on precious footage.

Remember, you may lose your image completely! **READ PACKAGE INSTRUCTIONS CAREFULLY AND NOTE WHEN VENTILATION IS NEEDED.**

**\*\*\*\*\*please wear a gas mask, gloves, goggles, rubber/pvc gloves and protective clothing!\*\*\*\*\***

### **Painting on clear or developed film stock:**

1. Dr. PH Martins Film color comes in a variety of different colors although I usually buy the basics and mix up concoctions. Mixing does not always yield the desired results, but then again, who needs precision? These are water based paints and they come in little

dropper bottles. The paint does not really chip off unless you've applied 20 layers. I usually use the clear colors, but sometimes have used the opaque colors.

2. India Ink also works on film, although I find that it does not always adhere to the stock. Mixing India Ink with a little household bleach will produce a thicker substance. Use a q-tip to apply to processed film. It will quickly bleach away your image. Dab it right away with a paper towel. What you'll have left is a degraded emulsion with color seeping through.
3. Food coloring also works well and can be mixed with a variety of substances- acts like a dye. Or try adding it to Crystal Craze. (if you can still find it at hardware stores/paint supply stores)
4. Permanent markers.
5. Rubber stamps used with permanent ink.
6. Marshall Transparent Oil Paints
7. Powdered pigments used to dye homemade egg tempera paint (made with egg yolk).
8. Pebeo Gel Crystal (For painting on glass. Comes in transparent, opalescent and translucent)
9. Pebeo Vitrail (For painting on glass, polyester, metal. Comes in transparent colors)
10. White-out.
11. Some brands of acrylic paints.

### **Tints & Toners for using with film processed with non-hardening fix:**

(always mix, store and use with plastic or rubber containers . Do not use metal containers or mixing spoon as it may ruin your solution.)

#### 1. Berg Color Tints & Toners.

They come as kits or some of them come individually. For specific directions read articles by Gary Popovich and Marty Bennett & Christina Zeidler (may be coming soon online). You can use rubber cement or Fotomask to block out parts of the image you don't want to effect. They make these toners: Sepia, Brown/Copper, Brilliant Blue, Gold, Yellow, Selenium. Mix all according to "transparencies" directions. Toners are best used on hi-contrast images. Toner: replaces blacks with color, leaves whites untouched. Tint:



colors entire image.

2. Fotospeed Palette Toner Kit.

This also comes packaged individually, but the kit is cheaper. The titanium and vanadium yellows are amazing! Much better than Berg yellow and gold.

3. Selenium Toner made by Edwal, Kodak, Berg, or Fotospeed.

Use on very dense images (lots of black). This converts the metallic silver to silver selenide, giving your blacks a purplish hue.

4. Rockaloid Halo-Chrome Silver Toner.

Try it out. This may not make your image silver when projected, but it helps with reticulation when repeatedly toned.

4. Make your own Sepia Toner:

Thiocarbomide. It doesn't stink as much as other sepia toners. See instructions at the bottom of this page.

5. Though not a T&T, Potassium Promaganate

Turns your entire image orange and will lighten it to a certain degree. It is a type of photo bleach sold in powder/crystal form. Mix with water to form a magenta colored solution. Adjust to the strength you want. Please beware that you may lose your image very quickly in this solution. You can get some nice reticulation if you boil it (outside on a hot plate please!), place the film in it for a few seconds, then immediately water wash. The water should be full of ice cubes. The shock cracks the emulsion.

### **Reticulation:**

1. This cracking of the emulsion can be achieved through radical temperature changes during the processing procedure.

2. 100% Sulfuric Acid solution. You need chemical handling clearance to get this. Extremely dangerous! Run film through a shallow bath of it and immediately dunk your film in water to stop the acid's effect. Watch your emulsion crack, drip and slide off in 1 second flat! Try to do it outside as fumes and contact can be fatal.

3. Soak your film in a hot sodium carbonate solution. Available from Photographer's Formulary.

4. A certain amount of reticulation happens when you do split toning, or multiple passes through the toning process.

5. This simple, but not always successful solution may cause reticulation on a negative

image: 1 cup of Borax dissolved in hot water. Add this to D76 Developer to equal 1 gallon of stock solution. To process: 70 degrees F, 1:1 stock solution to water add film and agitate for 6 min. Wash in water for 2 plus minutes . Fix for 1 to 2 minutes.

6. Acetic Acid.

### **Sabbatier or overexposure : aka Solarisation:**

Online book by William L. Jolly: 'Solarisation De-Mystified'

<http://www.cchem.berkelev.edu/~wljeme/SOUTLINE.html>

### **Other techniques & materials:**

1. Wine, like the ruby/purple and cheap Beaujolais Nouveau. Soak non-hardener fixed, developed film for 1 week plus.
2. Other natural dyes: berries, carrots, beets, indigo, or black tea.
3. Tooth-brushes for splattering and printing ink, paint, bleach or other tints.
4. Texture can be given by scratching the emulsion side with sandpaper, paper clips, needles, and awls.
5. Saturating quilted paper towel with ink/paint and then stamping the film with it leaves a grid pattern.

## **MAKE YOUR OWN THIOCARBOMIDE (Sepia) TONER**

### **Mixing and Use Instructions\***

Buy chemicals from any photo supply store like Photographers' Formulary

**Bleaching Solution:** Water 500 ml Potassium Ferricyanide 50 g Potassium Bromide 50 g  
Water to make 1000 ml

**Toning Bath:** Thiourea 2 g Sodium Carbonate (anhydrous) 100 g Water to make 1000 ml

### **Toning Procedure:**

- 1) Process film (Non hardening Fix and wash film as usual)
- 2) Bleach film for 1 to 3 minutes (or more) in bleaching solution.
- 3) Wash for up to 10 minutes.
- 4) Immerse the bleached and washed film in the toning bath for 2 to 4 minutes or until the

desired tone is achieved (up to several days depending on film and the freshness of solution)

5) Wash for up to five minutes

**\*Wear mask, goggles, plastic or pvc gloves and protective clothing.\***

**HAPPY FILMMAKING!**

**IF YOU HAVE ANY QUESTIONS FEEL FREE TO E-MAIL ME:**

**mc369@hotmail.com**

# FAST AND EASY

## film processing

quick recipes:

quick n' dirty strategies by alex macKenzie (blinding light!! cinema)

process black and white reversal using D-19 (kodak) - just turn the lights off, dunk it in there and swish it around for 4 minutes, take it out, rinse it in

water and throw it in some fix. tada! negative! if you feel like finishing this

off in digi-land, just film it off a wall with a borrowed DV camera in set with

the negative setting and presto - your positive. if this all seems really

rudimentary then move on to the next page if you like, but some folks don't

know you can process film FAST and EASY.

looking for that hard to find bleach you need for a positive image? i usually

stock some that i get in bulk from kodak, so drop me an email and i might be

able to send some your way. [panic@istar.ca](mailto:panic@istar.ca)

otherwise, scrape, puncture, rub and scratch that film stock until it talks to

you. i have been doing live S8 film shows for about 4 years that are made up

exclusively of multiprojected hand processed black and white with gels, lenses

and filters for added texture. invite me to your town and i will do tricks.

xo

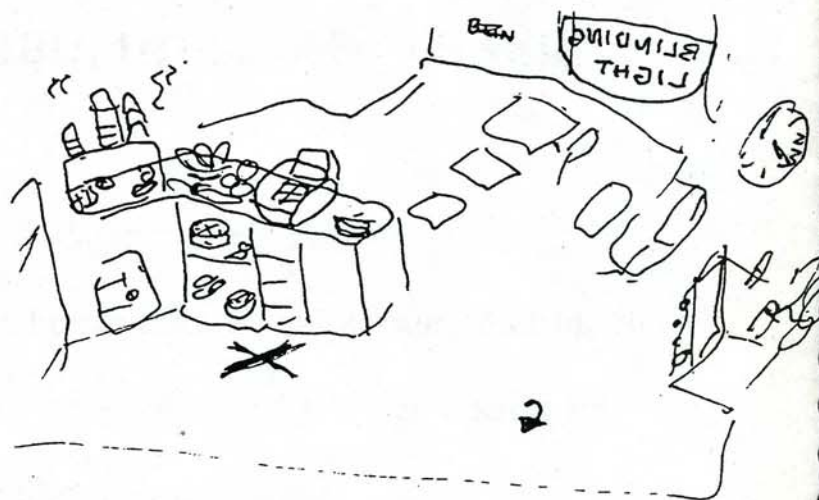
alex



in Vancouver, BC

Alex ran this small, independent cinema. It was the best cinema in Canada for experimental, strange, even plenty of handprocessed films!

Alex MacKenzie  
[panic@istar.ca](mailto:panic@istar.ca)



behind the counter at the café, as drawn by

Amy Lockhart.

# ORGANIZE A FILM BEE TODAY!

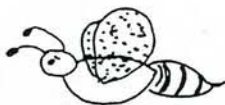
↓ an example

all ladies

film bee!

for chemically driven handcrafters  
(includes free tea)

like a sewing bee,  
you see



no labs!  
no editing!  
low cost!



please RSVP  
by March 23  
429-7952  
Helen Hill

## A film bee! Instructions

The 2000 Splice This! Super-8 Film Festival in Toronto will be held June 23-25. They have asked me to put together a show of brand new Halifax films. I decided to ask y'all to be part of a ladies film bee theme program. Each person will shoot one roll of film, then bring it to my house where we will handprocess it in the bathtub. Then, on a Sunday afternoon, we will all be together for the film bee, for tea, cookies, biscuits, cucumber sandwiches, chit chat and to finish our films, by painting colours onto them, scratching away on them, and bleaching out the parts we don't want. We'll keep screening them to check our progress. For example, you could bleach away a shot and then draw little yellow stars on the clear leader. The idea is to finish the film by manipulating it rather than by editing it. There will be inks, markers, scratching tools, and bleach for everyone to share.

\*\*\*\*\*

### How it works

#### MARCH

You buy and shoot one cartridge of black and white film TRI-X super-8 film (at Reid Sweet, Carshand-Mosher or for \$17.55 at the NSCAD bookstore). Call me if you need to borrow my easy-to-use super-8 camera.

A subject theme of clothes (fashion, sewing, knitting, fabric, accessories) would help us with the program description, but your own inspired themes are more important, so feel free to film anything.

#### APRIL 13 OR 14 OR 15

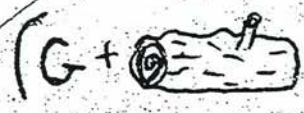
You come to my house for one hour on one of these days and we'll handprocess your film together. We'll all chip in some money for the chemicals and art supplies (less than \$20 each).

#### SUNDAY, APRIL 16 noon to four

The Film Bee!!!

#### MAY

All the films will be mailed to the festival along with your two sentence description of your film. Because this is a requested show, your film has already been accepted into the festival! Congratulations!



(G + [log] - W)



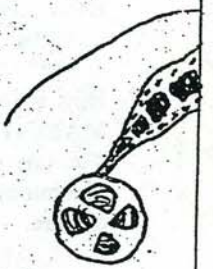
(L + [duck] - D)



([phone] - S)



(Y + [hand/pen])



+

