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INSTRUCTIONS

FOR USING THE

No. 1 and No. 4 PANORAM= KODAKS

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.

THE NO. 1 AND NO. 4 PANORAM-KODAK

◆

INSTRUCTION BOOK

◆

Published by EASTMAN KODAK CO.
ROCHESTER, N. Y.

CONTENTS.

ORDER FILM BY NUMBER

All Kodak Films may be distinguished by the numbers on the ends of the cartons.

105

is the number of film for the No. 1, Panoram-Kodak.

103

is the number of film for the No. 4.

BEFORE LOADING.

Before taking any pictures with the Panoram-Kodak, read the following instructions carefully. Make yourself perfectly familiar with the instrument, taking especial care to learn how to operate the shutter. Work it several times before threading up the film.

The first and most important thing for the amateur to bear in mind is that the light which serves to impress the photographic image upon the sensitive film in a small fraction of a second when it comes through the lens, can destroy the film as quickly as it makes the picture. After the film has been developed and all *developer thoroughly washed* out, it may be quickly transferred, in subdued white light, to the fixing bath without injury. Throughout all the operations of loading and unloading, be extremely careful to keep the duplex paper wound tightly around the film to prevent the admission of light.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

PART I.

LOADING THE CAMERA.

The film for the Panoram-Kodak is furnished in light-proof rolls and the instrument can therefore be loaded in daylight. The operation should, however, be performed in a subdued light, not in the glare of bright sunlight.

The Film

NOTE:—The No. 1 Panoram-Kodak uses the regular No. 1 Folding Pocket Kodak Film.

The No. 4 Panoram-Kodak uses the regular No. 4 Bulls-Eye Cartridges.

TO LOAD.

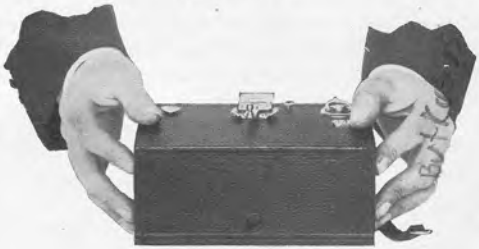


Fig. I.

I. Take a position at a table as far as possible from any window, place the Kodak on the table, unhook handle of Kodak, and press on concealed springs at rear upper corner of each side of Kodak. (See Fig. I.) This will allow the back to drop down and the sides to swing out as shown in Fig. II.

Fig. II.

The Kodak is now ready for loading.

II. At each end of the Kodak will be seen a recess for holding the film spools. As sent out from the factory, there is an empty spool at the winding end of the camera, and the fresh cartridge is to be inserted at the opposite end. To accomplish this, pull out on axis pins as shown in Fig. III.

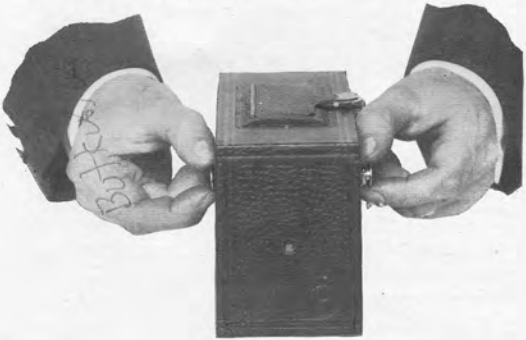


Fig. III.

Fig. IV.

III. Now insert the cartridge as shown in Fig. IV, *being sure that the top of spool comes at top of camera,* (each spool is marked, the word "Top" will be found printed on the duplex paper near the top of the spool.) Press axis pins home so that film spool will revolve upon them.

IV. Now remove the gummed slip that holds down the end of duplex paper; carry the end of paper across the small aluminum roller and following the curved guide (this is the focal plane) carry the paper over the second aluminum roller and thread duplex

paper into slit in reel. (See Fig. V). Give one or two slight turns to the left on key, to bind the paper firmly on to reel. (See Fig. VI).

Fig. V.

It is important that the reel be turned far enough to make sure that the paper will not become detached, *but no further.*

If the key is turned too far before the Kodak is closed, the duplex paper will be wound off and the film exposed. The paper should now be in position shown in Fig. VI.

V. Close up back and sides of camera and snap loose end of handle into catch, reversing operation shown in Figs. 1 and 2. From the time the gummed slip is cut on cartridge until the paper has been threaded up ready for use, care must be taken not to let the duplex paper loosen on the spool, otherwise light will be admitted and the film ruined.

VI. Having replaced back and sides of Kodak turn the winding key slowly to the left for about

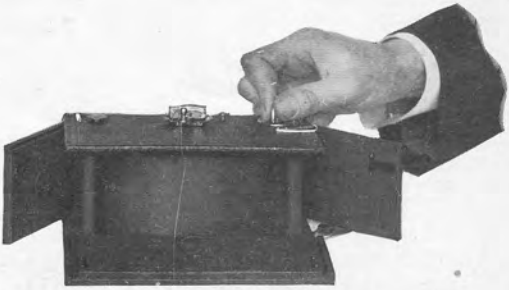


Fig. VI.

NOTE—The film must not be carried over the two round wooden supporting posts but pass in front of them, following the curved guide.

fifteen turns until an index hand appears before the little red window in back of camera. This hand is a warning that you are approaching Fig. I. Then turn the key very slowly until Fig. 1 appears before the red window.

NOTE. If using the No. 4 Panoram-Kodak turn the key until the letter A appears.

The film is now in position to take the first picture.

PART II.

MAKING THE EXPOSURES.

The Panoram-Kodak being suitable for general views out of doors is equipped only for instantaneous work, the very nature of the instrument making timed exposures out of the question.

The sun should always be behind the back or over the shoulder of the operator. This is of even more importance than with the ordinary camera, because as the lens moves through such a large field it is next to impossible to shade it in taking pictures towards the light. Do not expect to take pictures of nearby objects with the Panoram-Kodak. As its name indicates, the instrument is intended only for general views.

I. Set the shutter by turning lever which lies back of the finder, so that it points in the opposite direction to that in which the lens points. Unless the shutter has already been set, this will simply mean that the lever is to be swung to the opposite side of semi-circle (Fig. I) and the flap which covers lens may be left closed until shutter is set. It will be noted that in the plates at each end of the semi-circle through

which the shutter lever swings are two catches. The first of these catches (*i. e.* the ones furthest from the finder) are for the slow speed of shutter and are to be used for all ordinary exposures.

Fig. I.

For views on the seashore, when the light is extremely bright, use the high speed by turning lever to the second catch and thus increasing the tension on shutter.

II. Lift up the nickel shield on finder and drop the flap in front of lens so that it will be in position shown in Fig. II. Be sure and drop flap far enough so that it will not cut off light from lens.

Fig. II.

III. The Kodak may be placed on some level support as in Fig. II or held on the arm as shown in Fig. III, but in either event care must be taken to see that it is *held level* and steady. Try operating the shutter in this way a few times *without any film in the camera,* before making your first exposure.

NOTE:—Use the level which is located on the top of Kodak in order to determine if the instrument is in a perfectly level position. It is *very important* that the Kodak be placed in a perfectly level position before making an exposure, or the horizontal lines will appear curved or distorted.

The V-shaped lines diverging from the back of camera show the scope of view that will be included.

The finder shows the amount of foreground and sky and can be used for examining the entire view by simply swinging the camera, before exposure, so as to take in the full scope of view as indicated by the V-shaped lines on top of camera.

All being in readiness—

HOLD THE KODAK STEADY,
HOLD IT LEVEL

and press the button at right of finder as shown in Fig. II or as in Fig. III.

This makes the exposure.

Fig. III.

IV. Wind a new film into position by turning to the left on key until the figure 3 or the letter B (as the case may be) appears before the red window in back of camera.

NOTE:—The warning index hand appears only before No. 1.

NOTE:—On the top of Kodak located immediately behind the lever for setting the shutter, will be found a metal plate, on which is mentioned the number of Eastman Film Cartridge that is to be used in the Kodak. It also states on what numbers or letters that the exposure should be made. For instance the No. 1 Panoram-Kodak uses with each exposure, two sections of No. 1 Folding Pocket Kodak Film and must therefore be exposed on Nos. 1, 3, 5, etc.—The No. 4 Panoram-Kodak uses No. 4 Bulls Eye Kodak Film, and must be exposed on the letters, A, B, C and D.

Repeat the foregoing operations for each exposure.

VERTICAL PANORAM-PICTURES.

Not often, but nevertheless occasionally, it is desirable to make a vertical picture with the Panoram-Kodak. A high waterfall, or narrow ravine or a mountain peak will now and then offer a subject for this unique treatment. The field for artistic work in this direction is a new one, and well worth cultivating. A little practice and experiment will lead to the most charming results.

FOR TAKING GROUPS.

The Panoram-Kodak has no equal for taking outdoor groups. The scope of view is so wide that a great number of people can be included, with all in the "front row." The subjects should stand in a semi-circle with each the same distance from the camera (not less than twenty feet) and care should be taken not to have any horizontal straight lines in either the fore or background. There is nothing less artistic than a straight board fence or the clapboarded side of a house. Such backgrounds are undesirable with any camera, but are to be especially avoided with the Panoram. An easy way to arrange the group is for the operator to hold the end of a string of proper length while an assistant describes the arc of a circle with the other end, placing the subjects on the imaginary curved line. This arrangement, it will be seen, brings each individual at the same distance from the Kodak and thus insures their being of the proper relative size in the photograph. Of course there is no objection to having the "sitters" banked one above the other where an exceedingly large group makes this necessary, but for the best results the semi-circle arrangement should always be followed.

PART III.

REMOVING THE FILM.

No dark-room is required in changing the spools in the Panoram Kodak. The operation, should, however, be performed in a subdued light.

I. Having made the last exposure, 5 or 11, B or D, (as the case may be), give the key about twenty half-turns.

Fig. I.

II. Open the back and sides as before described, page 5.

III. Holding the paper taut, so as to wind tightly, turn the key until the paper is all on the reel.

IV. Hold ends of duplex paper and sticker together to prevent paper from loosening on reel.

NOTE—If sticker folds under roll, raise it up with the point of a lead pencil.

V. Pull out spool pin and winding key, and lift out roll of film as shown in Fig. I.

VI. Fold over half-inch at end of duplex paper (so as to make subsequent breaking of the seal easy), and then seal with sticker.

VII. Now remove empty spool to winding side, fitting the key web into slotted end of spool, centering pin in same hole in axis at opposite end.

The Kodak may now be reloaded as before described.

VIII. Wrap up exposed film immediately to prevent the possibility of light being admitted.

The roll of exposures, as prepared, can now be mailed to us for finishing (see price list) or you can do the developing and printing yourself.

NOTE:—In mailing us films for development do not fail to mark the packages plainly with your name and address and write us a letter of advice, with remittance.

IMPORTANT.

When the Kodak is not in use, leave the lever which sets shutter, pointing towards the center of Kodak, as this removes all tension from spring. If spring is kept constantly under tension it will be weakened.

"CINCH MARKS."

If the film and paper loosen up a trifle when taken from the camera, many amateurs are likely to take the cartridge in the hand and wind it as closely as possible, cinching it tightly with a twisting motion. There's nothing more likely to injure the negative than this tight drawing of the film, as it abrades the surface, making fine parallel scratches running lengthwise of the film, which in some cases, will ruin the negative. *Do not "cinch" the cartridge.* It simply needs to be wound tightly enough so that the duplex paper keeps inside the flanges.

KEEP DUST OUT OF THE CAMERA.

Defective negatives are often caused by particles of dust which have collected on the inside of the camera and settle upon the film in particles that produce small dark spots upon the prints.

It is therefore well to wipe out the inside of camera occasionally with a slightly damp cloth. In summer weather or after the camera has remained idle for any length of time, this needs special attention.

CLEAN LENSES.

CLEAN LENS.

LENS SLIGHTLY DIRTY.

Dirty or dusty lenses are frequently the cause for photographic failures. These pictures illustrate this point clearly. The sharp, full-timed picture at top was taken with the lens clean and in good order. To produce the effect shown in the picture at bottom, the operator lightly touch the face of the lens with his thumb, which was slightly damp with perspiration.

Lenses should be frequently examined by looking *through* them, and if found to be dirty, should be wiped, both front and back, with a clean, soft linen handkerchief. In summer weather this needs special attention. Large spots of dust or dirt on the lens will cause defects in the picture, while if the lens is evenly covered with a film of dust, dirt or moisture, the effect will be to cut off a great deal of light and make the picture undertimed.

PART IV.

DEVELOPING.

There is no necessity of working in a dark-room or waiting until night to develop film. It can be done in daylight at any time and place. And the daylight method of developing film gives better results than the dark-room way.

Film may be developed in daylight by the Kodak Film Tank method. Detailed directions for developing will be found in the manual which accompanies the goods. The operation is given briefly in the following pages.

We recommend the Kodak Film Tank method particularly for its simpleness, and the uniformly good negatives which it gives.

DEVELOPING WITH A KODAK FILM TANK.

For use with No. 1 Panoram-Kodak Film provide a 2½ inch tank. For the No. 4 Panoram-Kodak Film provide a 3½ inch tank.

The Kodak Film Tank consists of a wooden box, a light-proof apron, a "transferring reel", a metal "solution cup" in which the film is developed, and a hooked rod for removing film from solution. There is also a dummy film cartridge with which one should experiment before using an exposed cartridge. The various parts of the outfit come packed in the box itself with the exception of the "2½ inch". The solution cup in this case is too large in diameter to fit into the box.

1. Take everything out of the box. Take apron and Transferring Reel out of solution cup.

Fig. I.

2. Insert the axles marked C and D in the cut, in the holes in the front of box. The front will be toward you when the spool carrier in end of box is at the right.

3. The axle "C" must be pushed through the hollow spindle which will be found loose in the box. The two lugs on this spindle are to engage the hooks at end of apron. The axle "D" must be pushed through the hollow rod of the Transferring Reel to hold reel in position as indicated in the illustration. The flanges at each end of the Transferring Reel are marked "Y" in the illustration.

4. Attach one end of the apron to spindle through which axle "C" passes, by means of the metal hooks which are to be engaged with the lugs on the spindle. (Fig. 2). The corrugated side of the rubber bands is to be beneath the apron when it is attached. Turn to left on axle "C" and wind entire apron on to spindle, maintaining a slight tension on apron in so doing by resting one hand on it.

Fig. II.

IMPORTANT—Preparing the Cartridge.

Film to be used in the Kodak Film Tank must be fastened to the duplex paper at both ends. All films are fastened at one end at our factory. The operation can be accomplished in the following manner:

Just before you are ready to develop (holding spool with the unprinted side of the duplex paper up) unroll the duplex paper carefully until you uncover the piece of gummed paper which is fastened to end of film and is to be used as a means of fastening film to duplex paper. Moisten the gummed side of sticker evenly for about an inch across the end and stick it down to duplex paper, rubbing thoroughly to secure perfect adhesion. Wind end of duplex paper on spool again and the cartridge is ready to insert in machine.

5. Insert film cartridge in spool carrier and close up the movable arm against end of spool. Have the duplex paper ("B" in Fig. 1) lead from the top.

6. Break the sticker that holds down the end of duplex paper, thread the paper underneath wire guard on transferring reel through which axle "D" passes and turn axle slowly to right until the word "stop" appears on duplex paper.

7. Now hook apron to lugs on axle "D" in precisely the same manner that you hooked the opposite end to axle "C" except that axle "D" turns to the right.

8. Turn handle half a revolution so that apron becomes firmly attached and put on cover of box. Turn axle "D" slowly and steadily until duplex paper, film and apron are rolled up together on transferring reel. As soon as this is completed the handle will turn very freely.

While turning axle "D" to the right, keep pressure on axle "C" in the opposite direction. This will act as a brake and will keep the apron, film and duplex paper taut and in the correct position.

9. Prepare developing solution in solution cup according to directions in Kodak Film Tank Manual.

IMPORTANT.

10. Remove cover from box and take hold of the duplex paper where the paper extends beyond the end of apron; then wind axle "D" until the duplex paper becomes taut. Unless this is done there is a chance of the film touching portions of the apron and causing non-development of that part of the film.

NOTE:—Where the film is so short that the duplex paper does not extend, the above instructions are not necessary.

11. *Draw out axle "D", holding apron and duplex paper with the other hand to keep end of apron and paper from loosening. Remove entire Transferring Reel, containing apron, duplex paper and film (which is freed by pulling out axle "D") and slip a small rubber band around the apron tightly so that there will be no possibility of its unwinding.*

NOTE:—In removing reel do not squeeze the apron, as by doing so there will be a tendency for it to buckle.

Insert the Transferring Reel (containing apron, duplex paper and film) in the previously prepared developer immediately.

USING THE SOLUTION CUP.

12. Having filled Solution Cup, lower Transferring Reel into cup with end containing cross bar up. (Fig. 3). Let reel slide down slowly so solution will not overflow. The operation of removing reel from box can be done in the light of an ordinary room, but for safety it is well that the light should not be too bright.

NOTE: — Immediately after lowering reel into solution cup, catch it with the wire hook and move gently up and down two or three times, but not allowing reel to come above surface of developing solution. This is to expel air bubbles.

Fig. III.

The total length of time for development is 20 minutes.

Allow development to proceed for about two minutes with the cover of the Solution Cup off; then place the cover on the cup, putting lugs on cover into grooves and tighten cover down by turning it to right.

Now turn the entire cup end for end and place in a tray or saucer to catch any slight leak from the cup. At the end of three minutes again reverse the cup, and

thereafter reverse every three minutes until the time of development (20 minutes) has elapsed.

Turning the solution cup allows the developer to act evenly and adds brilliancy and snap to the negatives.

13. The wire hook is to be used for lifting the reel out of the cup. Hook on to the cross bar in one end of reel. When the end of reel containing cross bar is at the bottom of cup, the hook is just long enough to catch the cross bar.

14. When development is completed, pour out developer and fill cup with clear, cold water, and pour off three times to wash the film. When removing cover of solution cup, place cup in palm of hand, so as to obtain a firm grip on bottom of can. Then grip cover with other hand and turn slowly to left, when cover will loosen readily. Then remove Transferring Reel, separate film from duplex paper and place immediately in the Fixing Bath, which should be in readiness, prepared in accordance with directions on page 28.

NOTE:—For the convenience of the tourist, we can furnish a Flexible Rubber Tray, which is intended for fixing or washing the film. It will hold a sufficient amount of solution to fix two twelve or ten exposure rolls of film. This tray, when not in use, will fit over the 3½ inch Kodak Film Tank Box. See price list.

The film may be separated from duplex paper in the subdued light of an ordinary room if the developer is thoroughly washed out.

The operation of separating film from duplex paper should be done over a bowl, bath tub or sink.

If the tank is not to be used again immediately the apron and tank should be washed and wiped dry. The apron will dry almost instantly if immersed for a moment in hot water.

Be careful, however, not to use extremely hot water, or the apron will be liable to crack.

Keep apron wound on Transferring Reel when not in use. Never leave apron soaking in water.

TIME AND TEMPERATURE FOR TANK DEVELOPMENT.

It sometimes happens that the amateur is not able to obtain or maintain the standard or normal temperature of 65 degrees Fahr. when using the Kodak Tank and the Kodak Tank Developer Powders. In such cases the following table will be found of value:

Temperature	Time—One Powder	Time—Two Powders
70 Degrees	15 Minutes	8 Minutes
69 "	16 "	
68 "	17 "	9 "
67 "	18 "	
66 "	19 "	
65 " NORMAL	**20 " NORMAL**	**10 NORMAL**
64 "	21 "	
63 "	22 "	
62 "	23 "	11 "
61 "	24 "	
60 "	25 "	
59 "	26 "	12 "
58 "	27 "	
57 "	28 "	
56 "	29 "	13 "
55 "	30 "	
54 "	31 "	
53 "	32 "	14 "
52 "	33 "	
51 "	34 "	
50 "	35 "	
49 "	36 "	15 "
48 "	37 "	
47 "	38 "	16 "
46 "	39 "	
45 "	40 "	17 "

Temperature of Developer must not exceed 70 degrees Fahr., as above that point there is danger of the film frilling. 45 degrees Fahr. is the lowest tem-

perature at which the developing powders can be dissolved and even at this temperature the powder must be finely crushed and added slowly to the water.

It is best to use the normal temperature (65 degrees) when possible as the use of a developer that is colder than normal has a slight tendency to increase the contrast in a negative while the use of a developer warmer than normal slightly flattens the resulting negatives.

DEVELOPING SEVERAL ROLLS OF FILM AT ONCE.

Several rolls of film may be developed at the same time if the operator wishes. To do this it is necessary to have a "Duplicating Outfit" consisting of 1 Solution Cup, 1 Transferring Reel and 1 Apron for each additional roll of film to be developed. The extra rolls of film may then be wound on to Transferring Reels as previously described, and immersed in the Solution Cups.

DEVELOPING IN THE DARK-ROOM

Provide the following articles:

1 Kodak Candle Lamp,
4 No. 1 Panoram Developing Trays, or
4 No. 4 Panoram Developing Trays,
1 8 oz. Graduate,
1 Stirring Rod,
1 Pkg. Eastman Special Developer Powders,
1 lb. Kodak Acid Fixing Powder.

Also provide a pair of shears, a pitcher of cold water (preferably ice water), a pail for slops, and a *dark-room* having a shelf or table.

By a dark-room is meant one that is wholly dark—not a ray of light in it. Such a room can easily be secured at night almost anywhere. The reason a dark room is required is that the film is extremely sensitive to white light, either daylight or lamplight, *and would be spoiled if exposed to it,* even for a fraction of a second.

Having provided such a room or closet, where when the door is closed, no ray of light can be seen:

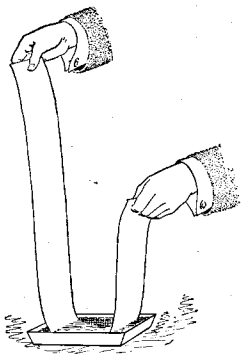
Set up on the table or shelf the Kodak Candle Lamp, and light it as directed in the circular which comes in the box in which the lamp is inclosed.

1. Fill one of the trays nearly full of water (first tray.)

2. Open two of the developer powders, then put the contents (two chemicals in each) into graduate and fill it up to the eight-ounce mark with cold water. Stir until dissolved, with the wooden stirring rod, and pour into the second tray.

NOTE:—Proper temperature is important, and for the best results the developer should be at 65 degrees Fahr., and the fixing bath and wash water should be kept between 50 and 60 degrees Fahr. If the developer is too warm, the negatives are very liable to fog, and in many cases the emulsion will be softened and the surface will be very much more liable to injury through scratching. If the developer is too cold the chemical action is retarded, resulting in flat, weak negatives.

3. To develop, first unroll film and detach the entire strip from the duplex paper.



4. Pass the film through the tray of clean cold water, as shown in the cut, holding one end in each hand. Pass through the water several times, that there may be no bubbles remaining on the film. When it is thoroughly wet, with no air bubbles, it is ready for development.

Now pass the film through the developer in the same manner as described for wetting it, and shown in cut. Keep it constantly in motion and in about one minute the high lights will begin to darken and you will readily be able to distinguish the unexposed sections between the negatives, and in about two minutes will be able to distinguish objects in the picture. Complete development in the strip, giving sufficient length of development to bring out what detail you can in the thinnest negatives. There is no harm in having your negatives of different density. This can be set right in the printing. The difference in density does not affect the difference in contrast.

Keep the strip which is being developed constantly in motion, allowing the developer to act 5 to 10 minutes. The progress of development may be watched by holding the negatives up to the lamp from time to time.

NOTE:—Avoirdupois weight is the standard used in compounding photographic chemicals.

When developing Eastman N. C. Film, care must be taken not to hold it close to the lamp for any length of time. These films are very rapid and are orthochromatic, therefore liable to fog unless handled very carefully in the dark-room.

6. After completing development, transfer to the third tray and rinse two or three times with clear, cold water.

NOTE:—At this stage the negatives may be cut apart, if you prefer, and fixed singly.

FIXING.

Provide a box of Kodak Acid Fixing Powder and prepare the fixing bath as per directions on the package. Put this into a tray (fourth tray of an Eastman developing outfit) or wash bowl. When the powder has thoroughly dissolved, add to the solution as much of the Acidifier, which you will find in a small box inside the large one, as directions call for. As soon as this has dissolved the Fixing Bath is ready for use. Any quantity of the bath may be prepared in the above proportion.

Pass the film face down (the face is the dull side) through the fixing solution, as shown in cut on page 27, holding one end in each hand. Do this three or four times and then place one end of the film in the tray, still face down, and lower the strip into the solution in folds. (If the negatives have been cut apart immerse them singly.) Gently press the film where the folds occur, not tightly enough to crack it, down into the solution a few times during the course

of fixing. This insures the fixing solution reaching every part of the film. Allow the film to remain in the solution two or three minutes after it has cleared or the milky appearance has disappeared. Then remove for washing.

N. C. Film must always be fixed in an acid bath, but the following formula may be used if desired:

ACID HYPO FIXING BATH.

Water, - - - - - -	64 ounces
Hypo, - - - - - -	16 ounces

When thoroughly dissolved, add 4 ounces of Velox Liquid Hardener, or the following hardening solution, dissolving the chemicals separately, and in the order named:

Water, - - - - - -	5 ounces
E. K. Co. Sulphite of Soda, - -	1 ounce
Acetic Acid (28%), - - -	3 ounces
Powdered Alum, - - - -	1 ounce

If preferred, 1 ounce Citric Acid can be substituted for Acetic.

This bath may be made up at any time in advance and may be used so long as it retains its strength, or is not sufficiently discolored by developer carried into it, to stain the negatives.

NOTE:—The fixing solution must only be used in Tray No. 4, and the negatives, after fixing, must not be put in either No. 1 or No. 2 trays. Neither must any of the fixing solution be allowed to touch the films through the agency of the fingers or otherwise until they are ready to go into the fixing bath, otherwise they will be spotted so as to be useless.

WASHING.

There are several ways of washing film. It may be placed in a tray or wash bowl of cold water and left to soak for five minutes in five changes of cold water, moving about occasionally to insure the water acting evenly upon it, or it may be given, say two changes as above and then left for an hour in a bowl with a very gentle stream of water running in and out.

If negatives have been cut apart they should be kept separated most of the time so that they wash thoroughly.

DRYING N. C. FILM NEGATIVES.

Drying with Clips.

When thoroughly washed, snap an Eastman Film Developing Clip on each end of the strip and hang it up or pin it up to dry. Be sure, however, that it swings clear of the wall so that there will be no possibility of either side of the film coming in contact with the latter. In drying, N. C. films should be cut up into strips.

NOTE:—When six No. 1 Panoram exposures have been washed in one strip, cut in the center. When there are four No. 4 Panoram exposures, cut at same point.

If the negatives have been separated, pin by one corner to the edge of a shelf or hang the negatives on a stretched string by means of a bent pin, running the pin through the corner of film to the head, then hooking it over the string.

OVER-DEVELOPMENT.

Over-development may be caused by a mistake in leaving films in the developer too long, by using solutions too warm or by those who mix their own developer in getting the developing agent too strong.

In this case the negative is very strong and intense by transmitted light and requires a very long time to print. The remedy is to reduce by use of Eastman Reducer or by the following method:

REDUCER.

First soak the negative 20 minutes in water, then immerse in:

Water, - - - - - - -	6 ounces
Hypo, - - - - - - -	½ ounce
Potassium Ferricyanide (saturated sol.) POISON, - - - - -	20 drops

Rock tray gently back and forth until negative has been reduced to the desired density, then wash 10 minutes in running water or in four changes of water.

Negatives may be reduced locally by applying the above solution to the dense parts with a camel's hair brush, rinsing off the reducer with clear water occasionally to prevent its running onto the parts of the negative that do not require reducing.

UNDER-DEVELOPMENT.

An under-developed negative differs from an under-exposed one, in that it is apt to be thin and full of detail, instead of harsh and lacking in detail.

This defect would be caused by a mistake in removing films from the developer too soon, by using solution too cold, or by an error in compounding

chemicals. It is obvious that neither of these defects will occur in Tank Development if instructions are properly followed.

Intensification by Re-Development.

There are a number of different processes for intensifying under-developed negatives, the most common being by means of Bichloride of Mercury, and Sodium Sulphite or Ammonia.

This method, though simple to use, has its disadvantages, as it builds up the highlights out of proportion to the weaker portions of the negative, and also, unless carefully handled is apt to produce iridescent stains, or granular markings that are impossible to remove.

While the method of intensification by re-development is only comparatively new, the now common use of Velox and Royal Re-developer for Sepia tones on Velox and Bromide prints will make this the most effective means of intensification.

Velox or Royal Re-Developer may be used in exactly the same manner as for producing Sepia tones on developing paper.

Negatives intensified by re-developing are built up evenly, without undue contrast and without the chance of staining.

The advantage of being able to use the chemicals for two different purposes (Sepia toning prints or intensifying negatives) is obvious, the result in either case being all that could be desired.

PART V.

PRINTING ON VELOX PAPER.

Eastman N. C. Film negatives yield beautiful, soft black and white effects when printed on Velox developing out paper.

MANIPULATION.

Velox prints may be successfully made, using daylight for exposure. Select a north window, if possible, as the light from this direction will be more uniform. *Owing to its sensitiveness the paper should be handled in subdued light, otherwise it will be liable to fog.* Proper precautions should be taken to pull down the window shades and darken the room sufficiently during manipulation. If the light is too strong for printing it should be subdued or diffused by the use of several thicknesses of white tissue paper. Owing to the varying intensity of daylight uniform results are not as certain as when using artificial light. In the following instructions for manipulating Velox, it must be understood that artificial light will be the light used. A kerosene lamp, fitted with a round burner (known as Rochester burner), may be used, but owing to the decidedly yellow light this affords, a considerably longer exposure will be necessary than when using a Mazda lamp.

The comparative exposures with Special Velox from an average negative using various sources of light are approximately as follows:

NOTE:—When using Regular or Contrast Velox increase the exposure.

Size of Negative	Distance from Light	60 Watt Mazda	40 Watt Mazda	25 Watt Mazda	Welsbach Burner (Gas)	Average Oil Lamp
3 1-4x5 1-2 4 x 5 and Smaller	10 in.	4 Sec.	6 Sec.	12 sec.	16 Sec.	50 Sec.

NOTE:—When printing from a Panoram negative, it should be placed from the light a distance equal to its length, and the exposure increased accordingly.

Having provided a suitable light and a convenient place to work, arrange three trays before you on your work table in this order:

1 oz. Nepera Solution 4 ozs. Water 1	Clean Water 2	X Towel	Kodak Acid Fixing Bath as directed on page 28. 3

NOTE:—Do not allow the direct rays of light used for printing to strike Tray No. 1, which is used for the developer. Place a piece of red or orange colored paper between the light and tray No. 1, so as to obtain a subdued and safe light. By doing so you will avoid fogging the paper during development.

Proper temperature is important, and for best results the developer should be 70 degrees Fahr. and the fixing bath and wash water 50 degrees Fahr. If the developer exceeds 70 degrees the prints are liable to fog and the emulsion soften. If too cold, chemical action is retarded, resulting in flat, weak prints.

PRINTING.

Velox may be safely manipulated ten feet from the ordinary gas flame.

Having everything in readiness, open the printing frame and lay the negative back down upon the glass —(the back is the shiny side). Place upon the negative a sheet of the Velox paper face down.

The paper curls slightly, the face or sensitive side being concave; an absolute test is to bite the corner of the sheet; the sensitive side will adhere to the teeth.

The paper not used must be kept covered in its envelope.

Place the printing frame the correct distance from the artificial light used, holding the frame away from the burner a distance equal to the diagonal of the negative. See exposure table, page 34.

We suggest that before making the first exposure the cutting of a piece of Velox paper into strips about an inch wide and placing one of them over an important part of the negative, make the exposure, using your best judgment as to the distance from the light and the time of printing. Develop it, and if not satisfactory try another strip, varying the time as indicated by the first result. When the desired effect is secured, you can make any number of prints from the same negative, and if the time of exposure, distance from light as well as the time of developing are identical, all the prints should be equally good. By comparing your other negatives with the one you have tested, you will be able to make a fairly accurate estimate of exposure required by any negative.

After taking the exposed piece of paper from the printing frame, in a safe place previously selected, it is ready for development. The dry print should be

immersed face up in the developer (Tray No. 1) and quickly and evenly covered with the solution. Regular and Contrast Velox should be developed not to exceed twenty seconds; Special Velox about twice as long. No exact time can be given, as the strength of developer used would make a difference in the time.

As soon as the image has reached the desired depth remove from the developer to the second tray and rinse for a moment, turning the print several times, then place it in the acid fixing bath (Tray No. 3) keeping the print moving for three or four seconds, the same as was done when rinsing, move prints about occasionally so as to give even and thorough fixing, preventing stains and other troubles. Leave the print in this solution until thoroughly fixed; this will take about fifteen minutes. When fixed remove from the fixing bath and wash thoroughly for about an hour in running water, then dry. After drying, prints may be trimmed and mounted.

Do not use a fixing bath that has been used for fixing film.

You should be systematic in working, remembering that cleanliness is essential in photography. Care must be taken to prevent the Hypo fixing bath in any way getting into the tray containing the developer. Have a clean towel when beginning the work and wipe your hands each time after you have handled prints in fixing bath.

DETAILS.

CLEAN DISHES: CLEAN HANDS: The faintest trace of Hypo will spoil the prints if it gets into contact with them before the proper time. Great care should therefore be used to have both hands and trays clean.

DEVELOPER once used should not be carried over and used the next day or subsequently.

DONT'S.

Don't use a tray for developing which has previously been used for hypo solution, pyro developer or final washing.

Don't use an old fixing solution; it is liable to cause trouble.

Difficulties—Their Cause and Remedy.

VEILED WHITES: Caused by forcing development, fogged paper.

REMEDY: Give more time, screen light. Also caused when image flashes up in developer by too much exposure, in which case give less time.

MUDDY SHADOWS: Caused by developer being used for too many prints. Remedy, use fresh developer.

CONTRASTY PRINTS: Caused by insufficient time or negative too harsh. Remedy, give more time; make softer negatives.

FLAT PRINTS: Caused by overtiming or negatives flat. Remedy: Give less time in first instance, and if trouble is with negatives, give negatives less time; develop further.

STAINS: Caused by forcing development, or chemically dirty dishes or hands, insufficient fixing, foreign chemicals. Remedy: Do not allow chemicals other than those given in formulæ to come in contact with paper; use fresh fixing bath; keep prints in motion, three or four seconds when placed in the fixing, move prints about occasionally and if due to forcing development give more time in printing.

ROUND, WHITE SPOTS: Caused by air bells which form on face of print when developer is first flowed on. Remedy: Use more developer, break air bells with finger.

COLORING VELOX PRINTS.

The various surfaces of Velox are particularly well adapted for coloring, and prints may be made extremely interesting through the many beautiful effects obtained by the use of Velox Transparent Water Color Stamps. No experience is necessary when using these colors and any amateur can secure excellent results as full directions accompany each set of stamps.

Put up in book form, they will be found most convenient. Each book contains twelve colors, arranged in perforated leaflets, making twenty-four stamps of each color.

The stamps will also be found most desirable for the coloring of Bromide enlargements, lantern slides, etc., and in fact for all work where perfect blending and transparency of color is required. See price list.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

PART VI.

MOUNTING.

The most satisfactory method for mounting prints is by the use of Kodak Dry Mounting Tissue, as by the use of this tissue the print lies perfectly flat in absolute contact even on the thinnest mount and absolutely without curl.

The tissue comes in flat sheets, dry, not sticky, and easy to handle and the tissue being water-proof protects the print from any impurities in the mount stock.

For multiple mounting and folders the tissue is ideal.

The process of mounting is as follows:

Lay the print on its face and tack to the back a piece of the tissue of the same size by applying the point of a hot flatiron to small spots at opposite ends.

Turn the print face up and trim print and tissue to the desired size. Place print in proper position on mount and cover with a piece of smooth paper and press the whole surface with a hot flatiron.

Press, don't rub.

The iron should be just hot enough to siss when touched with the wet finger. If the iron is too hot the tissue will stick to the mount and not to the print, if too cold the tissue will stick to the print and not to the mount.

Remedy: Lower or raise the temperature of the iron and apply again.

When mounting with the ordinary paste, prints should be mounted wet. After the prints have been trimmed to correct size, immerse in clean water for a few moments, then place in a pile face down on a sheet of clean glass and squeegee off all surplus moisture, apply the paste with a bristle brush, working in the paste thoroughly, then lift the print by the opposite corners, turn it over and place it in proper position on the mount.

Cover with a clean sheet of blotting paper and press into contact with squeegee or rubber print roller.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

PRICE LIST.

No. 1 Panoram-Kodak for pictures 2¼ x 7 in.,	$13.50
N. C. Film Cartridge, 6 exposures, 2¼ x 7 in., (No. 1 Panoram-Kodak uses the regular No. 1 Folding Pocket Kodak cartridge.) No. 105,	.40
Do., 3 exposures,	.20
Black Sole Leather Carrying Case, with Shoulder Strap,	3.75
Kodak Film Tank, 2½ inch,	4.00
Duplicating Outfit for same,	2.00
Developing Powders for 2½ and 3½ inch Kodak Film Tank, pkg. ½ doz.,	.20
No. 4 Panoram-Kodak for pictures 3½ x 12 in.	22.50
N. C. Film Cartridge, 4 exposures, 3½ x 12 in., (No. 4 Panoram-Kodak uses the regular No. 4 Bulls-Eye Kodak Cartridges.) No. 103,	.75
Do., 2 exposures,	.45
Black Sole Leather Carrying Case, with Shoulder Strap,	4.50
Kodak Film Tank, 3½ inch,	5.50
Duplicating Outfit for same,	2.75
Flexible Rubber Tray, which is used for fixing and washing films, fits over the 3½ inch Kodak Film Tank Box,	1.40

NOTE: Prices subject to change without notice.

Developer Powders for 2½ and 3½ inch Kodak Film Tank, pkg. ½ doz.,	$ .20
Eastman Pyro Developer Powders, per dozen, pairs,	.50
Do., per ½ dozen pairs,	.25
Eastman Hydrochinon, Eikonogen, Pyro and Special Developer Powders, in hermetically sealed glass tubes, per box of 5 tubes,	.25
Eastman Hydrochinon Developer Powders (do not stain the fingers), per doz. pairs,	.50
Do., per ½ dozen pairs,	.25
Glass Stirring Rod Thermometer,	1.00
Kodak Acid Fixing Powder, 1 lb. package,	.25
Do., ½ lb. package,	.15
Do., ¼ lb. package,	.10
Eastman Solio Paper, 2¼ x 7, per pkg. 2 doz.,	.25
Do., 3½ x 12, per doz.,	.35
Solio Toning Solution, per 8 oz. bottle,	.50
Do., per 4 oz. bottle,	.30
Solio Toning Solution, 4 oz. bottle, in mailing case, including postage,	.50
Velox Paper, 2¼ x 7, per doz.,	.15
Do., 3½ x 12, per doz.,	.45
Velox Transparent Water Color Stamps,	.25
Velox Transparent Water Color Stamp Outfit, consisting of Artist's Mixing Palette, three special Camel's Hair Brushes, and one book of Velox Transparent Water Color Stamps, (12 colors),	.75

NOTE: Prices subject to change without notice.

Nepera Solution, for developing Velox, 4 oz. bottle,	$ .28
Bulls Eye Composition Trays, 2½ x 7, each,	.45
Do., 3½ x 12, each,	.90
No. 1 Panoram Kodak Printing Frames, each,	.30
No. 4 Panoram-Kodak Printing Frames, each,	.75
Kodak Dry Mounting Tissue, 1 doz., 5 x 7,	.10
Do., 3½ x 12,	.10
Eastman Film Developing Clips, 3½ inch (nickeled), per pair,	.25
Kodak Film Clips (wooden), 5-inch, per pair,	.15
Kodak Junior Film Clips, No. 1, each,	.12
Kodak Metal Tripod, No. 0,	2.75
Do., No. 1,	4.00
Do., No. 2,	4.50
Leather Carrying Case for Kodak Metal Tripod, Nos. 0, 1 and 2,	2.25
Leatherette Carrying Case for No. 0 and No. 1,	.75
Developing film only, 6 exposures, (No. 1 Panoram),	.35
Printing and Mounting only, each, Velox,	.20
Printing only, each, Velox, unmounted,	.14
Developing film only, 4 exposures, (No. 4 Panoram),	.50

NOTE: Prices subject to change without notice.

Printing and Mounting only, each, Velox, .	$ .25
Printing only, each, Velox, unmounted, . .	.17
5 x 16 Black and White Bromide Enlargements, mounted on card, ...	1.00
6½ x 20 Black and White Bromide Enlargements, mounted on card, ...	1.25

NOTE:—An additional charge will be made where enlargements are in Sepia.

On enlargement orders, if in our opinion, the print will be improved by double mounting, we will do it at an additional charge of 10 cents, or triple mounted at 15 cents.

All contact prints are furnished unmounted unless otherwise specified.

NOTE: Prices subject to change without notice.

EASTMAN KODAK COMPANY,
Rochester, N. Y.

Be Sure to Use Pure Chemicals.

To get the best negatives from your films—to get the best prints from your negatives—it is imperative that the chemicals which you use be absolutely pure.

For all our films and papers we furnish powders and solutions, mixed in just the proper proportions and compounded from the purest chemicals, rigidly tested in our own laboratories.

But we go even further than this. For those who prefer to mix their own solutions by formula, we have prepared a line of carefully tested standard photographic chemicals.

Don't mar good films and plates and good paper with inferior chemicals.

This seal stands for the highest purity. Be sure it's on the package before purchasing.

EASTMAN KODAK COMPANY,
ROCHESTER, N. Y.