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PRINT-MAKING
AT HOME



ON
SELO
PAPER

ERRORS OF EXPOSURE HAPPEN-----SOMETIMES!

That is why you should choose one of the four Selo Films when loading your camera because Selo Films possess exceptional "latitude"—the quality which is kind to errors of exposure and ensures a printable negative from almost every exposure.

In addition to extreme latitude, Selo Films possess the following qualities essential to first-class films.

SELO ORTHO The low-priced high-quality film possessing medium speed and valuable colour sensitivity which prolongs the photographic day.
Medium Speed, Anti Halo, Orthochromatic

SELOCHROME The better film for the photographer who can afford a little more in return for extra speed, increased colour sensitivity and more latitude.
Extra Fast, Anti Halo, Highly Ortho

SELO FINE GRAIN PANCHROMATIC The medium speed completely colour-sensitive film. for the photographer who wants the best but is not particular about high speed and likes big scale enlarging.
Medium Speed, Anti Halo, Fully Panchromatic

SELO HYPERSENSITIVE PANCHROMATIC The extreme speed film for every photographic occasion. Completely colour sensitive and backed like Selochrome and Selo Fine Grain Panchromatic to prevent halation (i.e., spreading of bright images).
Extreme Speed, Anti Halo, Fully Panchromatic

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**SELO PAPER FOR
PERFECT PRINT-MAKING
BY ARTIFICIAL LIGHT**

It's GREAT FUN making your own prints on Selo Paper! The thrill of watching the picture appear on the blank piece of paper that has just been exposed behind one of your favourite negatives to the room lamp—electric, gas, spirit or even oil—is one of the most satisfying of those experiences which combine to make photography the most fascinating of all hobbies.

And this thrill is not lost or lessened by the dimness of a darkroom. Printing on Selo Paper may be enjoyed in the living-room (or any other room) in the fullness of its normal artificial illumination. The sensitivity of Selo Paper is so skilfully adjusted that the light of the room lamp is amply powerful for printing with a few seconds exposure at a distance of a few inches and yet amply safe to permit the paper being handled, developed, etc., at a distance of a few feet in shadow.

Photographic knowledge is not needed. After you have perused this booklet the art of Selo printing by artificial light can be acquired with half-an-hour's practice and it is easily possible to produce excellent prints from the outset.

Selo Paper is of a type which has hitherto been known as "gaslight paper," but we prefer to call it "the paper for perfect print-making by *artificial* light" since *any* form of artificial light may be used although electric light, gaslight, or the light of oil and pressure spirit lamps are preferable. The light of burning magnesium ribbon may also be used. This independence of daylight and the comfort of printing in normal surroundings renders printing on Selo Paper a very pleasant, and companionable evening occupation for the winter.

SUITING THE PAPER TO THE NEGATIVE

Selo paper is made in three grades of contrast—Soft, Normal and Vigorous, and an extraordinary degree of control over the quality and contrast of the final print can be exercised by selection of the grade of printing paper to be used. Often a negative which is quite useless for printing by any other process can be made to yield a good print on the suitable grade of Selo Paper. That is why this type of paper is used exclusively for the printing of amateur snapshots by Developing and Printing firms who have to deal with all sorts of negatives—good, bad and indifferent.

Perhaps, before indicating the particular applications of these three grades of paper we ought to explain the meaning of the terms " Vigorous " and " Soft."

" Vigorous " means " having considerable contrast." Vigorous Selo Paper is not concerned with the rendering of subtle gradation but gives strong blacks and whites securing the utmost brilliancy and "pluck" from a negative that is flat and dull.

" Soft " means " lacking in contrast but having many gradations of tone." Soft Selo Paper renders every gradation of a negative that is too contrasty to print on any other paper and reproduces every half-tone' of the subject as a distinct shade of grey, when, on a normal paper several of these shades of grey would " run together " and some of the quality of the photograph would be lost.

VIGOROUS Selo Paper has been specially prepared to facilitate the successful printing of negatives which are lacking in contrast. Such a negative may be thin and weak owing to under-exposure and under or normal development (over-development of an under-exposure results in a negative which is hard in contrast and requires *soft* printing paper). Or such a negative may be very dense and flat because of over-exposure which

has allowed the shadows to " catch up " with the highlights so that they are only slightly less dense. Vigorous Selo Paper puts into the print the contrast that is lacking in the negative.

NORMAL Selo Paper, as its name suggests, is intended for printing negatives of average contrast.

SOFT Selo Paper has an unusually long scale of gradation (i.e., power to record a long series of tone values) suited to capture every elusive subtlety of gradation in a negative of excessive contrast—the sort of negative that is the result of under-exposure and forcing in development in a mistaken endeavour to " bring up " shadow detail, or the dense negative that has been correctly exposed but over-developed. In such negatives excessive density has been piled up on the highlights by extra development while little has been added to the shadow deposits. Thus the tone gradations in the brighter parts of the picture are buried and a printing paper of soft gradation like Soft Selo Paper is needed to unearth them. This choice of grade to suit all negatives is of the utmost value, it enables you to compensate for all reasonable errors of exposure or development, and increases greatly the percentage of negatives that will yield satisfactory prints. It is quite surprising how good a print the correct grade of Selo Paper will produce from an indifferent negative, and also how uniform a batch of prints can be made from negatives of widely different character and quality. Never discard a negative because it looks poor, try a print on Selo Paper.

Each grade of Selo Paper is made in three surfaces, Glossy, Satin (semi-matt) and Matt; Cream Rayon, a delicate cream paper with a surface resembling artificial silk, is also available in the double weight (cardette) thickness only.

Selo Paper is simple to use and clean in operation and is free from tendency to stain. It yields brilliant prints with rich, velvety blacks and sparkling highlights.

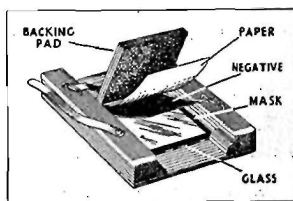
When trying Selo Paper for the first time, buy a

packet *each* of the Vigorous, Normal and Soft grades with the particular surface you like so that you are equipped to make a satisfactory print from every type of negative—no one grade of contrast is likely to suit *all* your negatives. You can then replace the paper that is used and will be ready always to make a good print from any kind of negative.

PRELIMINARY OPERATIONS

The only equipment required is a printing frame, a set of three dishes, a measure, developer and fixing salt, a towel, and a source of illumination by which to make the exposure. The dishes and ready prepared developer should be arranged on a bench or table, some distance from the light. It will be most convenient if this bench or table has a drawer underneath in which the unexposed paper may be placed. If, however, a drawer is not available, a box with a light-tight lid, such as is used for packing Ilford Plates, should be provided for the purpose. It is not wise to have the packet lying about on the table top and, moreover, if the drawer or box is used, the trouble of re-wrapping the paper carefully after each sheet has been removed is avoided.

The three dishes are used for developer, plain water and fixing solution respectively. They should be easily distinguishable, each being kept for its particular purpose and no other solution being used in it at any time. This precaution ensures prints free from stains. Dish No. 1 is used for developer and need be only slightly larger than the print, say $\frac{1}{4}$ plate size ($4\frac{3}{4}$ by $3\frac{3}{4}$ in.) assuming that $3\frac{1}{2}$ by $2\frac{1}{2}$ prints are being made. Dish No. 2, used for rinsing the prints between developing and fixing, should be about $\frac{1}{2}$ plate size (7 by 5 ins.). Dish No. 3, used for fixing, should be fairly large, say



whole plate size (9 by 7 in.) to accommodate a batch of prints and allow of convenient handling.

A spare basin of water should be available for rinsing the fingers occasionally, as it is absolutely necessary to avoid contaminating the paper or the developing solution with even the slightest trace of fixing salt. Any form of hand basin may be used.

The printing frame should be loaded and the print developed and fixed at a distance of at least six feet from the light and in the shadow of the body, i.e., the light should be at your back while these operations are carried out. If this cannot be arranged a temporary screen of cardboard or other material should be devised so that it cuts off the direct light and casts a shadow on the table or bench.

LOADING THE PRINTING FRAME

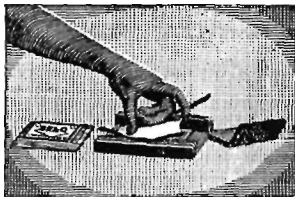
First divide the negatives to be printed into three batches, according to their contrasts for printing on the suitable grade of paper as already indicated. The most usual class of negative which requires Vigorous Selo Paper is that which is thin all over, and has no dense shadows. When a negative of this kind is placed on a sheet of printed paper, the type can be read easily, even through the densest parts. Most other negatives should be printed on the Normal or Soft varieties, as otherwise the results will be too contrasty, and lack the delicacy which is characteristic of perfect. Solo Paper prints.

Print all the negatives in one batch first. This will simplify the estimation of exposure and avoid the necessity of having three packets of paper open at the same time.

Open the packets of paper, and having removed the outer envelope, place the paper in the drawer or light-tight box.

Place the negative in the printing frame, dull side

(emulsion surface) uppermost. If film negatives are being printed see that both sides of the glass support are quite clean. If plate negatives are being printed, clean the glass sides thoroughly. The emulsion side of the negative, i.e., the dull side, goes next to the emulsion side of the paper.



Take a sheet of paper from the package, close the drawer or box, and place the paper in the printing frame with the sensitive side in contact with the negative. With glossy or satin surfaced paper the sensitive side can be seen at a glance, the emulsion surface of matt paper can be detected by the slight tendency of the paper to curl with this surface innermost. If you are in doubt moisten your front teeth with your tongue and bite the corner of the paper—the emulsion side will stick to your teeth.

MASKING

Prints with white edges have a pleasant appearance, and are frequently preferred to those trimmed flush. To secure a clean, white edge a mask is necessary; this may be cut out of black paper, but it is generally preferable to purchase from a photographic dealer either a packet of assorted black paper masks, or a ruby celluloid mask of the size required. When loading the printing frame, place the mask between the negative and the printing paper.

In printing from film negatives a printing frame larger than the negative is frequently used, and in this case it will be found convenient to place the mask in front of the negative, fixing it to the glass of the printing frame with small strips of gummed paper.

EXPOSING

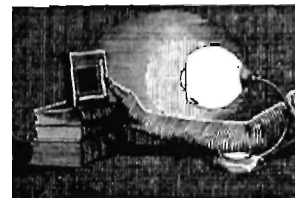
Avoid haphazard methods of exposure. Complete success in printing depends largely upon accuracy of exposure, and this can be secured only by systematic working. Exposure depends upon three factors: the light used, the distance between the light and the printing frame, and the density of the negative. Keep the first two factors constant. Use always the same illuminant and take care that the printing frame is placed at exactly the same distance from it. Remember, if you double the distance you need four times the exposure; halve the distance, and you need only one-quarter the exposure. A small variation in distance makes a big difference in exposure.

Selo paper *should not be exposed by daylight*, exposure has then to be too short to be controllable.

• Accurate exposure, in the first place, can be achieved only by experiment. The following figures for a negative of normal density and contrast printed on Normal Selo Paper will, however, serve as a guide.

Light.	Distance.	Exposure
	Inches.	Seconds.
Incandescent Gas	12	5
Electric Light, 40-watt Pearl (gas-filled)	12	5
Duplex Paraffin	6	30
High Pressure Spirit Lamp ..	18	12

One or two tests on strips of paper will be sufficient to show what modification of these exposures is necessary, and if the exposure is marked on the corner of each negative as it is printed, you should have no difficulty in estimating reasonably accurately, by comparison, the exposure required for any new negative.



DEVELOPING AND FIXING SOLUTIONS

The recommended developer for Selo Paper is Selo Gaslight Developer, sold in powder-packet form. The contents of one packet are dissolved in 4 ozs. of water (110 c.cms.) to make a working solution.



To those photographers who prefer to make up their own developer the following is recommended :—

<i>Metol-Hydroquinone Developer</i>		I.D.29.
Metol	15 grains	0.75 grammes
Sodium Sulphite (Crystals)	1 ounce	25.0 ..
Hydroquinone ..	60 grains	3.0 ..
Sodium Carbonate (Cryst.)	1½ ounces	40.0 ..
Potassium Bromide ..	6 grains	0.3 ..
(or 10% Solution) ..	1 dram	3 c.cm.
Water up to	20 ounces,	500 ..

If the whites of the prints appear grey or foggy a little more bromide should be added. Excess of bromide, however, tends to produce a brownish or greenish image instead of pure black.

FIXING BATH.

Although a plain hypo bath may be used for fixing Selo Prints, an acid fixing bath is to be preferred as it stops development at once, and gives cleaner, brighter prints, particularly if the water supply is hard. Ilford Acid Fixing Salts, ready for dissolving in water, may be obtained from photographic dealers in ¼lb., ½ lb., 2½lb., and 5lb. tins. The fixing bath is prepared by dissolving 2 ounces of the salts in 16 ounces of water. An acid-fixing bath can also be prepared in accordance with the following formula :—

Hypo	4 ounces	100 grammes
Potassium Metabisulphite	ounce	or 12.5 ..
Water	20 ounces	500 c.cm.

DEVELOPMENT

The temperature of the developer should be 65° Fahr. and it is *very important* that this should be maintained.

The print should be *slid* evenly and swiftly into the developer—sensitive side up—not just *dropped* in.

Correct exposure is essential for the greatest possible success in printing, and the behaviour of the print in the developer is a sure index to the accuracy, or otherwise, of exposure. The image should appear shortly after the print is placed in the developer (within 5 seconds), and then build up steadily until development is complete in about 30 seconds at 65° F. With a properly exposed print development will then have reached finality and will cease automatically. The print should, however, not be allowed to remain in the solution longer than necessary, otherwise stains may result.

If the image flashes up instantly and darkens rapidly so that development occupies less than the normal 30 seconds it is best to make another print and give less exposure. If the image appears slowly and the print is still under-developed at the end of the 30 seconds, the exposure should be increased.

It cannot be too strongly emphasised that development time and temperature must be constant and that only exposure time should be altered. Any shortening of development time is likely to result in a print of unpleasing brown-black colour. Prolonged development, on the other hand, is liable to cause stains to appear on the print. Clean, bright prints with sparkling whites and rich velvety blacks are the reward of accuracy in exposure and development.



FIXING, WASHING AND DRYING



The developed print should be rinsed in water for a second or two and then transferred to the fixing bath. It is important, in order to prevent stains, that it be kept moving for the first few seconds; it is not

sufficient merely to drop the print into the solution and leave it to take care of itself. The prints should also be moved about at short intervals during the process of fixing to ensure the solution reaching every portion of every print.

Prints should be wholly immersed in the fixing solution, parts floating upon the surface of the bath will be incompletely fixed and may also become stained as a result of oxidation of the chemicals. For these reasons it is desirable to use a deep fixing bath and to insert prints face downwards.

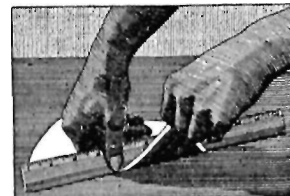
Each print should be allowed to remain in the fixing bath for at least 10 minutes, and the bath should be of the strength recommended on page 10. Complete fixation, combined with thorough washing, is the surest guarantee of performance.

Washing should be as thorough as the other processes and this should occupy at least 45 minutes. If it can be arranged for the washing dish to be placed directly underneath a tap and the water allowed to run into the dish continually so that it is kept fresh and clean, washing will be greatly facilitated. Take care to prevent the water striking the prints, otherwise, especially in warm weather, blisters may result.

The prints may be dried by clipping them on to a line or by laying them face upwards on clean blotting-paper. It is desirable to mop surplus moisture from the surface of prints with a swab of damp cotton wool in order to avoid "drying marks." Prints should be dried in a dust-free atmosphere.

FLATTENING THE PRINT

The print when dry may be more or less curled, but it can be straightened by drawing the back of it several times firmly over the straight edge of a table or by laying it face downwards on a smooth flat surface and drawing a straight edge along the back from end to end or corner to corner, lifting the end or corner fairly sharply but steadily as the straight edge is drawn back.

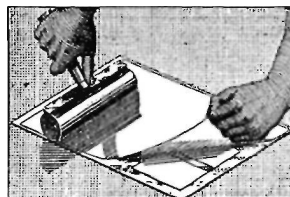


GLAZING

Prints with a glossy surface may be glazed or enamelled by drying them in contact with glass, ferrotype, chromium-plate or other hard, smooth surface. The glazing surface must be thoroughly cleaned, and may then be prepared in various ways. Glass may be polished with French chalk and the excess of chalk removed by a brush or soft cloth; or it may be treated with a thin solution of paraffin wax and then very lightly polished to remove all but a very thin skin of the wax; chromium sheet or ferrotype generally needs only cleaning. Another method is to flood the glazing surface with a preparation of ox-gall (Glazing Solution)

which prevents the prints from sticking; such materials are supplied by most photographic dealers.

The wet prints are placed face downwards on the prepared surface. A sheet of waterproof cloth is then



laid over the prints and pressure is applied with a squeegee to ensure perfect contact and freedom from air bells. The waterproof cloth is then removed and the prints are placed in a current of air until perfectly dry, when a penknife is passed under one corner of each print, and it is stripped from the glass or ferrotype.

FAULTS WHICH MAY OCCUR IN PRINT-MAKING

If the foregoing instructions are followed, little trouble is likely to be met. The following notes will, however, assist in tracing possible faults :—

Stains. Usually caused by use of exhausted developer, or by not moving prints when first placed in the fixing bath. May also be caused by contamination by hypo from the finger-tips.

White spots. Dust on negatives during printing or air-bells on the print during development.

Greenish- or brownish-blacks. Too much bromide in developer or exhausted developer.

Blue-blacks and greyness of whites. Too little bromide in developer, prolonged development, or unsafe light during handling or development.

Yellowish-whites. Exhausted developer or prolonged development.

Black lines and markings. Known as stress marks, and due to pressure on the gelatine film. To remove, rub the dry print with alcohol or with ammonia 1 part, water 100 parts. If ammonia be used wash the prints afterwards with water. All Ilford Papers are, however, treated specially to prevent these markings as far as possible.

Deposits on dry prints. When caused by the use of hard tap water, deposits can be removed by wiping the surface of the print when wet. A deposit of white powder or crystals may be caused by insufficient washing after fixing.

Fading or tarnishing. Caused by incomplete removal of unused silver salts by the fixing bath, or by insufficient washing.

IT'S EVEN GREATER FUN . . .

. . . to enlarge your best negatives on Ilford Bromide Paper. There's a thrill in discovering all the hidden beauty of detail in the negative which is not apparent until an enlargement is made.

Ilford Bromide, by reason of its ease of manipulation, clean working, and long scale of gradation, adds much to the fun of enlarging.

Make your enlargements on one of the many attractive surfaces of Ilford Bromide and discover one of the greater thrills of photography.

Full information and instructions are contained in the booklet "Ilford Bromide Papers " available free on request.

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