



Black & white photography has stood the test of time. Despite the advance from mono to colour film, and then from emulsion to digital, black & white photography remains popular with photographers around the world. Its ability to produce evocative and powerful images remains as strong today as it has ever been. Welcome to the world of monochrome! PHOTO: PATRICK EDEN

Beginner's guide to Black & white

At a time when colour film technology is at its peak, and the world we live in is more colourful than ever before, the idea of taking pictures in black & white may seem a little strange.

Recently, however, mono has experienced something of a renaissance. Not only is it widely used for advertising and fashion, but more and more enthusiast photographers are also enjoying the benefits of shooting in black & white. The main attraction of working in mono is that by stripping colour from an image, you divorce it from reality so photographs become a more effective means of self-expression. Instead of relying on realism and familiarity, they become abstracts using patterns, textures and the play of light and shade to gain appeal.

Photographs take on a different meaning, and we can see into much more with the distraction of colour taken away. This applies to all subjects, be it portraits, landscape, still-life or architecture.

An additional benefit is that black & white is a complete cycle. Your involvement with colour photography usually ends the moment a roll of exposed film is removed from your camera. But in black & white, the creative process is only just beginning at that point, because after developing the film you then get to work in the darkroom, printing the photograph according to how you visualised it as the time.

This guide covers various topics, from learning to see in black & white, choosing, using and processing film and making your first print.

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LEARNING TO SEE IN BLACK & WHITE

The biggest hurdle to overcome when shooting black & white for the first time is understanding how a colour scene will translate to black, white and the numerous grey tones in-between.

A good way to learn initially is by shooting the same scenes or subjects in black & white and colour, so you can compare the two images and note how certain colours record as grey tones.

Ideally, set up a shot or look for a scene that contains a wide range of different colours - reds, yellows, oranges, greens and blues. What you learn will prove invaluable in the future as it will help you visualise if a scene will work well in black & white, and also what you may need to do at both the taking stage and the printing stage to ensure a successful image is produced.

For example, if you photograph red and green objects together, their relative difference in colour creates a contrast that makes each item stand out clearly. In mono, however, red and green records as similar grey tones so that contrast is reduced, and the impact of the photograph with it. When photographing landscapes, you need to consider the way the sky will record when you expose for the ground, and how the many different shades of green in the scene will translate. With still-lives, you need to pre-visualise how different objects will relate to each other when converted to grey tones.

Self-expression

Of course, while this practical knowledge will be of use, you shouldn't live and die by it. One of the great joys of black & white photography is that it allows you to express your own creative vision far more than colour can, so detailed technical accuracy may be far less important to you than the overall mood and feel of the image.

Also, while what you capture on the original negative is important, 99 per cent of the time it's what you do with the image in the darkroom that counts, because it's in the printing that a black & white photo really comes to life. You can use different contrast grades of paper to control the way highlights, shadows and mid-tones relate to each other, for instance. You can lighten or darken selective areas of the print to change its tonal balance. You can also crop the image to alter the composition, tone it and so on.



This comparison set provides a good indication of how a black & white film will interpret colour scenes. SRB (phone 01582 572471) produce an accessory called a monovue which costs £16. When held to the eye, it shows the world in black & white and is a handy aid. PHOTOS: LEE FROST



Black & white film converts colours to various shades of grey. When shooting subjects which are made up of various hues of the same colour, such as green plants, use a film with good contrast, or print to a hard grade, to emphasise the change in tones. PHOTO: COLIN DIXON



Using filters

Colour filters can be used to control the way different colours record as grey tones and therefore alter the tonal relationship in a scene to a small or large extent.

The main colours used to achieve this are yellow, green, orange and red. Each will cause its own colour to record as a lighter grey tone in black & white and its complementary colour to record as a darker grey tone. So, red will lighten red and darken green while green will lighten green but darken red.

Yellow is the best choice for everyday use, as it slightly darkens blue sky and emphasises clouds. Orange does this more obviously, as well as darkening greens to give a marked increase in contrast. Red turns blue sky almost black so white clouds stand out starkly and the sky takes on greater prominence, rather like it does in colour when you use a polarising filter (which can also be used for black & white photography). A red filter also darkens green considerably to produce dark, dramatic effects.

Green is popular with landscape photographers as it helps to emphasise the different shades of green in the scene (see Beginner's guide to Filters - pull-out guide no.4). PHOTO: LEE FROST

WHICH FILM FOR BLACK & WHITE?

The choice of black & white film is wider now than ever before. In practice, however, there isn't a massive difference between one brand or another, so unless you want to get very technical the main decision you need to make is which speed to use.

As with colour, the slower the film is, generally, the finer the grain and the greater the resolving power, so having decided what you want the film for, you can then choose a suitable speed.



Slow films

If you require the best image quality, and intend making big enlargements, choose a slow speed film such as Agfa Agfapan APX 25 (ISO 25), Kodak Technical Pan (ISO 32) or Ilford Pan F Plus (ISO 50). All three produce incredibly sharp negatives with amazing detail and almost invisible grain. The downside is you will need to use a tripod in all but the brightest conditions.

Medium-speed films

Films in the ISO 100-125 range are a good choice if you require high image quality without compromising speed too much. Ilford's Delta 100 and FP4 Plus, Kodak T-Max 100 and Agfa Agfapan APX 100, among others, all provide fine grain and sharpness, and at enlargements up to 16x12in will produce excellent image quality, while still allowing you to take handheld pictures.

Fast films

Today's crops of ISO 400 films are capable of amazing quality, making them the most popular speed for general use. The more modern films have the edge - Ilford Delta 400 and HP5 Plus, Kodak T-Max 400 and Agfa Agfapan APX 400. The older emulsions such as Kodak Tri-X and Fuji Neopan 400 aren't as fine-grained, but still produce excellent results and are much-loved. On prints up to 10x8in, grain is fine, but any bigger and grain becomes more obvious.

Ultra-fast films

If you need to take handheld pictures in low-light, then an ultra-fast film will be more suitable. There are three to choose from - Fuji Neopan 1600, Kodak T-Max 3200 and Ilford Delta 3200, with speeds of ISO 1600 and ISO 3200. Although these films offer high quality, they are very grainy. Many photographers see this as a creative benefit, however, and use these films specifically for their coarse grain.

Q&A

■ I'd like to experiment with black & white film but don't have a darkroom. What are my options?

■ The first is to use Agfa Scala, which is an ISO 200 black & white slide film. It produces attractive results, but at £10+ per roll it isn't cheap, and you can't print the images onto normal black & white printing paper.

The second is to use Kodak Black & White + or Ilford XP2 Plus. Both are ISO 400 black & white negative films that are C-41 compatible, so they can be processed and printed by your local colour lab. The only snag is that many labs print on colour paper, so the prints suffer from a colour cast - anything from sepia or blue to green. Avoid this by asking for black & white prints.

The benefit is you can print make enlargements from the negatives if you do set up a darkroom.

Black & white film is far better than colour at producing evocative images. In shots like these, where highlight and shadow detail are equally important, it's essential to ensure the original exposure is correct, and the printing is also spot-on.

PHOTO: NEIL MILLER



Mono infrared

If you're looking for something different, give infrared film a try. Being sensitive to infrared as well as visible light, it records the world in a weird and wonderful way - blue sky and water go black, while foliage and skin tones record as ghostly white tones.

Kodak High Speed Mono Infrared is the most sensitive IR film, so it gives the strongest effect, while Konica 750 and Ilford SFX 200 aren't so sensitive.

Kodak's infrared film must be loaded and unloaded in complete darkness to avoid fogging (use a changing bag on location), while Ilford's and Konica's can be handled in dim conditions.

To get the infrared effect, use a red filter. If you meter with the filter in place, set the following film speeds on your camera - ISO 400 for the Kodak film, ISO 200 for Ilford SFX and ISO 50 for Konica 750.

Bracket exposures a stop or two over the metered exposure and print to a hard contrast grade - IV or V - for powerful images with glowing highlights and deep shadows. PHOTO: KATHLEEN HARCOM



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BLACK & WHITE TECHNIQUE

Learning to visualise how colours translate to grey tones is the first step in honing your black & white technique, because it will help you to understand what the final image may look like when printed - and guide you towards making certain decisions to influence that final image.

However, there are other factors to consider when taking pictures in black & white.

Metering and exposure

Perhaps the most important is how you expose a black & white photograph, because that will govern how much detail is recorded in the negative and, consequently, how easy that negative is to print.

The old adage is that when shooting in colour, expose for the highlights, and when shooting in black & white, expose for the shadows. This is not a bad technique to adopt, but unless you understand how camera meters work, it's likely to cause more harm than good.

A much simpler approach in normal lighting conditions is to expose for a mid-tone, then let everything else fall into place around it. This should produce a negative that contains a full range of detail and tone from white through to black, which you can print on a normal grade of paper - grade 2.

Most modern camera meters will naturally set a mid-tone exposure in average lighting, as that is what they are designed to do, so you could simply go along with what your camera sets. The other option is to take a spot reading from a specific part of the scene that represents a mid-tone. To visualise this, think of something that has the same density as a mid-grey colour - well-lit green grass, red brick and tarmac are common examples. Alternatively, hold an 18 per cent grey card, which is a perfect mid-tone, in the same light as that falling on your subject, and meter from it.

Where the lighting isn't 'average' you need to make a decision about how you wish to interpret the scene and expose accordingly.

For example, if you photograph a tree against bright sky, you need to decide if the mid-tones and shadow areas are more important, or the highlights. If you expose for a mid-tone, the bright sky will be overexposed, and on a normal print this would produce a high-key backlit effect. However, if you expose for the sky, the mid-tones and shadows will be underexposed, and on a straight print the tree would come out as a silhouette or near-silhouette.

If in doubt in situations like this, you can always make a series of exposures then decide later which interpretation you prefer and choose the best negative for printing. You also have a large degree of creative licence in the darkroom, so if you change your mind it's usually possible to achieve the effect you want by using different contrast grades of paper, varying the print exposure and giving more or less exposure to certain parts of the image.



Black & film is a popular choice of medium for portraiture and also for fashion work. It's recommended that you use a slow or medium-speed film to ensure the best possible sharpness and also ensure that grain is not evident on your subject's skin. PHOTO: ROD EDWARDS

Composition

Although you can change the composition of a black & white photograph by cropping it during printing, don't let this fact lull you into a false sense of security, as it leads to sloppy technique.

Instead, aim to compose each picture in-camera exactly as you want it to be printed. Think carefully about the way the lines, shapes, patterns and textures are arranged, so they relate expressively to one another. Some photographers, including the more arty types, even print their black & white pictures with the film rebate showing - evidence that the image hasn't been cropped.

You needn't go to such measures (although the technique can look very effective) and there's nothing wrong with cropping an image if it improves the end result, but being disciplined about composition when you take the picture in the first place will not only produce better

compositions, it will also make you a more considered photographer overall.

Make the most of light

Light has different meaning in black & white photography compared to colour. When you take a colour photograph, the light can actually have a colour of its own - warm, as at sunrise and sunset, or cold as on a cloudy or foggy day. Colour film records these variations in the colour of light even if the eye can't see them. Similarly, colour film records artificial lighting in a literal way, so tungsten light produces an orange cast and fluorescent a green cast.

Black & white film is clearly incapable of doing this, which can have both positive and negative effects on your photography.

From a positive point of view, there is no colour to influence the mood of your pictures, so you can shoot portraits or candid indoors in



The total absence of colour is the secret to the success of this image, which works thanks to the patterns and texture of the water and the posts. PHOTO: PEARL BUCKNALL



Using a fast film and printing on a hard grade of paper can produce black & white pictures with plenty of atmosphere and impact. Don't be afraid to use ISO 1600 or ISO 3200 films in bright daylight as the gritty results are perfect for this type of image. PHOTO: TOM RICHARDSON

artificial lighting and produce striking images without worrying about a sickly orange cast spoiling them.

The type of lighting that would normally produce rather drab, boring colour photographs - for example, an outdoor scene on a dreary overcast day - can produce wonderfully evocative black & white photographs, enabling you to exploit conditions that would leave colour photographers heading for home.

The downside is that you have to work harder with light when shooting mono, because the colour of the light cannot contribute to the mood of the final picture - a black & white sunset shot simply cannot compete with one shot in colour, because without the golden glow much of its emotional appeal will be lost.

Fortunately, this factor can also work in your favour, because in using light to define shape, texture, pattern and form - the elements on

which black & white photographs rely - your eye for a picture can only get better.

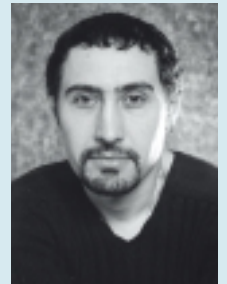
The power of black & white

One factor you must never overlook is the sheer emotive power of black & white. By removing the colour from an image, it becomes far easier to convey a message and allow the viewer to get straight to the point of what you are trying to say. As Ansel Adams, possibly the world's greatest black & white photographer and printer once said - "Forget what it looks like. How does it feel?"

This can work on many levels and with different subjects, from landscapes to abstracts, but black & white is never more powerful than when it is used to depict people, whether in a posed, formal situation or one of conflict and bloodshed - which is why black & white is the chosen medium of so many photo journalists.

EXPERT VIEW UMIT ULGEN

Black & white photography is very much like painting. It takes time, patience, careful planning, sketching and most importantly 'the vision'. When I look at a particular scene, I always imagine it as a final print in my hand, in



the way I want it to look, which is usually completely different to what it actually looks like in reality.

Visualising the final image helps a lot at the printing stage, as I expose my negatives according to how I want the print to look.

I mainly shoot on overcast days when the light is much softer and even. In these conditions, it's possible to take black & white photographs with an incredibly smooth and soft feel.

I like my landscapes very dark and moody. Dark sky, dark foliage, and I always try to include a patch of light peeking through the clouds or include reflective water somewhere in the composition. Sometimes it's not always possible to catch that light, but that's where a little cheating in the darkroom comes in handy.

There are times I spend 8-10 hours in the darkroom to get one decent print. In the early days, I'd waste a whole box of paper, but now if it's not working, I pack everything in and go down the pub, then try again the next day!



Beginner's guide to Black & white

DEVELOPING YOUR FIRST FILM

Having exposed your first rolls of black & white film, the next step is to develop it to produce negatives from which you can make prints. This is actually very easy, providing you follow a set procedure and think about what you're doing.

YOU WILL NEED:

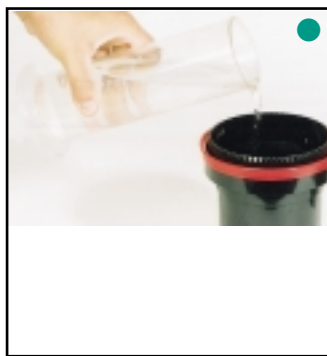
- Development tank and spirals
- Film developer, stopbath and fixer
- Wetting agent
- Measuring graduates and jugs
- Thermometer
- Film clips (or plastic clothes pegs)
- Film squeegee
- Scissors

LOADING THE FILM ONTO THE DEVELOPMENT TANK

If your camera rewinds the film completely into the cassette, it's worth investing in a film leader retriever so you can pull the leader back out. When you have done that, follow these steps:



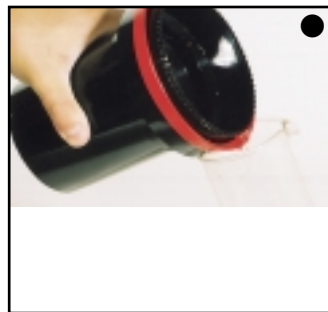
1 Cut the end of the leader with scissors into a curve.



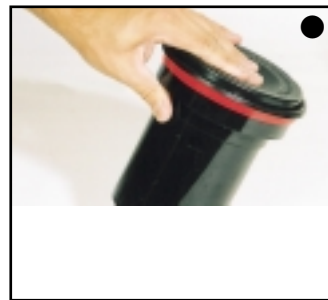
2 Feed the end of the film leader into the grooves of the spiral until it's past the ball-bearing.



3 In complete darkness, draw the film cassette down so film is pulled from it, then rack the sides of the spiral back and forth so the film is carried into the grooves.



4 When the film has been fully loaded - still in complete darkness - cut off the cassette using scissors.



5 Place the spiral in the tank, lock the top section in place, press the lid down, then pop the lights back on.

You can now carry out the processing in daylight, as the development tank is lightproof. The next step is to mix your three chemicals according to the manufacturer's instructions. You need to get the developer to exactly 20°C (the stopbath and fixer can be one or two °C out). The three diluted chemicals should be placed in jugs or large graduates, each marked with waterproof pen - DEV, STOP, FIX - so you don't get confused. Always use the same vessels for the same chemicals.

- LIGHTS OFF
- LIGHTS ON
- SAFELIGHT ON

HERE'S WHAT TO DO NEXT:



1 Set the development time on your timer - five minutes, ten minutes or whatever it says on the developer instructions for the film you are using.



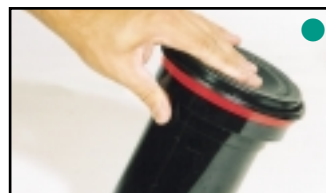
2 Press the start button on the timer, then pour the developer into the tank. Once it is all in, press the lid of the tank back on, tap the base of the tank on a hard surface to remove air bubbles from the surface of the film, then invert the tank two or three times.



3 Agitate the tank at regular intervals by inverting it. You may need to agitate for ten seconds in every 30 or 60 seconds, for example. Three inversions should take around ten seconds.



4 Ten seconds before the development time ends, pour the developer out of the tank back into its jug, then pour in the stopbath. This acidic chemical halts the development process.



5 Invert the tank for a minute or so, then pour the stopbath back into its vessel and pour in the fixer. Once the lid of the tank is secure, tap its base to dislodge bubbles, then invert the tank two or three times. Repeat this inversion every minute. Fix according to the manufacturer's instructions.



6 Pour the fixer back into its vessel, then fill the tank with fresh water. Invert the tank, empty it, fill with fresh water again, invert and empty. Wash the film continuously with fresh water for ten minutes or so.



7 Empty the tank, pop a couple of drops of wetting agent in, then fill again with water. Wetting agent is a mild detergent that helps water slide off the surface of the film so that it dries cleanly and evenly.



8 Remove the spiral from the film tank, then carefully remove the film from the spiral.



9 Remove excess water from the film using one firm sweep of the film squeegee, then hang it up overnight to dry. Choose a clean, dust-free location for this - a shower cubicle is ideal.



10 Once the film has dried, cut it into strips of six negatives and place them in storage sheets.

If you exposed the film with reasonable accuracy when it was in your camera, then developed it correctly, you should end up with a set of negatives that will print very easily.

MAKING YOUR FIRST PRINT

With your first film successfully developed, the most exciting part of black & white photography comes next - making your first print. This is an incredibly rewarding experience, yet the procedure is relatively simple. It's unlikely that you produce a perfect result on your first attempt, but be patient and prepared to practise, you'll soon get there.

YOU WILL NEED:

- An enlarger and lens ● Printing paper ● Masking frame
- Three developing dishes ● Print developer, stopbath and fixer
- Safelight ● Timer or clock ● Focus finder ● Print tongs ● Scissors, anti-static brush, canned air ● Measuring graduates and jugs

The enlarger and lens allow you onto a sheet of printing paper, with the enlarger's baseboard in a mask. With, use a variable contrast (VC) Multigrade. With VC paper you can choose a contrast grade using the filters in the colour filter head or, if your enlarger has a colour head, by placing filters in the



Resin-coated paper has a plastic base which means it washes and dries very quickly and also dries perfectly flat. This makes it easier to use for beginners, though serious printers tend to use fibre-based paper as it records a wider tonal range and gives better depth of tone.

You will need a room that you can black out, such as a spare bedroom or the bathroom. Running water is handy but not essential. Buy sheets of blackout material from Jessop. A safelight will provide a dim light so you can see what you are doing but won't fog the printing paper.

MAKING A CONTACT SHEET

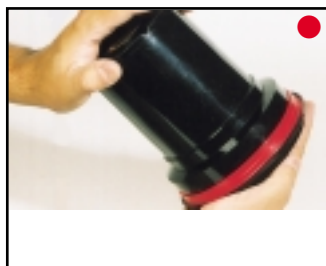
After mixing your chemicals according to the instructions, and pouring each into a dish, the first step is to contact print your negatives so you can assess them and decide which to enlarge. Here's how to do this:



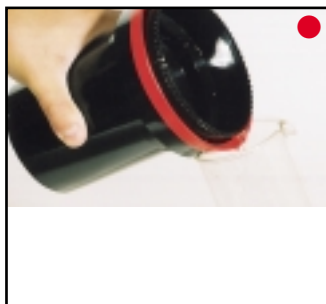
1 Set your enlarger head to a suitable height so it illuminates an area on the baseboard of at least 12x10in.



2 Under safelight conditions, lay a 10x8in sheet of printing paper on the baseboard, carefully lay the strips of negatives side-by-side on the paper, then place a sheet of clean glass on top so the negatives are pressed flat against the printing paper.



3 Set the enlarger lens to f/8, cover two-thirds of the paper with some card, then expose the uncovered area for five seconds.



4 Uncover another third of the contact sheet, expose for a further five seconds, then uncover all of it and expose for five seconds. Remove the glass and negatives from the printing paper, then develop and fix it.

MAKING AN EXPOSURE TEST STRIP

After washing and drying the contact print, you can decide which negative to enlarge first.

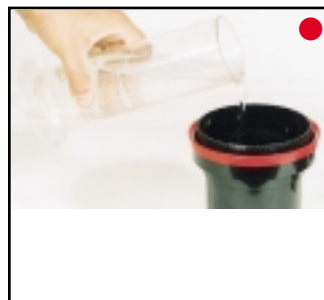
This negative is placed in the enlarger and the head is adjusted until the image on the baseboard is the right size and sharply focused.

A focus finder will help you achieve critical sharpness by magnifying a tiny part of the projected image, so you can focus the actual grain structure. Set the enlarger lens aperture to f/8 or f/11.

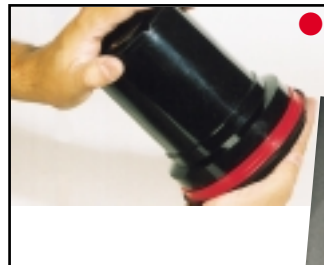
Once everything is set up, you need to determine how long the print must be exposed for by making an exposure test strip...



1 Under safelight conditions, remove a sheet of printing paper from its packet and cut it into thirds along the length.



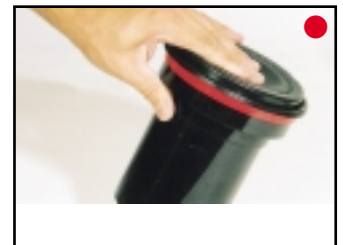
2 Put two strips back in the packet and lay the remaining strip on the masking frame across an important part of the image.



3 Hold a sheet of card an inch or two above the masking frame so it covers most of the strip of printing paper, then turn on the enlarger and expose for two seconds.



4 Uncover a little more of the test strip and expose for another two seconds. Repeat this until you have a test strip that has been exposed in stages for two, four, six, eight, ten, and 12 seconds.



5 Develop, fix and wash the test strip (see next page for instructions) then turn the darkroom light on and assess it to see which exposure you need to use for the final print.

Some photographers prefer to expose an entire sheet of paper and produce a test sheet, rather than a test strip. This is fine for relatively small print sizes, but will prove costly in terms of wasted paper if you are making large prints such as 16x12in.



This test sheet clearly illustrates the series of different exposures times the paper has received, in order to establish the correct printing exposure.

Make diagonal test strips as these are less likely to be made up completely of shadows or highlights.

Turn over to learn about the last stage - Making the final print

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MAKING THE FINAL PRINT

After re-checking that the negative is clean, still sharply focused and the masking frame is in correct position on the baseboard, you can go ahead and make the final print, using the exposure time determined from your test strip.

To do this, set the required exposure on your enlarger timer, switch off the room lights, then under safelight conditions remove a sheet of printing paper from its box, carefully place it in the masking frame and make the exposure.

Once exposed, quickly remove the print from the masking frame and begin processing it.



1 Gently slide the print into the developer, then rock the developing dish so the whole print surface is covered. Continue gently rocking the dish throughout the development time - usually 1 to 1½ minutes at 20°C.



2 Ten seconds before the development time is up, lift the print by one corner so much of the excess liquid drains back into the dish, then slide the print into the stop bath and rock gently for 1 min.



3 Lift and drain the print again, then slide it into the fixer for a further two minutes or so. Once fully fixed you can turn on the room lights to check the print, before washing and drying.

Wash resin-coated prints under running water for five minutes or so (fibre-based paper needs at least 40 minutes), then drain excess water and either peg the prints on a line to dry, or lay them on a flat surface covered in old newspapers.

Resin-coated prints will be dry within an hour or two, but fibre-based paper should be left overnight. It will also curl at the corners so you will need to flatten it under books.

Q&A

■ **Whenever I make a print, some areas come out lighter or darker than I want them. How do I overcome this?**

You need to vary the amount of printing exposure different parts of the print receive. You need to selectively expose those areas that are too dark for less time if you wish to lighten them and expose the areas that are too light to a longer printing exposure time to make them darker. These techniques are known as dodging (reducing the exposure time) and burning-in (increasing the printing exposure). For example, with landscapes, the sky usually comes out too light, so it's burned-in by giving it more exposure.

■ **What do I need to do this?**

■ To dodge small areas you use pieces of card cut into different shapes - circles, squares, stars, sausages - and sizes which are taped to lengths of fine wire 25cm long or so. To dodge larger areas you can use your hands or bigger pieces of card.

To burn-in areas use sheets of card with holes cut in different positions and different sizes, or, when burning in the sky, use a plain sheet of card.

Keep your dodging or burning-in tool moving during the exposure so there's no hard edge visible.

■ **My prints have white specks and lines on them. What causes this?**

■ This is caused by dust and hairs on the negative. To avoid this problem, clean your negative before placing it in the enlarger using an anti-static brush and a blast of canned air.

■ **What about getting rid of the marks already on my prints?**

■ Spot them using special inks such as Spotone, and a fine brush (00 and 0 sizes). Dilute the ink with water to the right density, then test on a bit of paper before applying to the print. You may need to build up the density in layers to cover white marks.



You can produce a good print in a matter of hours, but making a first-rate print with the right balance of highlights, mid-tones and shadow detail takes time. But the effort is well worth it, so be patient.

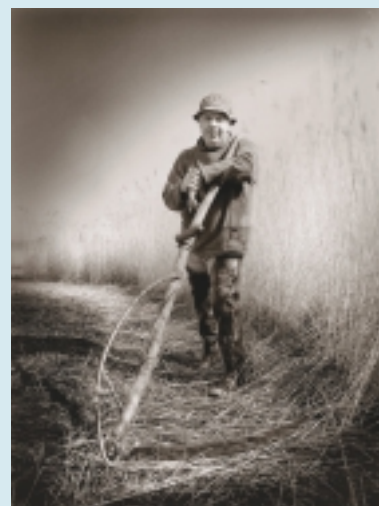
Toning prints

Once you've got to grips with black & white printing, why not experiment with toning some of your favourite prints?

Sepia is the most popular toner. It's a two-bath process where you bleach the print first so the image fades back then, after washing, it's immersed in a toner bath so the image reappears with the characteristic brown colouring. By varying the dilution of the toner bath you can control the depth of tones, from a very subtle warming of the image to a deep chocolate brown.

Blue is another popular colour, adding an effective cool cast to

your prints. Selenium toner doesn't show much of a colouring with some printing papers, but is used to make the print archivally safe so it doesn't fade or discolour over the years. PHOTO: ROD EDWARDS



The digital darkroom

If you don't fancy working with smelly chemicals in a darkened room, why not scan your black & white negatives and manipulate them digitally?

All the techniques you use in a traditional darkroom can also be practised digitally with software packages such as Adobe Photoshop and Paintshop Pro - adjusting contrast, dodging and burning-in, retouching, toning and so on. More complex manipulation can also be achieved such as combining more than one image.

The benefit of doing this with a computer is that you can perfect the image before you print it, so you don't waste loads of printing paper.

The October 2001 issue has an expert's guide to producing mono inkjet prints.