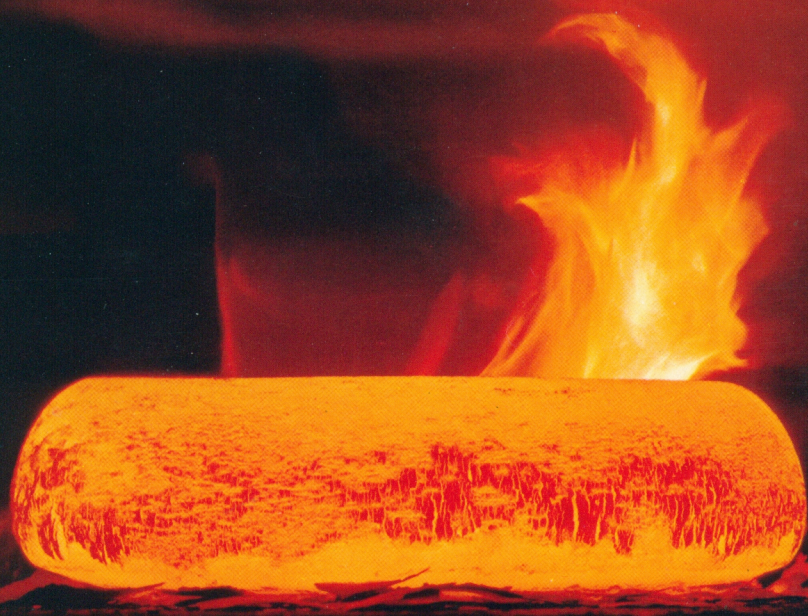


H A S S E L B L A D[®]



INDUSTRIAL
PHOTOGRAPHY

2 • INDUSTRIAL DOCUMENTARY PHOTOGRAPHY

The modern industrial scene, with its intensive production tempo and constant stream of new products, is a natural field for photographic techniques. Because it can produce such exceptionally good results, the camera takes pride of place over other recording media. And now that color film is in widespread use, the possibility of producing absolutely realistic rendition of different subjects is within everyone's reach.

Industrial photography can be largely divided into two main fields of work: documentation of the different phases of the production processes, and the publicity material which a company desires for external information.

It is important that the purposes of these two fields are kept in mind because their objectives are technically and pictorially quite different. Also, the technique and equipment which seem to be most appropriate for the first type of industrial documentary photography may turn out to be quite inadequate or excessive for publicity requirements.

The pictorial needs of an industry, consequently, change from day to day. From the practical viewpoint, this means that the industrial photographer should have a range of equipment sturdy enough to use under different factory conditions. But above all, the equipment should be flexible enough to carry out a variety of photographic functions. The Hasselblad system meets these requirements. The system can handle every aspect of general photography. Versatility is virtually unlimited. The high-quality lenses range from extreme wide angle to extreme telephoto. And the variety of magazines (for different negative sizes and film types), viewfinders and other accessories were practically designed and made to give the industrial photographer the help he needs to carry out his work.

It is often said in photographic circles that every exacting assignment requires its own set of special equipment. By using the Hasselblad system, it is possible to compose a suitable outfit at a moment's notice.

The large 2¼"-square negative format is the standard size, since it meets the needs of most

assignments and is large enough to provide high-quality rendition for practically all reproduction processes.

Design, perspective and color are checked on the focusing screen, one of the great advantages of the single-lens reflex camera. So you're never in doubt when you use the Hasselblad.

DOCUMENTATION

Industrial documentation is a type of photographic work in which service is stressed, and it could possibly be carried out by most technicians or mechanics interested in photography. This is because, apart from photographic and technical knowledge, a good grasp of the organizational and technical problems of the manufacturing plant itself is required.

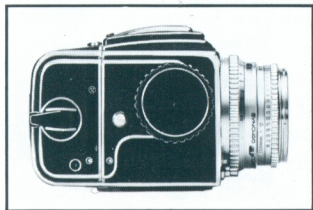
With this in mind, what do we actually mean by documentation? Let us try to explain the word first. A documentary picture depicts the subject realistically. In photographic terms, we mean that the center of interest is recorded with maximum sharpness, contrast is brilliant and that the picture does not suffer from distortion, faulty perspective and confusing details.

The Hasselblad with its accessories makes it easy for a technician to take good documentary pictures, even if he has no photographic training or is pressed for time. The Hasselblad system, apart from its superiority in quality, assures the best photographic results. The wide range of practical accessories can also be combined into an ideal outfit for highly specialized work far beyond traditional photographic limits.

But documentation is not only an exact recording of details in a still photo. Industry is a progressive, dynamic field. Much of the work in industrial photography is to depict activity and movement, such as close-up shots of fabrication steps, methods and speed of work in a production line, etc. So, the Hasselblad system includes a motor-driven camera, the 500EL/M, which can produce practically all the photographic shots wanted from stills



Cover photo: Hans Joachim Janke. Photo above: Jens Karlsson



Dramatic production shots often have a lot of publicity value. So look for drama, tension and excitement in the industrial environment. And make sure your photo gear is capable of mastering the

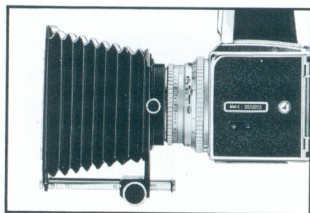
situation. The Hasselblad is! A UV filter in front of the eyes can protect against harmful effects. A UV filter on the lens can protect against e.g. welding sparks.



Photo: Bo Timback

Human figures provide the scale. The astonishing dimensions of a big industry are best described by human standards. The Hasselblad 500C/M with the professional lens shade

helps you to get pictures with a message.



to rapid sequence shots of every desired type. The 500EL/M is designed to free the photographer from having to stand behind his camera, for example, when he wishes to come up "front" to await the important steps in a production process he has to shoot. In other words, this is one way electronics has contributed to photography. The 500EL/M is almost indispensable to the photographer, either professional or technical-expert, who specializes in industrial photography and who has to shoot documentary scenes or production steps continuously.

Rational and sensible photographic work in an industrial company could therefore be undertaken by photographically interested technicians who could work upon the documentation in all its aspects while the more difficult pictorial assignments could be turned over to the professional photographer. A professional often produces the best results if allowed to familiarize himself with the industrial scene and the operations of the plant for a period of time.

INTERESTING PICTURES

Apart from the actual purpose for which the photos are taken, one often sees industrial pictures which are uninteresting. This usually arises when an industry is too concerned about only presenting the facts. As long as the photographs show the facts, then well and good. However, this is a dictum that requires modification, as anyone who has worked with publicity can testify. The demands placed on visual communication today are so great that everyone working with pictures in any way must bear in mind the many factors involved. This means that, from the great flood of information available, we compose the elements available into the message we wish to convey and which is ultimately to arouse the interest of the public. So we will list here some of the points that should be considered in all informative pictures in general, and in industrial pictures in particular, when their obvious function is to impart a message and arouse interest. The picture with

its information must have the power of *arousing interest*. The picture must also be *understandable*, that is to say, the elements in it must be presented in such a way that the viewer need not hunt for its meaning.

The viewer should also derive some *benefit* from the picture. It should provide additional knowledge or other information and, if possible, the chance to serve some special purpose or to give a personal satisfaction of some kind.

The industrial photographer can take advantage of all these requirements to give his pictures special interest. It is not sufficient for an interesting technical detail to be depicted technically correct: it must be tied in with a larger informative theme in order to gain full impact.

Arousing interest

Of the four general points mentioned, we should especially spend some time on the first: that of arousing interest. When doing this, several qualities are involved, qualities which in photography are directly associated with the technical skill of the photographer and his pictorial talent. Industrial documentation is frequently a clear-cut technical job, so we would be wise to examine some important points and, in this connection, give a few useful tips which can help the industrial photographer to achieve the best possible combination of documentation and pictorial understanding.

Accessibility

The first—and general—function of the picture is to convey to the viewer a fairly strong indication of its contents. And this should be done in a way easy to comprehend. This fact is confirmed by all the known forms of media communication. The picture is then made photographically accessible mainly by differentiating details carefully, well-balanced contrast and, naturally, cropping appropriate to the contents. The technically initiated need not be told that this is a question of elementary focusing work and good negative results.

6 • AROUSING INTEREST

People who have not yet engaged in this part of their photographic training should carry out the steps shown in the instruction manual conscientiously. Only after this is done, can one expect to achieve the results which good photographic equipment can offer its owner.

Contrast

Everyone knows that a sign which stands out in contrast from its surroundings is highly visible, provided, of course, that the sign is clear, legible and accessible to the eye. Anything which is definitely higher, brighter or bigger, anything in motion in otherwise static surroundings, or a sudden change in tone or intensity are all effects that attract our attention.

Contrast here is not only a question of photographic contrast, that is to say, whether the picture is darker or lighter, but is primarily a question of controlled lighting, of the correct juxtapositioning of light areas against dark and, finally, of technically satisfactory dark-room work.

In industrial photography, one is frequently expected to make use of available light, at least for the main scenes and views of the larger areas. But in some cases it would be difficult to rely on available light alone, so it would be appropriate here to mention a few words about lighting technique.

If the picture as a document is not to look entirely wrong or misleading, the photographer must first pay attention to strengthening the available illumination with more powerful sources of light. This can be done either by using more powerful bulbs in available fixtures or by using supplementary illumination. Halogen lamps used in movies can be employed to advantage in industrial photography. They are easy to set up in places in which lighting units would be impossible because of the difficulty in finding wiring connections.

Under all circumstances it is important in lighting to concentrate upon the area that has to be defined or the point in the picture which is to be the center of interest. In the parti-

cularly difficult factory picture, it is important that the area behind the center of interest is checked to ensure that contrast is always in balance and that the background does not dominate. This point is partly a question of light adjustment and partly one of perspective, i.e., the camera angle.

In this connection it should be emphasized how important it is for the industrial photographer to be really "flexible" in using his equipment. A portable stepladder is an indispensable aid and the photographer should not hesitate to try and reach the spot where he can get the most realistic and correct rendition of the subject being photographed with the lens chosen.

Intensity

To completely satisfy the technician, the subject of the industrial picture should stand out sharply.

Expressed simply, this means that the photographer must first mentally decide what is the most important part of the picture and what is foreground and what is background. Such decisions will help the photographer to get pictures that look more dramatic.

After that, taking the photos with the Hasselblad is a simple matter, since the basic work is mainly focusing and depth-of-field control. Hasselblad's movable depth-of-field

Photo: Bo Timback

The Hasselblad 500 EL/M with the magazine 70 is perfect for photographically monitoring industrial processes, test equipment, etc. A 70-shot color sequence without a break for reloading and electronically accurate exposure intervals tells a lot.

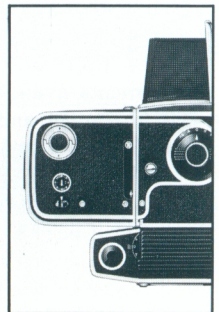
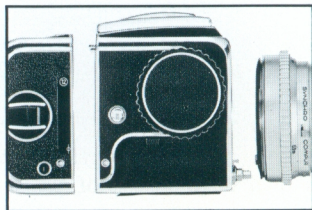






Photo: Jens Karlsson

The Hasselblad has a wide range of lenses and film magazines. With this equipment you can handle subjects at almost any shooting distance.



indicators and exceptionally bright focusing screen leave no doubt as to where the focusing plane lies. Furthermore, with the Hasselblad, by lightly pressing a catch, one can check the extent of the depth of field and determine exactly to what extent the main element dominates the rest of the picture.

But naturally, factors like lighting, composition, the possible isolation of surrounding details and other graphic effects also contribute to enhancing the impact of a picture. They all help to direct attention to what is intended to be the most interesting part of the picture.

Interest

One may say that all technical photographs are successful if they can capture the interest of the technically-minded. But it is possible to stimulate interest occasionally by completely eliminating details of secondary interest, details which can weaken the power of the basic message. This distinction can be achieved by carefully studying the subject, by shifting between close-ups, over-all and long shots and by including the dramatic details.

Identity

Conviction and confidence in the origin of a photo form another important factor in documentation. Apart from the fact that technical photos, when used for general publicity, are more valuable when they contain recognizable features, the inclusion of symbols, trademarks, and the company's name gives the technician a chance to identify an interesting situation and to associate it with its source if the picture happens to become detached from any accompanying text or become separated in some way.

So one should always try to incorporate as far as possible natural identifying details in the photo such as names, numerical data of all kinds, dates, times and other data which help to provide information.

In this connection, it is important to point out that certain information should always be shown on the back of the photo, i.e., copy-

right ownership, origin of the photo and the conditions which apply to its use, as well as its file number and the method of ordering copies.

CHOICE BETWEEN BLACK & WHITE AND COLOR

The traditional attitude among photographers in any discussion on whether to use black & white or color was usually based on the choice of one or the other. In those days, if a photographer on a job decided at the start to use black & white, he had to concentrate on the lighting and technical conditions involved and could not afford to have his attention distracted by the conditions required in color photography. But nowadays the conditions under which pictures are taken and used have changed entirely. So one can say in general that the documentation of an important subject is incomplete unless results are in both color and black & white. The question "black & white or color?" can therefore be answered by "both black & white and color."

The Hasselblad is designed with this in mind. From the beginning and long before the need arose, it was planned that magazines could be changed quickly.

Consequently, the Hasselblad owner has this advantage built-in with his equipment. He does not have to hesitate about what film to use—the interchangeable magazines are loaded with his favorite black & white and color films and ready for parallel use.

After the problem of black & white and color has been considered from these different aspects, the only thing that remains to be done is to describe the possibilities the different types of film have of complementing one another.

DOCUMENTATION IN COLOR

First of all we would like to clarify a few situations in which color can give a photograph a new and important slant. As we stated earlier, a photo contains qualities which qualify it as a document. A color photo can emphasize the documentary aspect, color gra-





Photo: Jens Karlsson

The industrial environment is often full of exciting shots. The wide-angle technique, different perspective and a man in the right place often make up the recipe for pictures that get published.

tions, for example, so subtle that they cannot be observed on the gray scale.

Here are a few practical examples:

The aging process is usually a critical subject in commercial disputes about the condition of materials in connection with claims made after delivery, etc.

Nuances and qualities of colors are frequently studied in research work, and laboratories sometimes artificially speed-up the aging process.

Damage caused to various materials under different circumstances is often made more apparent if photos can show the color gradations which are typical signs of damage. For example, it can be shown through such photos how a bearing box has been subjected to overheating, how acid caused corrosive damage to a product, and so on.

Color photography also has an obvious documentary function in recording the steps in a production process. For example, when the color of material is altered by heat, the expert can decide from a photo the point which the material reached in the production process and establish at what point the fault arose.

During the time the photographer is working with the black & white photo to produce a formal depiction of his subject, he should supplement this work by photographing the details in color.

REPRODUCTION

The deciding factor in a discussion on black & white or color is often determined by how the picture is to be printed or reproduced. The production costs of folders, booklets, newspapers, calendars, and so on, must be considered before the job is started.

If you only need a few dozen copies of a photo, then the reproduction possible with office offset-machines may be good enough. Black & white photos can be reproduced with exceptional fidelity by most known offset methods. However, do not overlook the possibility of supplementing a report with pasted-

in color photos; using the standard Hasselblad format, a very striking effect is obtained at only slightly extra cost.

WIDE RANGE OF MATERIAL

A wide range of negative materials are available. In a previous publication from Hasselblad, "Reproduction", the many possibilities the photographer has of varying his choice of materials were already thoroughly reviewed.

COLOR PRINTS FOR BOOKLETS

It has always been a problem for graphical arts workers to indicate at reasonable cost in a layout the color pictures which are to appear in the final printed matter. Increasing payroll costs in production have made it almost prohibitively expensive to put in too much time on color sketches. The semantic danger should be pointed out, too, that the parties concerned often do not derive the same meaning from rough sketches.

In modern illustration work, this problem is solved by photographing in black & white reversal and negative color, so as to facilitate layout work. The black & white prints are used for sorting and sketch work at the initial stage. Color transparencies are used as originals for platemaking and offset work. And negative color film is used for the color prints to be pasted in the layout or dummy, in natural size; they represent the pictures as they will appear in the final printed matter.

Whenever such problems arise, there is only one good solution—the Hasselblad with interchangeable magazines.

Color photography work which one cannot personally direct is usually done as transparencies. And a problem arises if all or most of the color illustrations in the printed matter are already marked by color prints in the layout. But the Hasselblad system provides the answer. The Hasselblad transparency copy-holder which is used in combination with the bellows extension is intended for reproducing and duplicating transparencies and negatives. By using this accessory, perfect reproductions of transparencies can be made

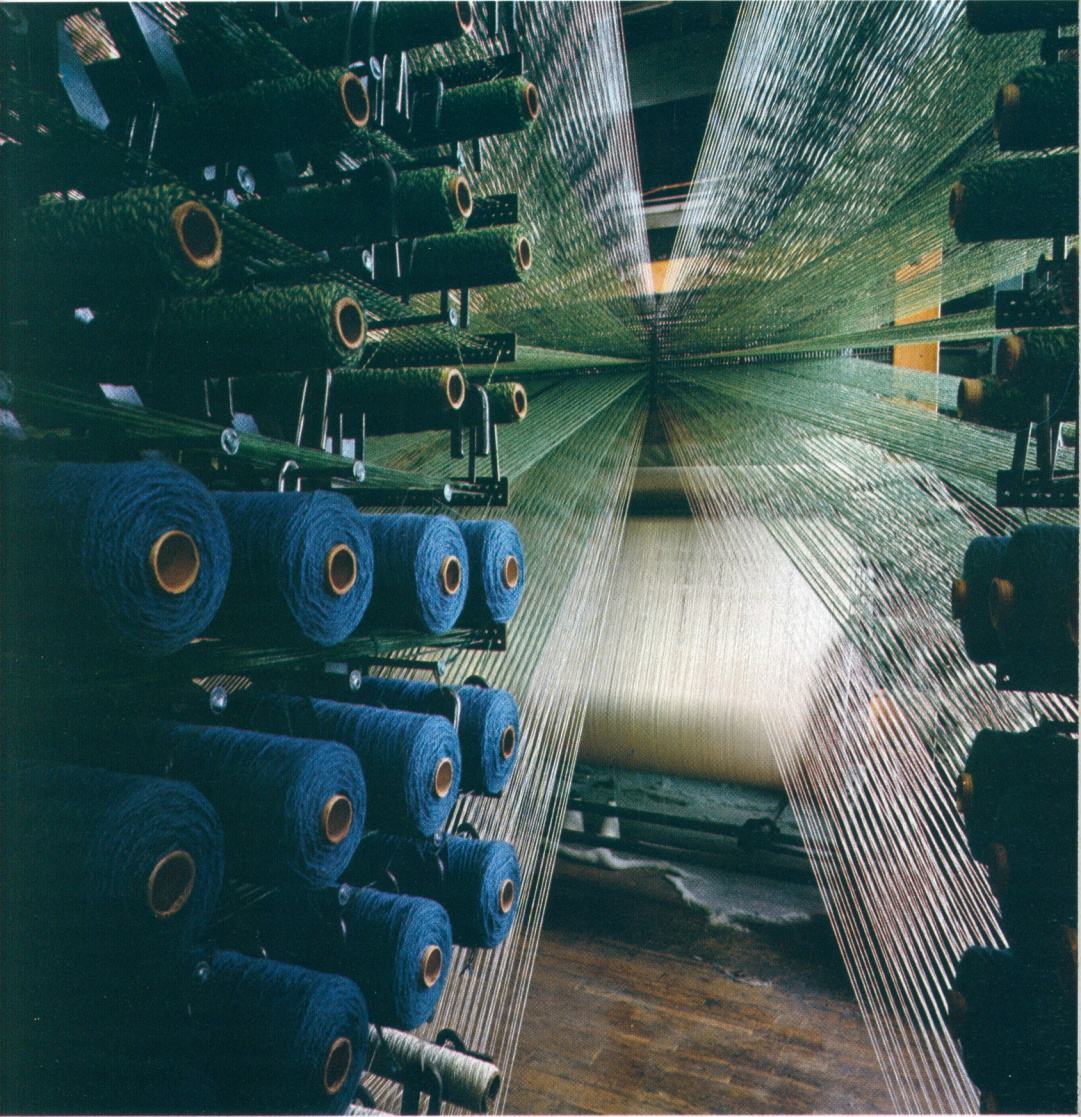


Photo: Bo Timback



The Hasselblad SWC represents one extreme in the Hasselblad lens assortment. The short focal length of the camera's lens provides great depth of field and interesting perspective. The ability to

attach different magazines also makes it possible to use the wide range of film on the market.



on color negatives, from which color prints can then be made in the desired sizes. Recommended lighting: electronic flash. Color temperature can be corrected by using the special light balance filters in the Hasselblad system. For additional information, refer to the booklet "Reproduction".

REQUIREMENTS IN COLOR PHOTOS

We like our black & white photos in documentary work to be correctly focused with proper brilliance and perspective. These elementary requirements also apply to color photos. In addition, and as an unavoidable requirement if color is involved in certain documentary purposes or as evidence, the color must match the original in tone, saturation and clarity. And color can only be correct in one way, namely, when the color balance of the film agrees exactly with the light balance at the moment the photo is taken. It is obvious that mixed lighting sources and reflections, for example from nearby painted surfaces, have to be considered. On the other hand, it can be difficult in indoor work to determine the exact color temperature in relation to the color material used. In outdoor work, these two factors are matched simply just by using a color temperature meter and the well-tested series of Has-

selblad filters based on the Decamired system.

Indoors, it would be wisest to make use of electronic flash or correctly balanced halogen lamps. The instructions provided with these lamps give accurate information on the color temperature at the light source.

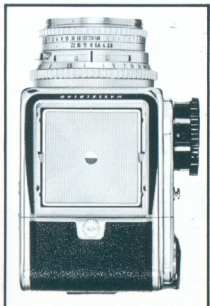
Elementary mistakes because of reciprocity failure should not be permitted. This means, in practice, that when exposing one should keep to the so-called normal shutter speed 1/16 sec. or 1/125 sec., and use about f/8 as much as possible. Of course, the Hasselblad series of famous Carl Zeiss lenses has outstanding correction for chromatic aberration and they do not produce noticeable variations even when used at the largest or smallest apertures. It is a good rule, however, to exercise great care when using sensitive color materials.

CHANGING MAGAZINES FOR MAXIMUM RESULTS

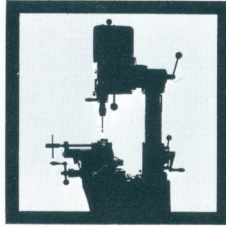
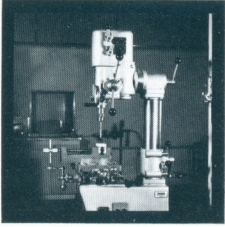
Usually, several persons have to spend time setting up even the modest shot in industrial photography. Though the cost of their time is not directly reflected in the budget or bills, it still represents a value which could otherwise have been used more productively. So it is a great advantage to all if the industrial photographer is able to cover as many parts of his pictorial assignment as possible on the one and same occasion. Remember that the Hasselblad interchangeable magazines enable you to change quickly from one type of film to another and also encourage you to change the picture format. For example, Magazine A16S can be used for color reversal film for superslides used in lectures, demonstrations, critical studies and so forth.

So as a matter of routine, the photographer should make use of the entire range of film formats when handling an industrial photography assignment. Thus at a relatively low cost, the different magazines in the Hasselblad system considerably reduce the interruptions from film changing which usually occur in every industrial photography assignment.

Photo: Mitter Bedi



The Hasselblad has interchangeable focusing screens, including one with a split-image rangefinder. This makes for even faster and simpler focusing, a feature which often comes in handy in demanding industrial photography.



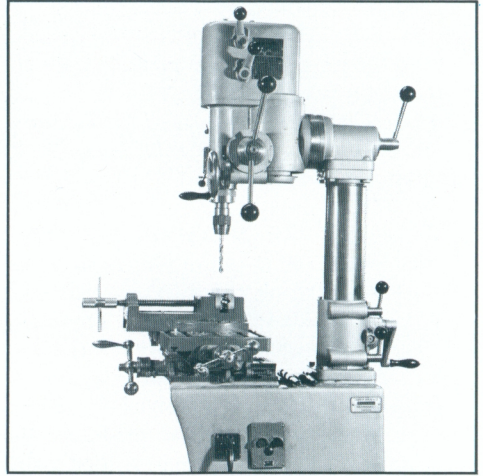
BIG JOBS WITH SIMPLE TOOLS

Blocking-out background with a new method

It is now possible to “clean up” untidy looking industrial interiors by making use of halftone and litho films on an Estar-base.

A photo of a new machine is often wanted before it leaves the plant. A busy plant, with all its distracting elements, is far from being the ideal photo studio. So the only solution to date has usually been to retouch the background of the photographed machines by air-brushing. There is now a new and simpler way: Estar-base negatives are dimensionally stable during development and drying. Thus, two identical negatives produced under the same conditions could be placed atop one another and show no deviations. One of the negatives is then used as a mask for the other in the following process:

Camera on tripod. Shot A with halftone film in the film magazine and with lighting suitable for the *machine*. Shot B with litho film in cut film holder. In this shot, the machine is kept totally in the dark and only the background is illuminated. It is important to over-expose the background correctly, i.e., absolutely black on the negative. A suitable way to achieve this is to “paint” the background with a moving lamp. Be careful that you don’t get yourself in the picture if you should be between the camera and the background. With the exception of the background, the room should be in complete darkness. You will have to decide your own exposure times as you see fit. After development, the two negatives are superimposed, atop one another. The method used cannot be detected in the enlargements. Cut film adapter and holders make it possible for you to use this method.



Exploded views directly

It is convenient to show assembly directions in the form of exploded views. This can be accomplished simply and effectively by just laying out the parts on a sheet of ground glass illuminated from below and above, and then reproducing the parts laid out with the Hasselblad reproduction equipment. The various parts are marked with instant letters and numerals and a full-scale original is then made for further processing by any suitable duplicating method, such as electro-stencil or electrostatic copying. Perfectly acceptable assembly instructions are obtained with this method at a reasonable cost for use during a period when the machine is first being operated and before instruction manuals of a more permanent type have been printed.

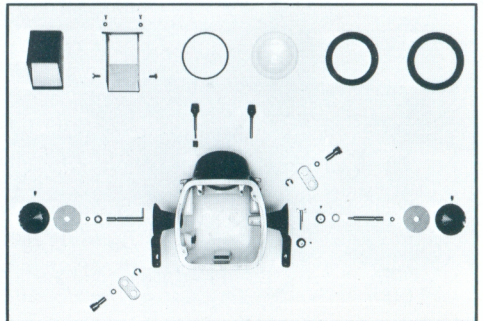




Photo: Jens Karlsson



A sturdy, professional hand-grip is sometimes a real asset. The Hasselblad has a pistol grip and a quick-focusing handle, two simple accessories which have "saved" many a complicated

news photograph, i.e. complicated in the sense that the photographer was busy just trying to keep his footing at a difficult camera site.

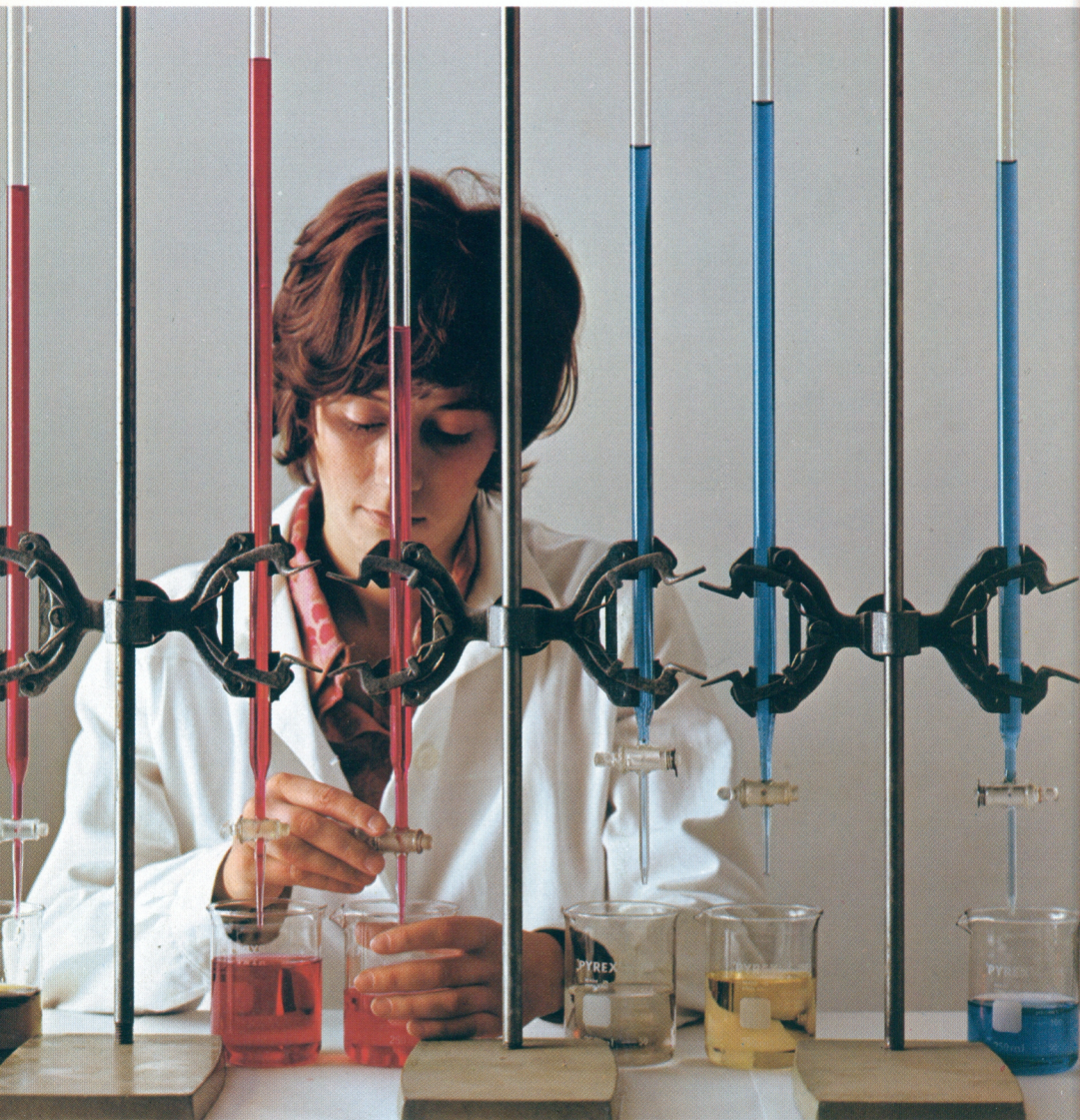
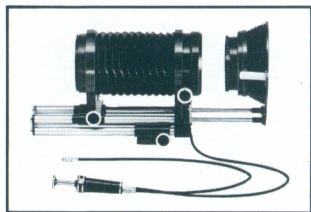


Photo: Bo Timback

Hasselblad's close-up and microscope accessories open the door to advanced close-up photography for both decorative and descriptive pictures. Demanding close-up techni-

ques become simpler with the right tools.



A SUITABLE BASIC OUTFIT FOR A NEWLY-ESTABLISHED INDUSTRIAL PHOTOGRAPHER

- 1 Hasselblad 500EL/M with 80 mm Zeiss Planar and Magazine A12
- 1 Magazine A12
- 1 50 mm Zeiss Distagon
- 1 150 mm Zeiss Sonnar
- 1 Focusing screen with split image range-finder
- 1 Lens shade 80
- 1 Lens shade 100/250
- 1 Lens shade 50
- 1 Extension tube 21
- 1 Extension tube 55
- 3 Proxar lenses, 0.5, 1.0 and 2.0
- 1 Tripod quick-coupling
- 2 Quick-focusing handles, 1 and 2
- 1 Aluminum case 612

Supplementary Equipment

- 1 Hasselblad SWC with 38 mm Zeiss Biogon
- 1 120 mm Zeiss S-Planar
- 1 Cut film adapter
- 1 Magnifying hood
- 1 Magazine 70
- 1 Intervalometer II

A SUITABLE LARGE OUTFIT FOR AN INDUSTRIAL PHOTOGRAPHER

- 1 Hasselblad 500EL/M with 80 mm Zeiss Planar and Magazine 70
- 2 Magazines A12
- 1 Hasselblad SWC
- 1 50 mm Zeiss Distagon
- 1 120 mm Zeiss S-Planar
- 1 150 mm Zeiss Sonnar
- 1 Lens shade 100/250
- 1 Professional lens shade
- 1 Extension tube 21
- 1 Extension tube 55
- 3 Proxar lenses, 0.5, 1.0 and 2.0
- 1 Magnifying hood
- 1 Eye-level prism viewfinder
- 1 Spare battery
- 1 Cut film adapter
- 1 Quick-focusing handle
- 1 Tripod quick-coupling

- 1 Linear mirror unit
- 1 Intervalometer II
- 1 Case 565

Supplementary Equipment

- 1 Hasselblad 500C/M camera body
- 1 Bellows extension
- 1 Transparency copy-holder
- 1 40 mm Zeiss Distagon
- 1 250 mm Zeiss Sonnar
- 1 Spirit level
- 1 Magazine A16S
- 1 Adjustable flash shoe
- 1 Flash-gun bracket
- Filters
- 1 Intervalometer I
- 1 Recharge unit III



H A S S E L B L A D[®]



Photo: Mitter Bedi

VICTOR HASSELBLAD AKTIEBOLAG, GÖTEBORG, SWEDEN

Text: Tor Alm. Layout: Lars Gustafsson