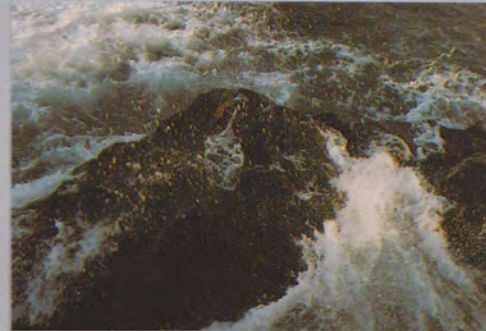




**Slide projection  
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310-123 engl.

# Impressions

... in front of me a snow-white seagull darts through the murkiness of a grey wall of rain, the wind drives spindrift across the emerald sea. I should like to capture this fascinating impression. A golden shaft of light breaks through the clouds, the water dazzlingly reflects it – these impressions cause amazement. The coast of Amalfi slowly takes shape in the light, glistening waves lap the beach, sounds from a far away country – I can hardly express my feelings in words, the pictures are much more evocative.

It is really difficult to describe in words a well presented sound slide show. It is indeed a new dimension of seeing things. No dark intervals irritate the viewer, there is no abrupt change of picture: it is a smooth change-over from one picture to the next. We see things that we had never seen before – colours and shapes interpenetrate, create transitions from one picture to the next, from the picture to the music, from the music to the spoken word. Even simple handwriting is judged in a different way.

If you think this description is an exaggeration, you will not yet have enjoyed the experience of a sound slide show with dissolve projection. The secret? Not a technological marvel, nor an expensive battery of instruments, simply two LEITZ PRADOVIT projectors and a LEITZ D.U. 24A dissolve control unit.

This system opens up a multiplicity of creative possibilities to you. It is the object of this brochure to talk about these

possibilities, to give advice, and to communicate experiences others have enjoyed and that you can copy.

The following chapters have been written not only for the technological fiends, who have an eye only for sharpness, control pulses and colour fidelity, but also for those, who look for the pleasure they can derive from a creative achievement. Who simply produce good, impressive pictures and want to view them in perfect conditions as far as these are possible.

The expressive force of a fully sound-coupled dissolve show is based not only on sober, sophisticated technology, but also on your completely personal ideas, the individual vision of things that without doubt is extended by technical possibilities of manipulation.

The harmonious blending of picture, sound, and sometimes even text opens new ways in the field of slide projection. You can set yourself new aims – a little more self-realization. Of course this does not depend merely on the ownership of a dissolve control unit and two projectors. Nevertheless, as a basic equipment this reigns supreme in the technique of projection.

The basis of these instructions is a sound-slide show, which is to demonstrate all the relevant possibilities within the framework of a limited subject accessible to everybody.

“Moments in the Bay of Salerno” were photographed in completely normal conditions within a brief span of time. Many

of you will know this area, others will be certain to find new ideas. The production of a dissolve show is described step by step.

Every single step is directly or indirectly related to other conventional possibilities of projection. What we aim at is to establish the basis for creating a dissolve projection show. How you do it and what subject you choose depends not only on your material circumstances, because perfect projection does not cost a fortune. The pleasure you derive from it, however, cannot be assessed in terms of money.



Fig 1

# The scheme, the concept

Many who have set up their first sound slide show out of existing pictorial material will experience disappointment after sometimes having laboured in vain: many wishes have remained unfulfilled. Too little picture material, too few slides which match in colour and content. Hardly any pictures that are suitable as “bridges” or links: to compose a dissolve projection you need slides from which “impending” motifs can grow, and fade away in follow-up pictures.

Representation of your pictures should be based on a “thin red line” which acts as an integrating element of the whole subject. Red line means concept. A plan will always be useful whether it concerns simple individual slide projection or ingeniously organized dissolve projection. Furthermore, conceptional photography can be a creative challenge, which offers more fulfilment to your photographic interest.

The establishment of concept is determined by several criteria. It depends whether you want to create a record of mainly informative content, live through a holiday tour again, or aim at the visualization of a piece of music. With the aid of a travel brochure, for instance, a rough picture of the destination can be mapped out: you can plan the photographic aspects of a holiday. A journey will be mainly a sequence, a mosaic of visual experiences: moments which are superficially determined by the itinerary. It is acceptable as a basic concept for many

subjects. But a dramatic composition of a sound slide show cannot be solely derived from the course of a journey. The climaxes should be related to a meaningful sequence. The first impression of a landscape, of a city or even of a human being is “total”. From this total we proceed to the detailed aspects (Figs. 19, 21).

Visual impressions create thoughts, which in turn can be expressed in symbolic photographs. The visual approach of a person is subjective, and the sound slide show thus reflects the character and the visual approach of its author. Having laid down the sequence of climaxes according to your taste or to necessity you will now attempt to determine the sequence and order within the groups of the pictures. A well-thought-out concept offers you the possibility of assessing the volume of the pictorial material realistically.

The composer of a sound slide lecture will soon realise that this requires a great deal of pictorial material. It is an illusion to think that it will be possible to set up a successful sound slide show with a single snapshot per subject. The realization that it is suddenly necessary to obtain more pictorial material so that you can compose an impressive slide show will probably discourage some of you. Members of a photographic society can help each other. To say that such a project is absolutely tailor-made for a photographic society is certainly not far-fet-



Fig. 2

ched. Not only cost but also effort can be saved in making the pictorial material available. It is reasonable to assume that some members of a photographic society are strong on photographing people, others have an eye for landscape or architecture.

To compose an audio-vision show jointly is an extremely beautiful and challenging proposition. From the discussions of the concept and choice of pictorial material to sound-coupling and programming the sound slide show is a project, which communicates creative ideas and gives much pleasure for long periods of time.



Fig. 3

# Slide selection



Fig. 4



Fig. 5

A committed photographer will spend uneasy hours until his films are developed. Tension increases when at long last they arrive. Because now assessment and selection can begin. Love at first sight may well be the impulse of his selection. Technical suitability is hardly less important. Exposure, definition, clear composition. These should be the three defining terms of slide selection. Except that in the composition of a sound slide show a photographic failure may



Fig. 6

come in handy. This may be a completely blurred picture, which is often found at the beginning of a film or a totally overexposed one.

The distinction between suitable and unsuitable pictures in the last resort requires some experience, which, however, everybody can acquire. Even nondescript pictures can be used within the framework of a sound slide show. The pictures that had been eliminated after first examination should by no means be

thrown away. The first choice of slides is now projected in a completely simple and straightforward way. Now the chaff will be separated from the wheat. If you are so inclined, you can already use two projectors at this stage, hit or miss. If you are the owner of a D.U.-24 M manual control unit, you will always hopefully fill two magazines and use the projectors in dissolve projection. Mere accidents often have produced perfect dissolves. Such random results should always be borne



Fig. 7

in mind. Perhaps they may come in useful.

You are now faced with a first, second and third slide selection. The first selection remains on the light box – if you have one; the second selection will be arranged in transparent slide filing pages, so that when looking for certain subjects, you will always be able to have a general view of what is available. The third choice remains in the little boxes supplied by most professional darkrooms and disap-

pears out of sight. The picture material that has generally been found acceptable and worth showing must now be sorted according to content. If you have taken your photographs according to a concept, eliminate all those pictures that do not have a direct bearing on it. Incidentally, music will improve things considerably. You can familiarise yourself with the music you might wish to choose even whilst choosing your slides. It can play in the background.



Fig. 8



Fig. 9

# Composition



Fig. 10

This step will show whether the concept is tenable on the basis of the pictures that you have taken. The original plan initially serves as the basis. The central points of interest of the content are now arranged in groups of pictures. Having laid down an approximate sequence according to your concept and taste you will now try to create a sequence within the groups.

Here you can be guided by two different criteria:

- a) A meaningful, integrated sequence
- b) A sequence matching in brightness, colour, and form.

You will often be faced with the question of what is of greater importance, beautiful dissolve or a meaningful sequence. There is only one answer: both must be right. If this is quite impossible, you can proceed according to the following principle: because a sound slide show is an audio-visual matter, the visual part appears more important than the contents.

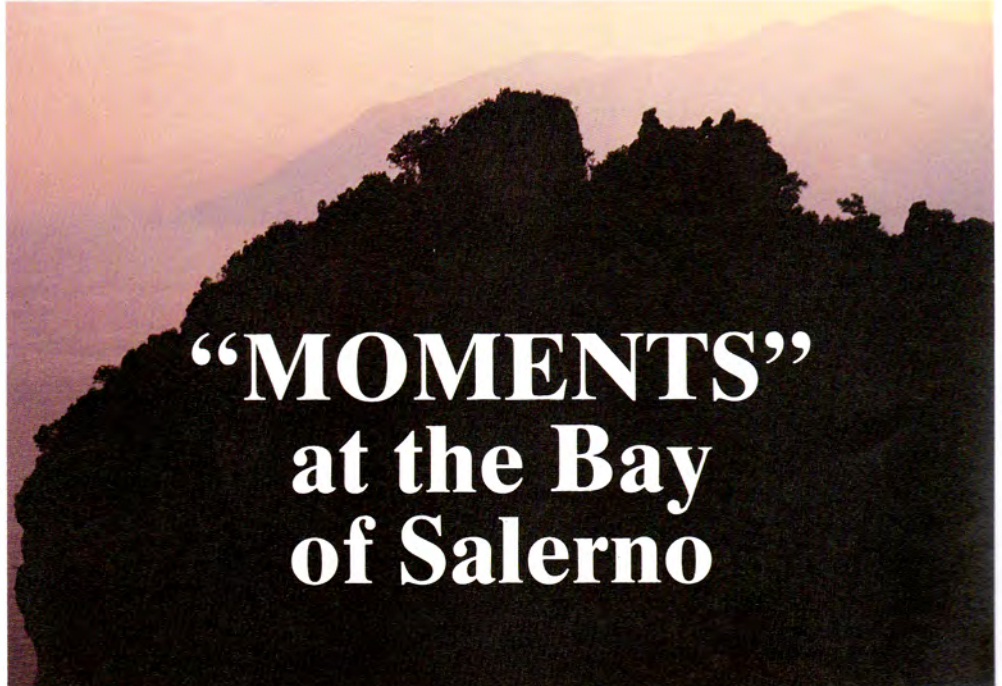


Fig. 11

Because the music signalizes a sequence of meaningful content, the visual effect, i.e. a beautiful dissolve, for instance, can be given pride of place.

One of the most important conditions of composing a sound slide lecture is the possibility of a continuous overall view. It must be possible to visualize the pictures in their totality.

Slide filing sheets are transparent sheets with pockets for at least 20 slides that can be arranged in a clear sequence;

these sheets are obtainable almost everywhere. They do not offer the best possibility, because the continuous rearrangement which is unavoidable with a sound slide show is very cumbersome, the entire selection can never be viewed at the same time.

A light box is the ideal solution. Because it is not exactly cheap, its size is an important consideration. If you start with a slide show of up to 72 pictures, i.e. two full 36-slide magazines, the slides,





Fig. 13

mounted and side by side, measure about 440 cm, including 1 cm distance between the slides. A slide has an edge length of 5 cm. And because we do not just want to see the final selection on its own, we still require space for alternative pictures. With its luminous area of 400 x 614 mm the LEITZ light box has space for about 95 slides.

But there is another possibility, which is completely adequate. Because we do not need a perfectly illuminated area, a

sheet of opal glass of suitable size can be used. This is placed obliquely against a window or diffuse lamp after horizontal strips on which the slides can stand have been glued to the sheet. From shops selling painters materials elastic self-adhesive sealing strips made of foam rubber, 0,5 cm thick, can be bought. These strips can be glued onto the opal glass sheet, converting it into a beautiful transilluminated wall, on which you can set up all your slides, which are firmly kept in

place. You can add, remove, and rearrange them at will.



Fig. 14

# Format, slide change, and dissolve

After the slide selection has been made on the light box, projection can begin. It is decided at this stage whether the sequence is pleasing and the phases of the slide change are interesting and of aesthetic effect. It is not yet very important that everything matches perfectly, because the very last refinements can be introduced only after sound coupling. Ill-matched passages will be the result, if you project – in the true sense of the word – in all directions. If the uncontrolled change from upright to horizontal format (and back) disturbs the framework, in which everything happens. The frame is the format.

What you may perhaps discount as a matter of taste here, too, it is ideal. Because audiovision reminds us of the medium of the film, the use of the horizontal format is almost obligatory. On the other hand, the upright format must not be completely eliminated. Various possibilities offer themselves of avoiding a break in the style of presentation.

With single-slide projection format change may be a pleasant break for the easily tiring eye. Here it raises no problems.

When you work in dissolve technique, are short of picture material, and therefore have to fall back on your upright pictures, you will have to put up willy-nilly with format changes. But you can avoid too abrupt a format break by inserting a square format.

The edge length of such a picture corresponds to the joint minimum edge length

of the upright and horizontal pictures to be linked. If you work with various film formats, you will have to obtain duplicates of a standard format. To mask the necessity of format adaptation even more, you can let the edges of the matched slide trail off into darkness.

This is how even an upright picture can be matched with a series of horizontal ones without it becoming noticeable. If you do not like soft edges, you can make use of square slide mounts. If you have enough pictorial material, you can change from a whole series of horizontal pictures into one of upright ones by fading out the one with the aid of a black slide and fading in the next in a different format from the darkness produced by the black slide. This is an ingenious possibility, which will also give the eye a little rest.

The visual impression of a slide show very much depends also on moderation. It may sometimes be necessary to give one or the other good subjects a miss, because it does not fit in the formal or more substantial frame. Figs. 14 and 15 represent such pictures. Especially Fig. 14 has such a mass of detail, that no suitable slides could be found, which together with this one would have produced successful dissolves.

Fig. 15 is a “genuine” upright picture. Here nothing can be omitted or changed. Unlike Fig. 60, of which a horizontal slide could be made without difficulty, Fig. 15 does not lend itself to this treatment,

even if this subject had fitted superbly in the sound slide show.



Fig. 15



Fig. 16

# Dissolve



Fig. 17



Fig. 18



Fig. 19

The D.U.-24 A is the nucleus of a sound slide show with dissolve.

It is a control unit for two PRADOVIT projectors for the continuous gradual or cut dissolve. The handpiece is operated with a square-guide slider switch, which is used for both dissolve and slide change. With a smooth, pushing movement the dissolve is controlled according to your own taste. It is advisable to practise this movement, because hesitant movement will be noticeable during projection. There are other reasons why you should familiarize yourself with the handpiece: clean projection will be achieved only when one of the projector lamps is completely extinguished before the change is effected. You should therefore push the slider beyond the stop with a short delay. You need not worry, if the next picture is not faded in immediately after slide change. Until a new picture appears in place of the preceding one, the slider must be moved almost through one third of the distance, because initially the picture to be faded in is too dim. The inexperienced user will at first be tempted to move more quickly at the beginning, when the picture will "burst" into projection. The slide change need not always be on projector A or B but can be confined either to A or to B at will. This is important, if you want to fade in pictures or text.

## Fade-in

The square-guide slider is pushed up to the centre of the scale or to a point corresponding to the brightness of the fade-in. This produces an effect similar to front projection or double exposure. Return from the central position to the original one and operate the limit switch: the fade-in disappears, and a new slide is introduced in the dark projector. Any number of slides can be successfully faded into a picture. Fade-ins can be a way of using a particularly beautiful slide for which you cannot find a follow-up slide, provided the picture into which this slide is faded has a suitable follow-up slide. Normally, a picture always requires a preceding and a succeeding one for the fade-out. With fade-in this can be limited to one picture, in which the other one emerges only to disappear again.

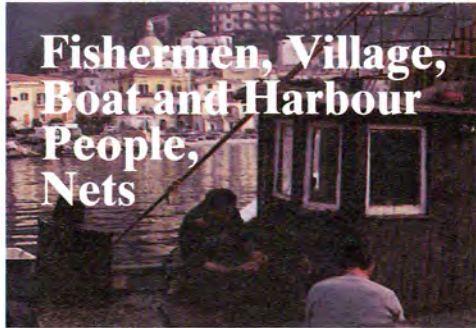


Fig. 20

### Cut

A cut change has no dissolve phase and is really nothing but a slide change without dark interval. Here matching of the pictures is not very important. It is more or less the individual projection of a slide, which should be carefully composed.



Fig. 21

### Flashing effect

With rapid sliding of the regulator to and fro up to the centre of the scale without use of the limit switch the bright fade-in flashes repeatedly on a dark background. Effects should be treated with great care, if the entire flow of a show is not to be disturbed.



Fig. 22

### Gradual dissolve

This is without doubt the most interesting and most creative possibility. If you master it, you can add "a certain something" to your sound slide show. Not only does it create a smooth change-over between the pictures – the picture change becomes a live collage, a blending of two pictures.

To master the phase of dissolve of two pictures, you should always have only one picture in view: i.e. two slides that are projected onto the screen. A double exposure, which should also be good as a single one. The pictorial components, divided into part-areas of the picture and dominating lines and colours should match, complement or contrast with each other. Because our picture moves, many a feature which would normally be considered unsatisfactory will not be very prominent.



Fig. 23

### Matching

If two pictures are identical in their pictorial lines or in their structure, but differ in their subject, picture change is almost imperceptible. The viewer will be all the more surprised, when at the end of the dissolve a different subject appears on the screen (Figs. 26, 27).

Total identity can produce an interesting effect, if the same pictures are framed in different positions. Owing to the slight displacement, the reflection of a boat in

the water, for instance, would „move“. This is a trick to loosen up a picture sequence or to extend it, when the music requires it. Another possibility of dissolving identical pictures impressively is different size. Through printing with altered dimensions by means of duplicate slides many a subject, preferably one standing in front of a dark background, can be reduced or enlarged. The repetition in sequence is striking, sometimes even fascinating, if this is done with sides re-



Fig. 24

versed. The additional possibility exists of creating a better starting point for the dissolve of the subsequent or preceding picture (Figs. 78, 79, 80).

Completely different subjects often lead into the most impressive dissolves, if a special trick is employed. The most popular one consists in dissolving pictures, whose formal part areas match, but greatly differ in brightness. Here a subject will literally grow from the preceding one. Whether a picture grows from another one or fades in the next one depends very much on content, meaning, and our natural understanding of things. Fire would grow from a stack of wood. A man could disappear into or emerge from the darkness of a narrow street. A boat could sink in raging waters.

Surprisingly enough, there is little to be said about colour. In pictures containing extensive areas the mixture of colours is usually pleasant to the eye. Choice of colour will, however, be important, if a

picture has strong colours in, for instance its upper part, but is almost black in the lower, whereas the second picture is very dark in the upper part, but has strong colours in the lower. The colours will now contrast in the course of the dissolve. Here the colours may well clash. But generally, they can be arranged according to the key of the complementary colours or the nuances of one colour. Because this is a subject about

which many books have been written, we do not want to deal with it in detail here. You must simply rely on your taste and on your feeling for colours.

All these points are important especially, when slow dissolves are used. If one of these requirements cannot be met satisfactorily, a formal problem can be suppressed with a special trick. Often the substantial relationship is so overpowe-

ring, that problems of colour, for instance, recede into the background. The viewers will find many a feature not quite as successful – or a failure – as the author does. This is not mentioned for the sake of finding an easy way out, but because in some sound slide shows so many factors have to be mastered, that 100 % success will never be possible. The problems are eliminated from the outset, if a hard dissolve is chosen. Whe-



Fig. 25



Fig. 26



Fig. 27



Fig. 28



Fig. 29

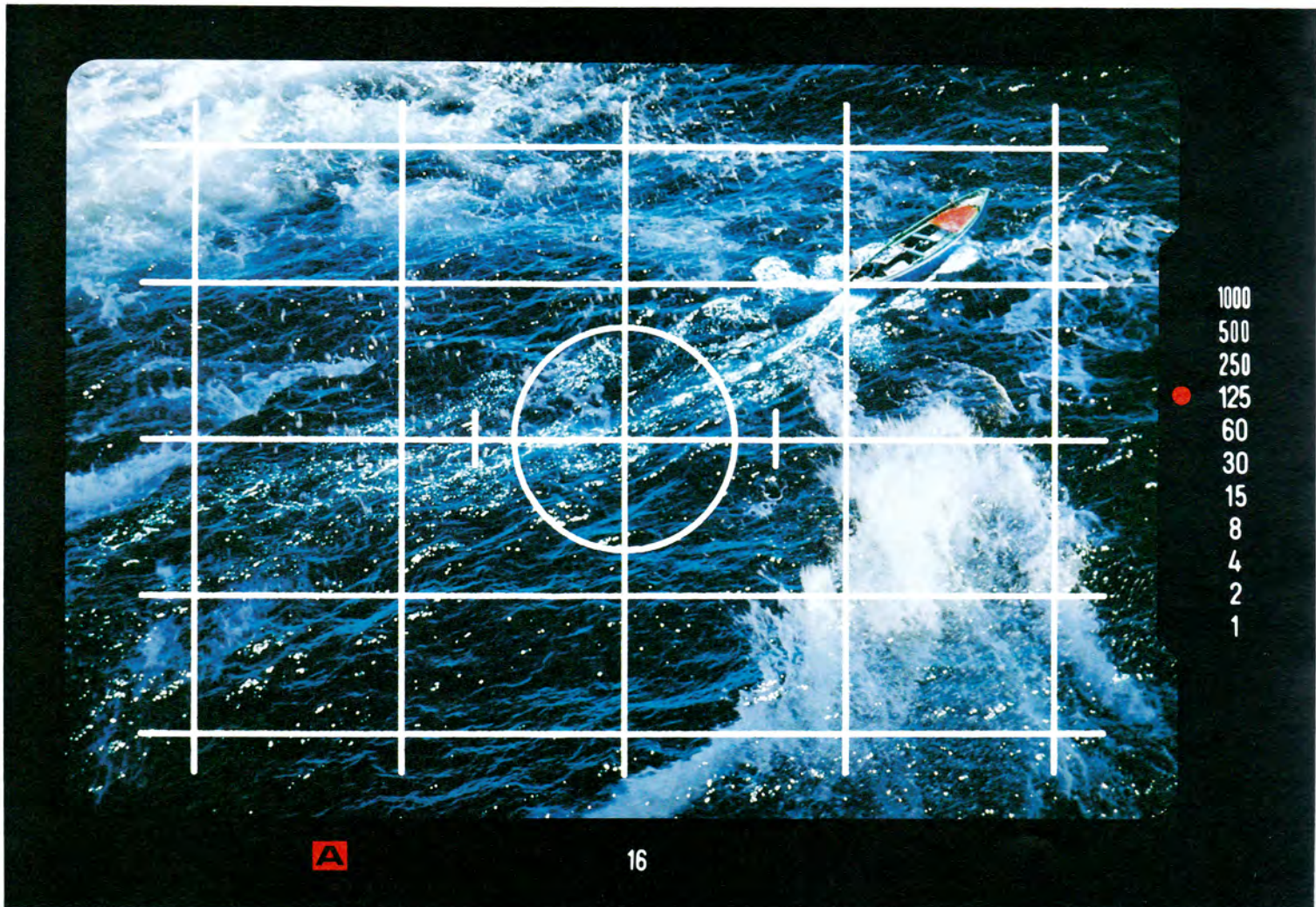


Fig. 30





Fig. 31



1000  
500  
250  
125  
60  
30  
15  
8  
4  
2  
1

A

16

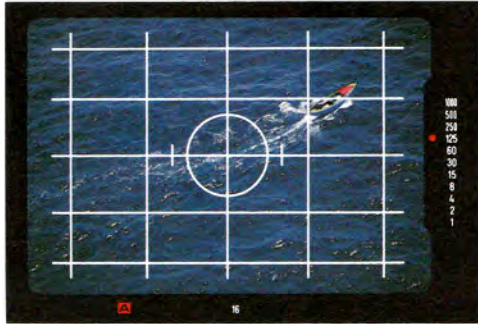


Fig. 33

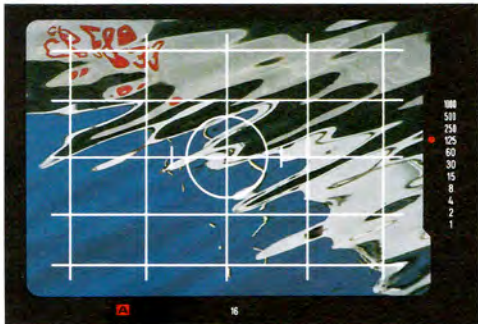


Fig. 34

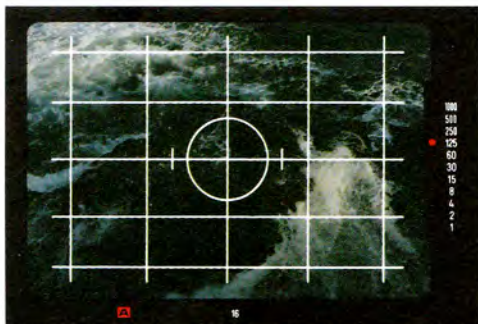


Fig. 35

ther this can always be done, however, depends on the dynamics and on the rhythm of sound coupling. Normally a dissolve is made smoothly, without hesitation; it is, however, possible to dissolve rhythmically, in steps. You can keep particularly beautiful phases of dissolve in view to enjoy the double-exposure or sandwich effect. The search for good dissolves is made easy, if the slide to be dissolved is left on the screen in one projector and all possible other slides are available in the second projector. The regulator of the handpiece is set centrally, and one slide after the other is dissolved. The “double-exposure effect” is seen at a glance, and a decision can be quickly made.

When you compose your first sound slide show of existing pictorial material, you will quickly learn that dissolve projection will become one of the determining factors of subject choice and pictorial composition even at the stage of the exposure.

It is quite feasible and legitimate to choose neutral subjects from thematically different pictorial material to obtain perfect dissolves. They may be details of buildings, or plants, as long as they match the particular landscape of the sound slide show. The sun, clouds, or an abstract subject, such as the brilliant reflections from a sheet of water, will always be suitable. Fig. 79 was photographed in a different part of Italy. But this kind of figurine can be found everywhere.

To this extent it is certainly legitimate to include an “alien” picture for the sake of the overall impression.

# Substantial information

## Commentary/text/writing

Although there is a saying that a picture is better than a thousand words, we cannot quite do without textual information. From the title to explanatory commentaries there are many possibilities of enhancing the impression and the substantial relation of an audiovisual presentation. The fading-in or -through of some text is a popular possibility of conveying information without impairing the intensity of the lecture. Explanatory interruptions may be very disruptive.

Independent speech is ideal for those, who want to adapt themselves to their viewers. Depending on the mood, thoughts on and explanations of what is being shown can be communicated. If you think that the spoken word is absolute, and do not want to submit either to your own or to your viewers mood, record the text on tape – or have it recorded. Not all voices sound attractive when recorded on tape.

Because a slide show is rarely sound-coupled with voice only, you need suitable equipment: two tracks of music, one of voice and the program pulses: a four-channel machine is necessary or at least a mixing desk and an AV head.

Here we enter the territory of the professionals, which is, however, not at all necessary, because slides with text are just as informative, and often lend visual support to the entire presentation.

If you want to present text in the form of slides, restrict yourself to title, names or designation of landscapes in brief word

combinations or short sentences. It may be possible to build up a textual concept on quotations of a well known travel writer. The less, the better.

Normally negative text is faded into the projected image, and after a suitable period of time – it is best to read the text slowly yourself in succession – faded out.

If a highly interesting text, well set in beautiful type, is available, it can be faded-in or -through like an ordinary picture, so that it is projected on its own. This creates a change and often a possible link between two pictures, which have to follow each other, although they do not match formally.

If you want to project text on its own, make sure, that it is not too bright and has the effect of flare. The brightness of a text can be reduced with neutral grey or delicate colour foil.

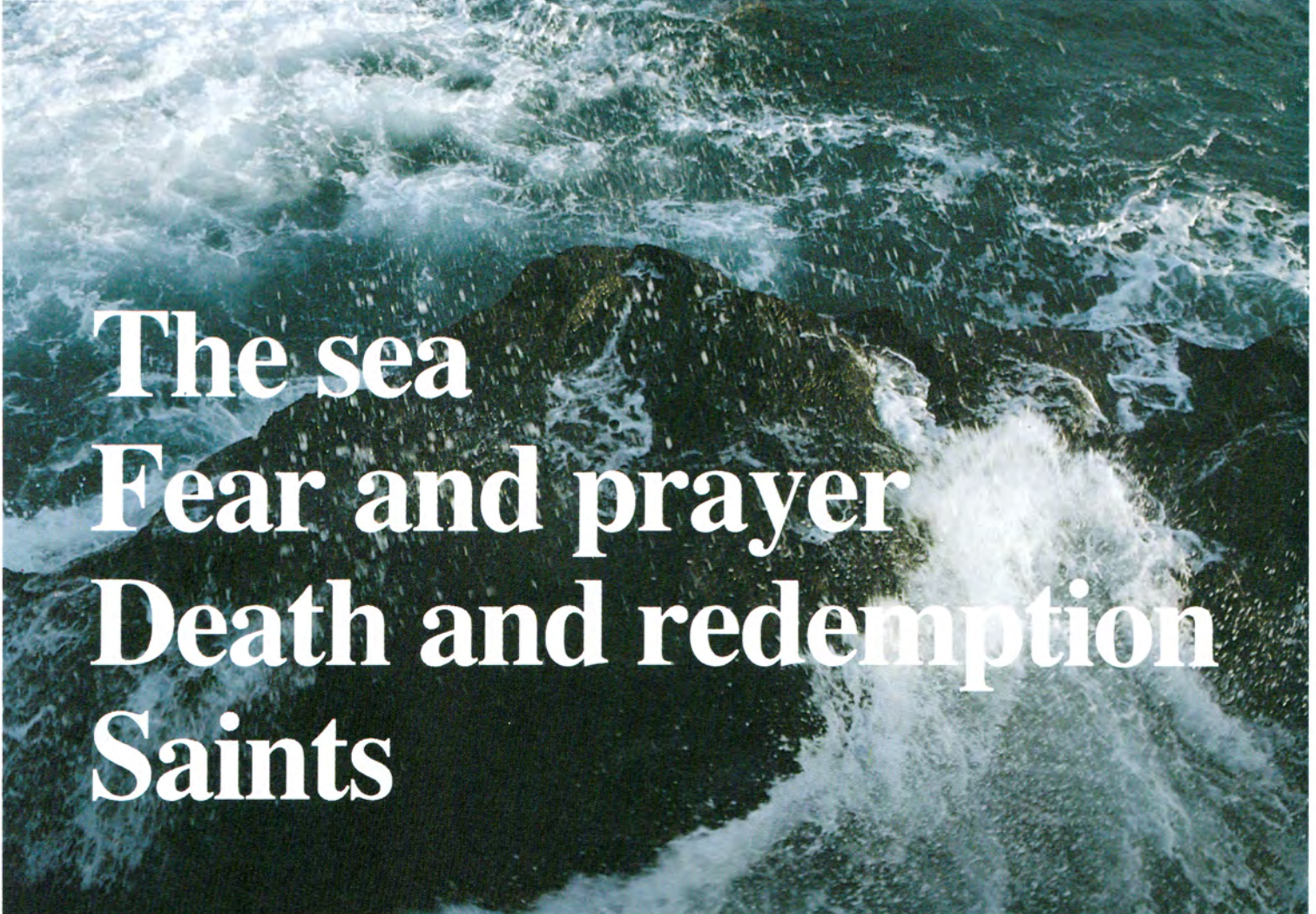
Coloured text slides can be made by duplication. In this way the text can also be alienated. Zoom effects, for instance, are possible during slide duplication (Figs. 37, 38, 39). Large negative letters can be backed by a suitable pictorial subject in the sandwich method, when they will have an interesting mosaic effect.

Negative text can also be printed onto a pictorial subject by means of the double-exposure method, and the slide inserted quite normally in the sound slide show. Conversely, a sandwich can be made of positive text and a subject with bright,

washed-out areas (Figs. 40, 41, 42). Positive text can be used in dissolve only with difficulty, because the bright background will swamp the pictorial subject into which it is faded. This can sometimes be successful – but usually it is not. Dissolving several slides with text in succession has a rather irritating effect because of the many intersections of the letters (Fig. 45). You can show the text first in the upper half of the picture or on the left or the right, and fade-in the following text in the lower half. Another possibility is the fading-in of various text slides separately.

In Fig. 48 the position of the text is bad, because it destroys the picture; a considerably better solution for the same picture is shown in Fig. 100.

There is sometimes a chance to photograph text on the spot, such as signboards or inscriptions on tombstones or monuments. It all depends. An example is Fig. 44.



**The sea**  
**Fear and prayer**  
**Death and redemption**  
**Saints**

Fig. 36

## Types

When you look through a catalogue of printer's types or through a journal, you will find, if you do this consciously, an almost unlimited of types. Whether it is a photographic journal, a newspaper, or an illustrated weekly, a book or an advertising poster, the designers will always go to great lengths to find the right type. Each type has its own individuality, which will be expressed only in the right relation to what it wants to describe.

This is a complicated and complex subject that cannot be reduced to a single sentence. One piece of advice, however, is apposite: use the simplest and clearest possible, easily legible types. The pictorial examples on this page are designed to give you some assistance in this matter. When you read magazines attentively, you will find new ideas and inspiration. Figs. 43, 46 and 47 demonstrate particularly clearly the unfortunate choice of a type, which is difficult to read, nor does it match the subject of the picture. When faded into the subject the text will have become almost illegible.

Obtaining the type is a problem, which is best solved by professional film setters. They offer expert advice and supply the desired type in the suitable size, ready set, positive or negative, on film or on paper. Although this is not the cheapest method, it is the cleanest and most professional possibility, and the overall impression of our slide show will benefit immensely.

You can also set your own text with LETRASET letters. The amount of work depends on the length of the text. You can also produce text slides by hand or with a typewriter. Because usually light script is required, the written or typed text is photographed on document-copying film, which is developed to very high contrast, perhaps even in paper developer. This produces a contrasty negative, which is suitable for fading in or printing in. If the contrast is not great enough, or the text in the wrong place, the negative, can be optically printed on contrasty reversal film, and all the defects corrected. Bright spots, caused by dust, can be touched up with body colour. After completion of this work it is the turn of sound coupling.



Fig. 37



Fig. 38



Fig. 39



Fig. 40

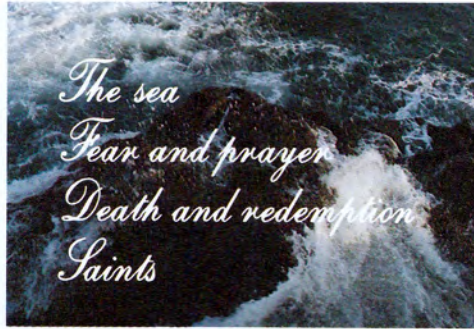


Fig. 43

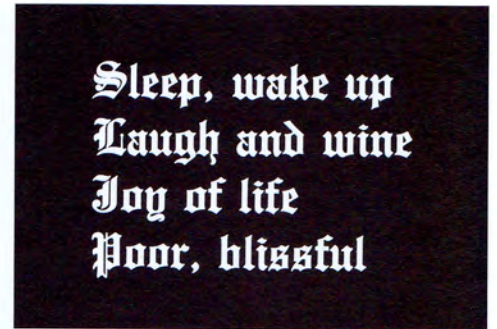


Fig. 46



Fig. 41



Fig. 44

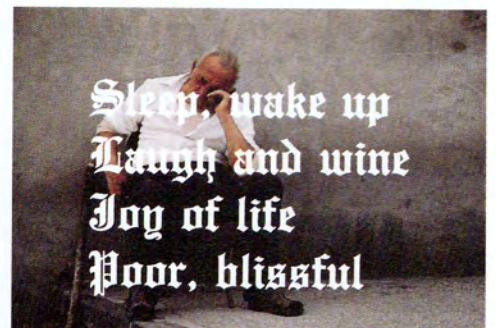


Fig. 47



Fig. 42

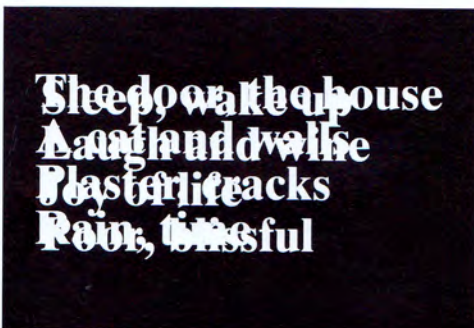


Fig. 45

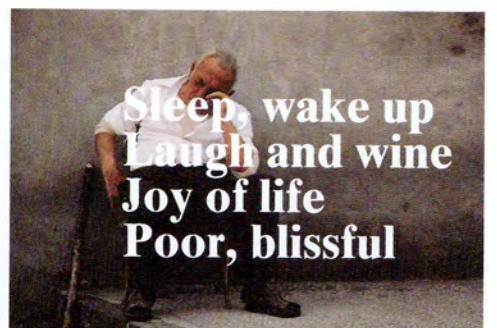


Fig. 48

# Music, noises, voice, sound coupling

Music adds something to your slide show. Tunes produce moods and condense statements. Music chosen with a purpose may enhance reality or alienate it.

Just because music is such a strongly creative element, it must be used with care and much flair: a heroic cloud landscape for instance in conjunction with dramatic music will quickly be felt overdone and kitschy. In spite of all its creative freedom, sound coupling, too, is subject to limitations, which, when mastered, will be a help in realising what initially is only a matter of our imagination.

## **From the picture to the music**

Every visual scene contains a certain statement, which can also be transposed into music. A picture of delicate flowers will normally be ill-matched with crashing military music, although such an audiovisual connection could even be feasible. If you love strong contrasts, look for symbolic statements and alienation, you will use contradiction deliberately as a creative element. If you recognize in a superficially healthy landscape threatening environmental problems, you can interpret this by the medium of sound/picture with suitable music.

But if you want to live through a holiday all over again in the combination of picture and music, you will use music or some other acoustic feature that will match the photographs. This may be folk

music, street noise with scraps of conversation or the sound of cow bells on a Swiss Alpine meadow – it all depends. Because we have to base sound coupling on a series of pictures, we have to adjust the music to the pictures. Not only the contents of a photograph, but also the duration of its projection, the duration and the appearance of possible dissolves determine the music.

The perfect impression is created only by the harmony of sound and picture. This sometimes creates problems, because few of us have such a comprehensive musical file – collection of long-playing records – to enable us to produce the required music at will. Often a compromise must be found, which depends on whether it is the pictures or the music that is intended to dominate. It is in any case advisable to buy records locally, because it is sometimes very difficult to find music at home, which is reminiscent of the country you visited on your holiday. Quite apart from the purpose of sound coupling, music is a beautiful souvenir.

## **From the music to the picture**

Many a tune induces daydreams, when in front of our mind's eye pictures arise, fade away, new impressions come and go – inspired by the music. It may set up a sound slide show of the imagination, and those, who have it in abundance, should not shrink from projecting what lives in their mind. The possibility of au-

division opens up many paths, in an almost surrealistic way – in the same way as dreams are made – of visualizing objects. From the essence and contents of a given piece of music, often an impressive concept can be developed into a sound slide show. You will then no longer show sound-coupled pictures, but make your audience listen to visualized music.

## **Effects**

Coupling your pictures, like film, with live effects can be very interesting. For private use the employment of such methods is free of charge, but if you give public lectures and charge admission, you should make sure, you do not contravene the copyright laws in the same way as when you use music.

To give completely authentic effects, you can record these locally, in the same way as do the cine-enthusiasts. The recording of effects, however, is something that will have to be learned, and not everybody is skilled enough to produce something that makes sense. We shall therefore give the subject a miss.

Whenever and wherever you want to use effects, follow the basic rule: be sparing and keep them in the background. When backed by music, effects will be enhanced.





Fig. 49



Fig. 50



Fig. 51



Fig. 52

### **Making the sound tracks**

The simplest method is to play a record while you look at your slides. The next step is the re-recording of individual pieces of musik in the desired sequence onto a tape – and again: start the tape, and look at your slides in conventional individual projection.

A number of tape recorders with a slide control unit are available with which you can program sound track and slide change. We shall presently discuss pro-

gramming in detail. To begin with, let us deal with the creative aspect of sound coupling.

At the present stage of our sound slide show it is important to lay down the sequence and the length of the sound track as well as the moment and duration of slide change.

To start with, you should become familiar with the music. You must learn its rhythm and dynamics, familiarize yourself with the entries of the various instruments,

and where applicable song or a change in motifs. Once you know your music, you will find things easier. Having established the first choice and the combination of your pictures, you can proceed, to begin with, quite playfully. Irrespective of whether you will achieve the end of the music synchronously with the fade-out of the last picture. Simply allow yourself to be inspired by the music, the pictures, and possible dissolves. You will soon see and hear, where a picture has to be



Fig. 53

changed more quickly, a dissolve executed more slowly, or whether the entire selection of pictures has turned out to be too long, or the music too short. With these mental notes you can now proceed to sound coupling.

You cannot change much in your music, because good music usually has been composed in such a way, that you can neither add nor subtract. You have to compensate by taking away or adding picture material. If it is possible to shor-

ten the music through fade out, look for a suitable passage. Music can also be faded in at a later stage, whereby the beginning is, as it were, cut off. Often this is quite impossible. If you want to manipulate music, you must know that every composition has a structure, which permits you to enter it or to leave it at an intermediate stage. If you are clever enough, you can even extend a piece of music. Whether in vocal or instrumental music you almost always find a structure



Fig. 54

consisting of repetitive motifs. If you can define these thematically and rhythmically – with popular music this is very simple –, you would, from a thematic point of view, lengthen a piece of music as follows:

introduction – theme – chorus –  
theme – chorus – end

The piece is best twice re-recorded to the required junctions at the same volume, and a cut made during the first re-recording after the last chorus, which of

course must be rhythmically correct. The chorus is followed by a theme, it is therefore possible to make another cut after the first chorus of the second re-recording, which will then begin with a theme. The final result will now be: introduction – theme – chorus – theme – chorus – theme – chorus – end.

You have gained the length of a chorus. This can be varied. Once the individual parts of the music have been laid down, they will be cut in the correct sequence with the necessary intervals. A cut of an interval should have no disturbing noises. For cutting the tape it is best to use a demagnetized pair of scissors or a cutting set, because a magnetic charge would produce a noise. The cuts are joined with adhesive tape specially manufactured for this purpose. Music re-recording should be started at zero level, where it should also be ended. If re-recording at different noise levels are joined, the cuts will be clearly noticeable. Pauses in the sequence of music can be avoided, if the individual pieces are superimposed. The criteria for music are similar to those for pictures: form and colour of a picture correspond to rhythm and key of a piece of music. When dissolving music ensure that there will not be hotchpotch of tempi or disharmony. If this is unavoidable, clean cuts between the pieces will be more satisfactory.

To produce continuous transitions between various pieces a mixing desk and two reproduction sets are required, such



Fig. 55



Fig. 56

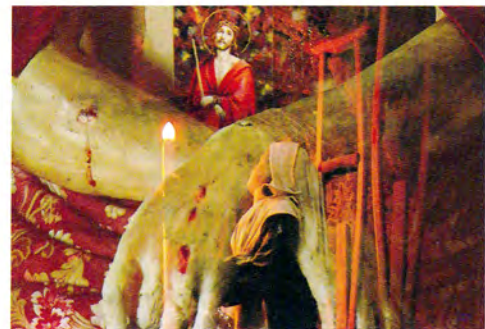


Fig. 57



Fig. 58



Fig. 60



Fig. 59



Fig. 61



Fig. 62



Fig. 63



Fig. 64



Fig. 65



Fig. 66



Fig. 67



Fig. 68



Fig. 69



Fig. 70

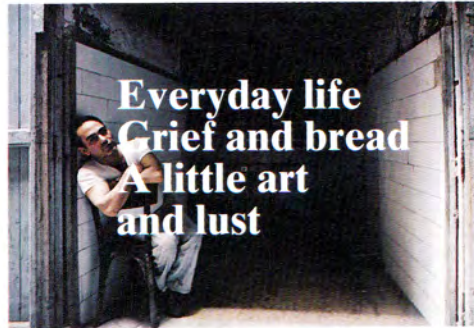


Fig. 71

as two record players or a record player and a second tape recorder. If you want to superimpose effects on music, you must also have the suitable equipment. The use of music in stereo or mono depends on the technical possibilities. Even as you take the first steps to sound coupling you should know what your technical facilities can do, so that at some stage – for instance during programming – you will find, that you do not have a blank track.

Much work and care goes into the production of a perfect sound track. Even trifles are very important: if music was re-recorded carelessly from a dirty or scratched record, the effect is irritating and detracting. But to produce a good sound slide show it is not necessary to exhaust all the technical refinements of sound coupling, because even the smooth transition between pictures is so dynamic that even simple use of sound has a profound effect.



Fig. 72



Fig. 73



Fig. 74

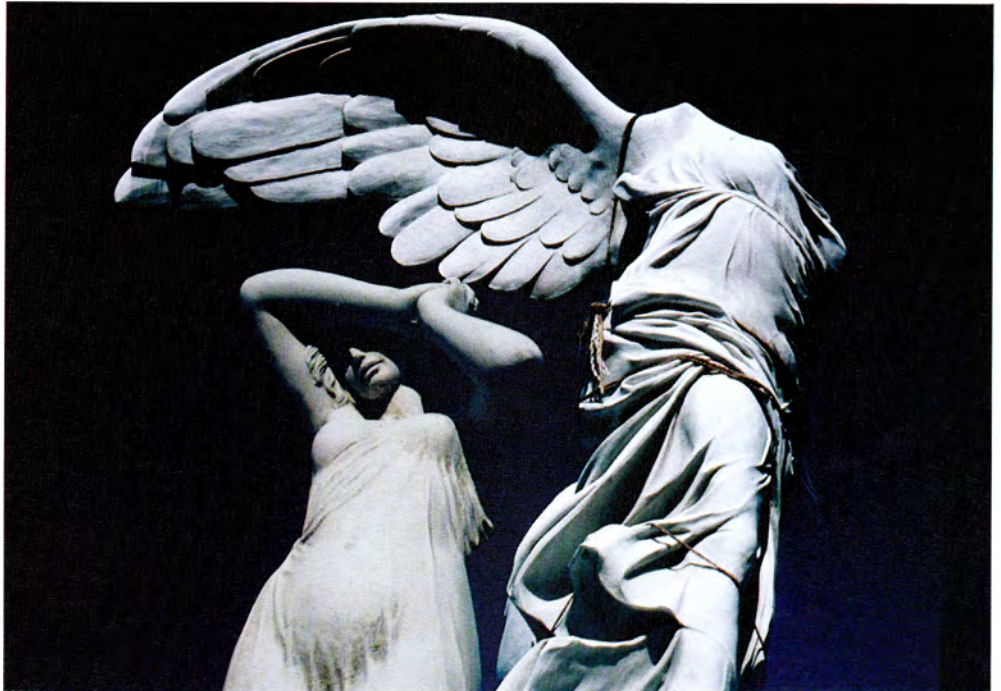


Fig. 75



Fig. 76



Fig. 77





Fig. 78



Fig. 79



Fig. 80

# Last refinements

The secret of a successful slide show is to captivate the viewers so that they are wholly lost in an audiovisual world. Unfortunately it is often quite minor things that call them back to reality. Things that disturb them almost unconsciously: unsharpness, dirt, dust, and possibly dissolves, which suggest that they could be perfect, if only the one picture were faded into the other 1 mm to the right . . .

Most of these minor irritations can be remedied. Knowledge and the will to achieve the best possible results are the keys. The professional producer of a sound slide show cannot do without the possibilities of duplicating or optically printing his own slides. To match, for instance, two slides whose size relationships of the motif clash and can therefore not be brought into perfect formal harmony, at least one of them must be adjusted by means of a part enlargement. Here is another example: to give a "coming" slide more impact during fading-in, it may be necessary to lighten or darken a certain area in the preceding slide. Such work is almost impossible for a professional darkroom to carry out. Good quality and reasonably priced slide copying attachments are available from photo dealers. A flash unit with colour head and all refinements is not essential as long as the light source guarantees relatively good and constant results. Halogen photolamps with blower are recommended, together with a set of the most important colour filters (gelatin). Fil-

ters are needed which correct daylight for artificial light and vice versa. During duplicating most films react with a red cast, which can be avoided with a suitable dose of green. Exhaustive information material exists about filtering. The purchase of these objects is dictated mainly by your needs, which you will be able quickly to define, when you work with the necessary care.

It is in any case advisable to duplicate the entire slide show as soon as it is complete, because with frequent projection the originals will lose colour brilliance.

Complete colour fidelity can hardly be achieved even by the most critical amateur photographer when he makes a duplicate – nor is it necessary as long as very bad colour casts can be avoided. Duplicating is a method with which colours can be changed at will, so that the possibility exists of adjusting the colour of individual slides in the sound slide show. Bright lights or patches in dark portions from which new motifs are to grow at leisure can be retouched with washable body colours (Figs. 82, 83). In this way, subjects can be isolated so that they wholly or in part stand out against a dark background. The touching up of slides presents no undue problem with a fine sable brush, a magnifier, and a light box, provided you have a steady hand, a keen eye, and patience.

You may occasionally want to use a slide side-reversed so that it is a better match

with the others. Usually the emulsion side faces the projection screen. When a slide is used back to front, it will no longer be in the focusing plane set in the projector. It can either be duplicated right-way-round, or the projector will have to be refocused. With autofocusing this creates no problem. If focusing corrections must be made during projection, the projected image may become blurred especially with a long-focal-length projector lens.

Constant sharpness throughout the slide show is one of the essential conditions of unalloyed pleasure. If you are radically opposed to glazing your slides, you can use a COLORPLAN-CF lens, which compensates for the popping of unglazed slides. Provided the slide has popped into its final position.

When mounting the slides, bear the following features in mind: Slide mounts usually have a white, heat-resistant side facing the lamp. The emulsion side of the slide and the heat-resistant side of the mount should therefore be in a uniform position. It is important to use mounts of the same make for a dissolve show, to ensure identical position, because different mounts show up in projection through displacement of the edges of the picture.

To avoid Newton's rings anti-Newton mounts should be used. This irritating secondary effect will occur particularly under the influence of heat, which can never be completely eliminated during



Fig. 81



Fig. 82

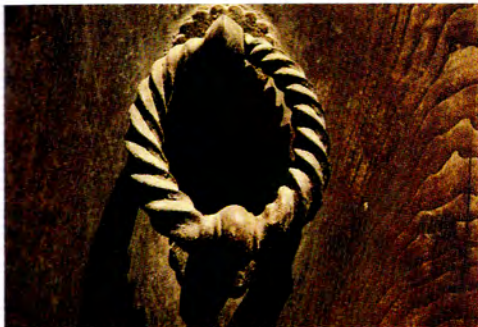


Fig. 83

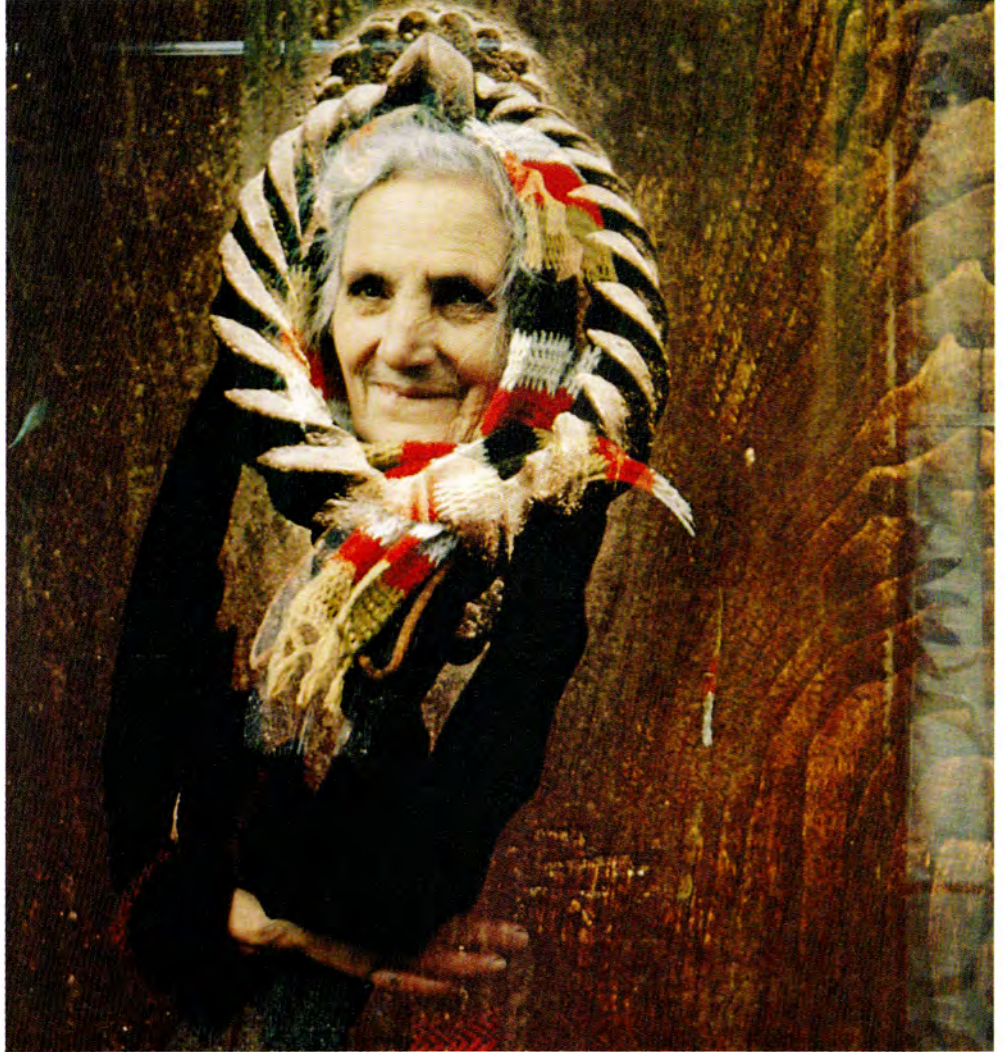


Fig. 84

projection, because some slides will spend a long time in the slide stage.

If you want to have your slides framed rocksteady in position, you can use slide mounts with lugs that engage in the perforation holes of the film. Most mounts are not large enough to project the entire slide: there will always be a certain amount of cutoff. This has the advantage that a slide can be moved within the mount. It is therefore possible to match slides even during mounting, so that they match completely in projection. There are frame marks with which the position of the slide can be controlled through to-and-fro tapping with the finger, before it is arrested with a final pressure on the mount. Excluding dust during mounting is not a fine art, merely a matter of care. If this is not your strong point, you can explain dust away as birds or helicopters but . . . joking apart, there is a possibility of dust free mounting your slides: compressed-air cans, anti-static cloths and brushes are perfectly adequate for the control of dust. First of all, remove loose, coarse particles from the slide with compressed air. In this way, the static charge of a slide is eliminated. Resistant particles can then be dislodged with a fine sable brush. Anything that resists even this treatment is bound to give way to rubbing with a cloth, which may be moistened with an antistatic-bactericidal wetting agent. A slide is polished with circular movements. Particles of dust are best seen in glancing light. But the final con-

trol should be carried out with a magnifier or, better still, during projection.

Glass mounts are very simple to clean. But in spite of the fact that all dust has been removed, a scratch will now and again be a disturbing feature. Most of these scratches can be eliminated during optical printing with suitable illumination, so that they will not appear in the copy. You have achieved it: An interesting, perfect sound slide show which is of one piece.



Fig. 85



Fig. 86



Fig. 87



Fig. 88



Fig. 89



Fig. 90

# Programming

If you program your sound slide show, you imprint your personal note on the audiovisual work. The technique of programming depends first and foremost on the available instruments. The tape recorder plays a decisive part. Possibilities of programming for ordinary use are: mono sound track with pulse track; this is possible with any stereo tape recorder. Stereo sound track with pulse track; for this either a stereo tape recorder with AV head through which a track on the back of the tape is recorded, or a genuine four-channel tape recorder, which, however, is quite expensive, is required. Tape recorders with AV head can also be obtained in the form of cassette recorders. A track recorded with an AV head can be played only in one direction. Stereo instruments with AV head are ideal for home use.

The use of ordinary ferrite tapes is recommended.

Depending on the complexity of the sequence of an audiovisual work it is advisable to make a shooting script. Having decided the duration of the projection of the individual pictures, the moment of picture change and the duration of the dissolve, you can make notes, which reflect the sequence, defined in seconds, of all dramatically important details.

If you are on your own and, in addition, have a second tape recorder available, you can first make a script tape recording details, which you can then play back synchronously with the pulse recording



Fig. 91



Fig. 92



Fig. 93



Fig. 94



Fig. 95



Fig. 96

proper. You will thus always know what you have to do. You can also note the script directions on paper and add the timing. Instead of timing you can use the counter of the tape recorder. But this method can confuse those without experience. It is simpler for a partner to give the instructions. These can be coached in cues such as "cut picture change - now" or "let dissolve stand".

The simplest possibility is to program by heart. If you have made a mistake, you have to return to this mistake, erase it and reprogram. With short, straightforward sound slide shows it is simpler to record afresh from the very beginning. This also avoids the danger of losing the thread in flow and rhythm.

# Presentation



Fig. 97

Success and effect of your pictures are influenced by the projection, the projector, the sound equipment, conditions of space, the quality of the projection itself, and last, but not least, the viewers and their approach to what they are offered.

## Projection surface

Human visual habits are a constant, which has to be allowed for – unless you are out to shock your viewers. We see things in a panoramic horizontal format with concentration on the centre of the picture. The surrounding field is perceived as a secondary feature. A very small projected image no longer has a surrounding field because of the dark background. The small field of view strains the eyes, and one has to become accustomed to it. But a good slide show should ensure ideal conditions from the very beginning. The projection area should be as large as possible. This depends mainly on the conditions of space, which also determine the distance bet-



Fig. 98

ween the projection surface and the projector. Possibilities should always be exploited of keeping the distance between the projector and the screen as long as possible. A screen on a tripod does not always permit this. A permanently fixed projection area is better; this could be a pull-down screen directly fixed to the wall. Even a perfectly whitewashed wall of a room is sometimes better than a screen, which would be a disturbing feature in it. If you are forced to place your

guests at wide angles in front of the screen, do not use a bead screen, because the falling-off of light for persons sitting at an angle to the projection area is often so bad that they can see only a fraction of the otherwise brilliant pictures. A screen made of simple white reflection cloth is much more suitable.

If you have two rooms connected through a large door or an opening in the wall, you can also use back projection. Although this slightly impairs picture qua-





Fig. 99

lity, the effect will be better because you have the advantage of being able to house all the technological equipment in one room, and your viewers in the other are not influenced by the presence of the instrument. No disturbing cables, not even the noise from the blower of the projector or of slide change. Here the slides must be arranged wrong-way-round. The projection area should be utilized to the fullest possible extent. Square areas are suitable for upright and

horizontal formats. If you project in low rooms up to almost the ceiling, you must consider one disadvantage: most ceilings are painted white and reflect the light of the projected image, which will thereby lose brilliance in detail and colour rendering. A room with black, light-absorbing walls would be ideal. We would of course never advise anybody to paint his living room black merely for the sake of projection. Nor must the guests appear in black, but light tablecloths, for

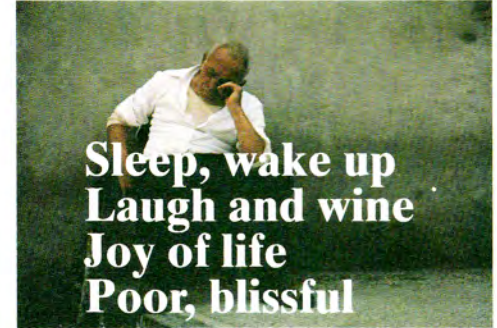


Fig. 100

instance could be removed. Slides are shown to best effect in a completely darkened room. In the cinema, room illumination is softly dimmed. This can also be done at home by means of regulating resistances. The soft light transition is a pleasant surprise for your guests. Especially at the end of the show a softly increasing room light is pleasing, because the eye had become accommodated to the lower light intensity of the projected images. Suddenly switched on light brings the viewer back to reality with a bang. It would perhaps be a good idea to prepare for the return to reality with candlelight or other weak light sources. Why all this? Because we should consider every condition, which favours the overall effect, even if this will be appreciated only in the subconscious.



Fig. 101

### The projector

If you cannot adjust image size by changing the distance, you will need interchangeable lenses. For the LEITZ PRA-DOVIT, lenses from 35 to 300 mm focal length are available. The table shows which lens is best for your own purposes. If you give slide lectures in various locations, equip yourself with a choice of lenses to do justice to any size of room. A portable yet sturdy projection table has without doubts its advantages. On a

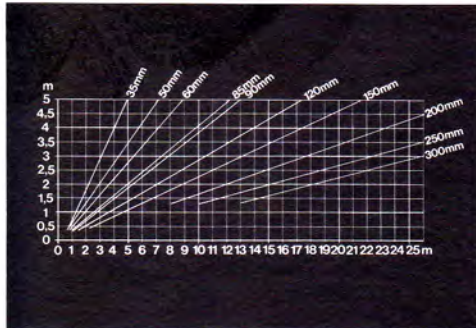


Fig. 102

wobbly table, the projected slide may wobble during slide change. The projection table should be set up on firm ground.

Projection tables with two shelves are ideal: one for the projector, the other for the interchangeable magazines, pocket torch, replacement lamp for the projector, ashtray, or a glass. If you have sound coupled and programmed your slide show, you can also place your tape recorder and the D.U.-24 A on the second shelf. Additional weight on the projection table makes for a firmer stand. In this context it must be mentioned that the LEITZ console for two projectors is completely vibration-free. It permits the arrangement of two projectors on top of each other, so that you can work with ordinary projection tables.

Having laboriously mounted your slide or using a COLORPLAN-CF lens for unmounted slides ensure that this guarantee of sharpness is not lost through negligent setting up of the projectors: the pro-



Fig. 103

jection screen and the projector must be parallel in the horizontal and vertical planes to eliminate the risk of unsharpness. With dissolve projection this cannot be completely avoided, because the two projectors must be slightly inclined to each other, i.e. lose their absolute parallelism. This problem is satisfactorily solved by the console.

The technical preparations should be completed before the arrival of the first guest. If you set up your projectors only after your audience have taken their seats, you will considerably reduce the atmosphere of expectancy. A careful matching of the two pictures is very important. Line-up slides are available for aligning the projectors. The D.U.-24 A also has a line-up position in which both pictures are projected simultaneously. Never forget to clean the lens and condensers of the projector, because dust becomes readily lodged in the optical path.



Fig. 104

Interchangeable magazines should be held in readiness so that confusion is impossible. Magazine change should be practised in the dark to avoid any hitches. This also applies to any unexpected lamp change in the projector.

### Sound equipment

In most cases the existing stereo equipment is eminently suitable, if the loudspeakers are correctly aligned to the projection screen. The volume should not drown the picture, and even dramatic climaxes do not justify insulting the ear of the viewer. Hearing ability of individuals differs widely, and this should be taken into account when the seats are arranged. This can be done tactfully. One very often hears: "the pictures were fantastic – the music was too loud or too low." The guests in the front rows will obviously be exposed to a greater sound volume than in the back rows. This can be compensated with two auxiliary speakers to be set up at the back of the viewers. Another



Fig. 105

possibility is the setting up of the main speaker behind the viewers, so that the music is reflected from the front. This of course involves a loss of quality, because most rooms are not specially designed for acoustics; this is, however, compensated by the music, which now is "suspended" in the room.

Ideally the tape or the amplifier should be within the radius of action of the projectionist, so that he can start and stop them. He will also have the volume under constant control. The speaker and current carrying cable should be protected. It is best to inform the guests, where the cables run, so that they will not stumble over them and possibly spoil the perfect beginning of a well-prepared evening. How quiet your guests are is solely a matter of their tact and of the quality of your presentation. Thoughtfulness can eliminate disturbing factors such as a lack of drinks or ashtrays within arms length.



Fig. 106



Fig. 107



Fig. 108



Fig. 110



Fig. 109



Fig. 111



Fig. 112



Fig. 113



Fig. 116



Fig. 117



Fig. 114



Fig. 115



Fig. 118



Fig. 119



Fig. 120



Fig. 121



Fig. 125



Fig. 126



Fig. 127



Fig. 131



Fig. 132



Fig. 133



Fig. 122



Fig. 123



Fig. 124



Fig. 128



Fig. 129



Fig. 130



Fig. 134



Fig. 135



Fig. 136

# Panoramic projection, pairs of pictures

Although this brochure concentrates on sound slide shows with dissolve, many hints also apply to simpler methods of projection. The projection of two pictures side by side is possible for any owner of two projectors. The confrontation or complementary presentation of two pictures is optically impressive. Criteria of the effect of a pair of pictures can be summarized in four main points: colour harmony – formal harmony – contents – objective information.

Harmony and matching can here also mean deliberate contrasts. If you want to achieve only an aesthetic effect, you can disregard points 3 and 4. But if you look for a substantially strong effect or objective force of conviction, you should pay attention to the two last-named requirements. These are important even when you want to show an object simultaneously in its total or detailed aspect “before and after” or “right/wrong”.

A further possibility is panoramic projection. This is not the projection of pictures taken with a panoramic camera, but merely the continuous side-by-side projection of mainly landscape or urban subjects. Common features should be present in such pictures, which at least give an inkling of the autor's intentions. There should be connections across the adjacent edges of the pictures, such as a mountain range or the horizon of a lake. This reinforces the impression of a homogeneous panorama.



Fig. 137



Fig. 139



Fig. 140





Fig. 138



Fig. 141

A method called "soft-edge projection" is an American idea. If these soft edges are dissolved or lapped by moving the projectors closer together, a continuous flowing pictorial transition is created across the edges, connecting two pictures in a fascinating manner. This can be compared, for instance, with the doppelgaenger effect of the trick attachment in real photography.

A "softy" is very simple to produce: during copying hold as much of the edge back as you want. But the holding back must have a soft transition to that part of the picture which is later to be projected. If this is done on the right in one picture, it must be repeated on the left in the other, but at the same proportion. Now the two projectors are aligned so that the soft parts of the projected images overlap. Pairs of pictures should be changed synchronously. This applies particularly for soft-edge pictures. It is, however, also possible to use dissolve projection, except that then the pictures will not be dissolved but faded in and out side by side.

# The complete equipment range for manual and automatic dissolve technique

**D.U.-24 A dissolve control unit**



Control unit for continuous soft and hard dissolve. No time limit on soft dissolve. 24 v supply through the modified projectors with built-in TRIAC for lamp control, hence no heating up of the control unit. Light change of the projector can be repeated as often as required, because slide transport is optional. Push-button for instant light change from projector ALB (flip-over-button). Signals can be recorded on a cassette recorder or stereo recorder. Black metal casing with chromium front panel, on which all controls are arranged. Two 1.5 m connecting cables with 10-pin plug in the back of the control unit. No additional mains cable necessary. Handpiece with 2 m connecting cable. Coupling cable for free head. 1 + 2 junction piece.

**D.U.-24 M dissolve control unit**



Handpiece with all controls: push-button for starting the dissolve and subsequent slide change of the dark projector. Setting disc for the pre-selection of the desired dissolve duration from rapid, hard dissolve to soft transition. Push-button for switching on the built-in light pointer. Setting disc for switching on the built-in timer and preselection of the desired interval up to about 30 sec. Connecting cable, length 3 m. The cable divides at 2.5 m for connection to the two projectors. 10-pin plugs for the projectors.

**PRADOVIT CA 2500/1500**



Automatic 35 mm slide projector for 36- or 50-slide standard magazines. High optical performance with the 90 mm LEITZ-COLORPLAN f/2.5, LEITZ lenses from 35 to 300 mm focal length. High-quality aluminium projector housing, anthracite grey. 110-240 V/50-60 Hz voltage selector (PRADOVIT CA 2500), 24V/250 W tungsten halogen lamp (PRADOVIT CA 2500), 24V/150 W (PRADOVIT CA 1500). Aspherical condenser system, illuminating the slides brilliantly from corner to corner. Interchangeable condensers. Autofocus device for automatic focusing, extremely sensitive and rapid response with silicon photo elements. High focusing accuracy. Remote-control handpiece with 3 m cable. Sockets for separate remote-control cable, for tape recorder and slide control units, timer, IR remote control, radio remote control. Projector complete with mains cable, lens, tungsten halogen lamp, magazine, 10-pin socket and built-in TRIAC.

## PRADOVIT RA 150



Automatic 35 mm slide projector for 36- or 50-slide standard magazines.

High optical performance through 90 mm LEITZ-COLORPLAN f/2.5.

LEITZ lenses from 50 to 150 mm focal length.

Projector housing of modern design, made of impact-resistant, high-quality plastics with textured surface, anthracite colour.

110-240 V/60 Hz voltage selector, 24 V/150 W tungsten halogen lamp.

Modern, aspherical condenser system for brilliant slide illumination, interchangeable condensers.

Autofocus device for automatic focusing, independent of the centring of the projector lamp through its own light source, high focusing accuracy.

Remote-control handpiece optionally for insertion in the projector, or, for hand-held use, with connecting cable, length 1.2 m. Socket for separate remote-control cable, for tape recorders or slide control units, IR remote control, radio remote control.

Projector complete with mains cable, lens, tungsten halogen lamp, magazine, 10-pin socket and built-in TRIAC.

## Console, light box



The PRADOVIT console for dissolve projection saves standing area and places the two projectors, standing vibration-free on top of each other, in a position in which their optical axes are very closely spaced for the closest possible coincidence of the projected images. The D.U.-24 A control unit can be placed below the console, so that a compact unit is formed.



The light box is ideal for editing and for the assessment of slides and negatives. The illuminated area measures 400 x 614 mm and is sufficient for about 96 50 x 50 mm slides. Two fluorescent tubes produce uniform illumination of the opal-glass sheet at about 9000 L. Little heat transmitted to the working plate. Four black cloths are provided for the precise masking of any surrounding field which may be disturbing.

## Instrument set for dissolve projection

**1 dissolve control unit** **Code no.**  
**D.U.-24 A** with recording facility for cassette or tape 37 973

or

**dissolve control unit**  
**D.U.-24 M** for manual dissolve 37 971

**console**  
 for the setting up of two projectors 37 972

**2 PRADOVIT CA 2500** with lens

35 mm*	ELMARON®	f/2,8	30 373
50 mm**	ELMARIT-P	f/2,8	30 299
60 mm***	ELMARON	f/2,8	30 375
85 mm	ELMARON	f/2,8	30 376
<b>90 mm</b>	<b>COLORPLAN®</b>	<b>f/2,5</b>	<b>30 377</b>
<b>90 mm</b>	<b>COLORPLAN-CF</b>	<b>f/2,5</b>	<b>30 384</b>
120 mm	ELMARON	f/2,8	30 378
150 mm	ELMARON	f/2,8	30 379
200 mm	ELMARON	f/3,6	30 380
250 mm	ELMARON	f/4	30 381
300 mm	EPNOR®	f/4,3	30 382

or

**2 PRADOVIT CA 1500** with lens

35 mm*	ELMARON	f/2,8	30 364
50 mm**	ELMARIT-P	f/2,8	30 298
60 mm***	ELMARON	f/2,8	30 366
85 mm	ELMARON	f/2,8	30 367
<b>90 mm</b>	<b>COLORPLAN</b>	<b>f/2,5</b>	<b>30 368</b>
<b>90 mm</b>	<b>COLORPLAN-CF</b>	<b>f/2,5</b>	<b>30 383</b>
120 mm	ELMARON	f/2,8	30 369
150 mm	ELMARON	f/2,8	30 370
200 mm	ELMARON	f/3,6	30 371
250 mm	ELMARON	f/4	30 372

or

**2 PRADOVIT RA 150 projectors** with lens

50 mm	ELMARIT-P	f/2.8	30 548
85 mm	ELMARON	f/2.8	30 553
<b>90 mm</b>	<b>COLORPLAN</b>	<b>f/2.5</b>	<b>30 554</b>
<b>90 mm</b>	<b>COLORPLAN-CF</b>	<b>f/2.5</b>	<b>30 557</b>
120 mm	ELMARON	f/2.8	30 555
150 mm	ELMARON	f/3.2	30 556

**Two hoods** for the PRADOVIT C/CA 37 956

or

**Two cases** for the PRADOVIT C/CA 37 961

or

**Two carrying bags**  
 for the PRADOVIT R/RA 150 37 954

**Light box** 16 792

\* only up to 35mm format and 30-slide magazine  
 \*\* only up to 35mm format, not for 50-slide magazine  
 \*\*\* up to 40 x 40mm format, not for 50-slide magazine



From a single source,  
if only  
for the optical quality:

Photography \_\_\_\_\_ with the LEICA®  
Projection \_\_\_\_\_ with the PRADOVIT®  
Enlarging \_\_\_\_\_ with the FOCOMAT®  
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