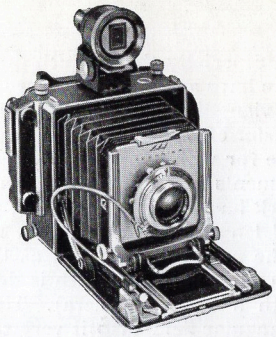
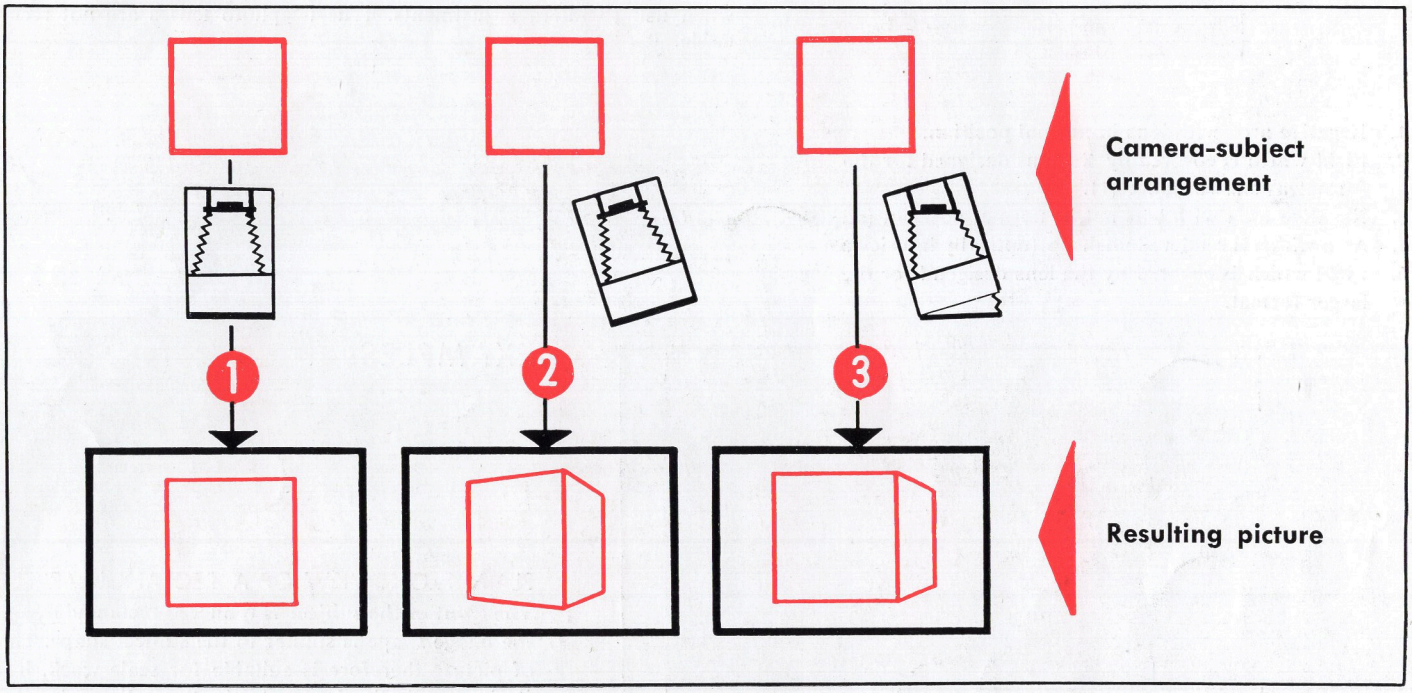


THE LINHOF TECHNIQUE

Data Sheet No. 4

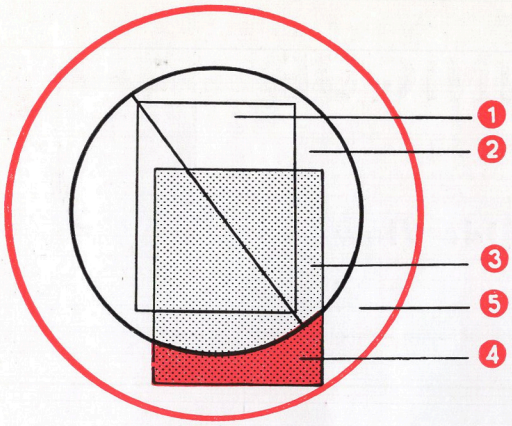
Combination of Front and Side View



A correct rendering of perspective is of decisive importance when photographing a rectangular subject, in order to obtain a three-dimensional effect. In commercial photography, the man behind the camera often is confronted with problems which at first glance appear impossible to solve, yet are relatively easy overcome by using the camera adjustments correctly.

Frequently, a rectangular, three-dimensional subject is to be photographed in such a way that its front must be rendered rectangular, i. e. free from distortion 1; at the same time, the three-dimensional nature of the subject must be retained by also showing one side of it 3. Such problems quite often arise also in architectural, industrial and scientific photography. For example, a photograph of a store window is wanted from directly in front of it, its frame being parallel to the edges of the negative, yet the subject in the window (merchandise) has to show its front and one side. Tasks as this one are quite common in commercial photography, especially when furniture is to be photographed. How are they solved?:

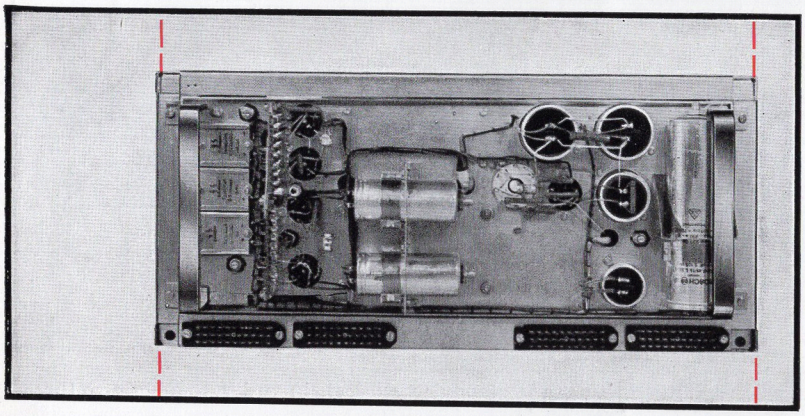
If the front of a rectangular subject, e. g. of a cube, has to appear rectangular in the picture, the film plane has to be parallel to the subject plane (compare Data Sheet Nos. 2 and 3). Normally, if the above rule is followed and the subject is in the center of the picture, the position of the camera is directly in front of the subject 1. In this case, none of the sides of the subject is visible. To obtain a side view, the camera must therefore be placed slightly to one side. It is then aimed so that the subject image is centered on the ground glass. In this camera position, the film plane no longer is parallel to the front of the subject, the image of which becomes distorted 2. The adjustable camera back is now swung out until parallelism to the front plane of the subject is restored. As a result, a rectangular image of the front of the subject will be obtained; at the same time, it will appear almost as though it had been photographed from the side, i. e. one side of the subject is shown also 3. This would mean the solution of the problem. Due to the swung out camera back, however, one side of the subject image always will be out of focus. To bring back the entire subject into focus — without stopping down the lens — the lens standard is swung into a position parallel to the film plane. Viewed from above, the front plane of the subject, the lens standard and the film plane are now parallel to each other 3. In extreme cases, where one side of the subject is more emphasized, and where the camera position therefore is further to the side, the lens standard must be slid laterally towards the subject, in addition to the aforementioned camera adjustments.



1. Negative area with lens in normal position.
2. Field which is covered by the lens designed for the format as shown under (1).
3. Negative area with lens not in normal position (adjusted).
4. Area which is rendered unsharp (optically inferior zone).
5. Field which is covered by the lens desigend for the next larger format.

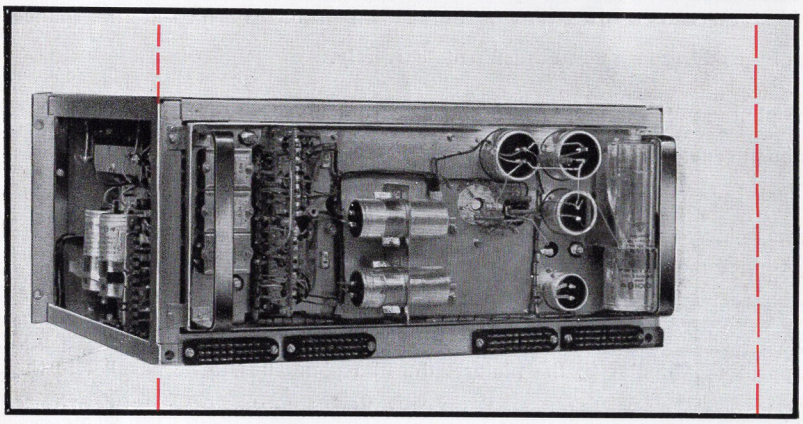
When using the adjustments of the camera, especially those which move the optical axis out of the center, it is essential to have a lens which has sufficient coverage, as otherwise unsharp corners or vignetting will occur. Every lens covers only a certain circular field, the diameter of which usually is not much longer than the diagonal of the negative size for which this lens is designed. In order to be able to use all camera adjustments to a maximum extent, it is therefore recommendable to use a lens which has sufficient covering power, i. e. which has a longer than normal focal length or a larger than normal angular field, or both. Usually, a lens for the next larger format as the one being used is sufficient (e. g. a wide angle or normal lens which is designed for a 5 × 7" negative should be used with a 4 × 5" camera). The new Schneider Symmar, on account of its large angular field, also is very suitable when using camera adjustments. True telephoto lenses are not recommendable.

EXAMPLES:



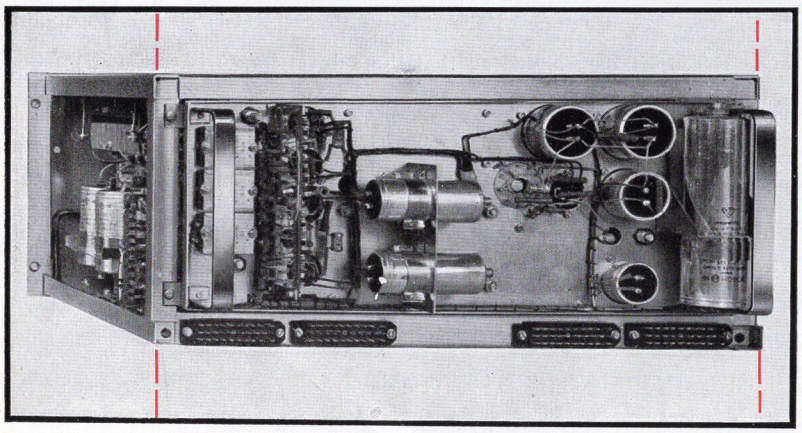
PLAIN FRONT VIEW OF A RECTANGULAR SUBJECT

The front of the subject is rendered rectangular, and thus the image shape is similar to the subject shape. This type of picture therefore is suitable for scale work, however, it gives no indication as to the three-dimensional nature of the subject.



COMBINED FRONT AND SIDE VIEW WITHOUT CAMERA ADJUSTMENTS:

This photograph clearly shows that the subject also extends in depth (three-dimensional).
Despite the fact that the perspective is pleasing, the picture is not suitable for taking measurements, since the ratio of length and width of the subject image does not correspond to that of the subject.



COMBINED FRONT AND SIDE VIEW WITH CAMERA ADJUSTMENTS:

By means of the camera technique described on the opposite page, the front plane of the subject is rendered as a rectangle and proportionally true, while one side of it is visible also. The advantages of the two aforementioned examples are combined.
Although in many instances the eye will tolerate subject distortion of diverging lines, it is quite frequently necessary to adhere strictly to the "parallel back rule" in technical and industrial photography.

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