

A METHOD OF MATCHING TOPOGRAPHIC SHEETS WITH A STEREOSCOPE

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THE problem of matching the contours and other data on topographic sheets has been made easier by using a stereoscope. The stereoscope method is a faster and more accurate method than by using dividers or tracing paper.

Figure 1 is a sketch of a simple attachment to fasten an Army Folding Type stereoscope to a drafting machine. An attachment can easily be made for other types of stereoscopes. If a large type is used it need not be attached, that is, if

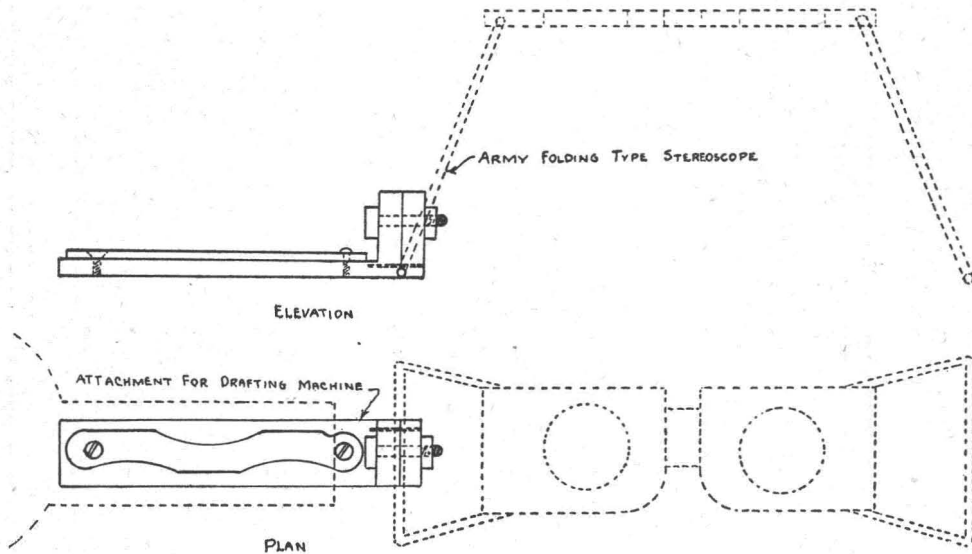


FIGURE 1

the field of view is large enough to view two or more sets of grid tick marks from the same position of the stereoscope.

Figure 2 shows the arrangement of the topographic sheets to be matched and the position of the stereoscope. The match lines of sheets "A" and "B" are placed approximately $2\frac{1}{2}$ inches apart with the grid tick marks along the match line directly opposite. Sheet "A" should be fastened down with thumb tacks or tape. The stereoscope is placed over the tick marks and sheet "B" moved until the tick mark fuses with the tick mark on sheet "A," when viewed through the stereoscope. When these tick marks and the match lines coincide or fuse, when viewed through the stereoscope, the sheets are then in the approximate position. The stereoscope is moved along the match lines to another set of tick marks, and checked. It may be found necessary to adjust sheet "B" slightly at this position of the stereoscope in order to clearly fuse this set of tick marks. This process is repeated until two or more tick marks are matched, after which sheet "B" is fastened down in a manner similar to sheet "A." By moving the stereoscope along the match lines of the two sheets, it will be noted that the borders of the sheets do not appear. When viewed through the stereoscope, contour lines, if matched, will appear to be continuous across the match lines, or from one sheet

to the other. It will also be noted that if the contours are not matched there will be a break at the match line. Thus, in order to match them, it is necessary to change the lines on either one or both of the sheets in the usual manner and thus make them appear to be continuous.

The writer has used the stereoscope for transferring penciled or inked data from contact prints to a mosaic, a method that might also be of interest. A mirror type stereoscope or one with a large field of view is the best for this type of

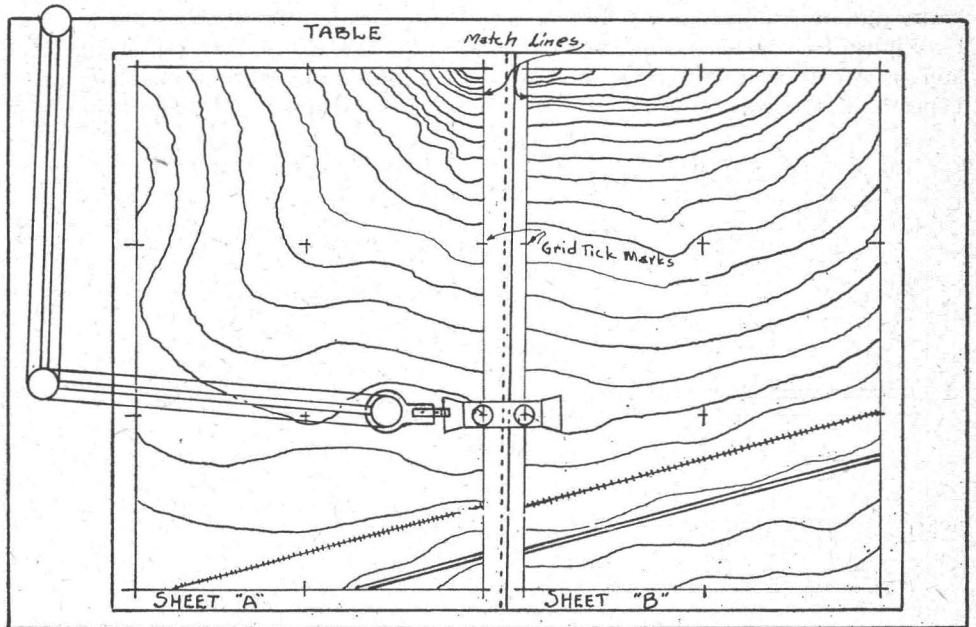


FIGURE 2

work. The method is as follows: The contact print, with the data marked on it, is placed under one side of the stereoscope and the mosaic under the other. The proper position under the stereoscope is obtained by shifting one or both of the pictures to match the photographic detail, or in the same manner as if a stereopair were to be viewed. Since the mosaic is generally at a different scale from the print, it will be found necessary to raise the print nearer the stereoscope by means of an adjustable table or some other satisfactory means. This places the print and the mosaic in two different planes under the stereoscope so as to compensate for the difference in the scale, and allow the photographic detail to be properly matched. Having matched the print and the mosaic under the stereoscope, it will be found that an image of the penciled or inked data will appear on the mosaic. To make the transfer, it is then necessary to trace the image of the data on the mosaic. Some relief will usually appear, however it is not necessary that any be seen, since the object is to make the transfer.

As a matter of comment, the writer found the article in Volume IX, No. 3 issue of PHOTOGRAMMETRIC ENGINEERING, by Mr. Louis Desjardins, "A Rapid Method of Drafting an Accurate Map from Vertical Aerial Photographs," very interesting, and believe the following suggestion will be found of value to any one using this method. By attaching the two ends of the threads to the tracing point of a photograph, the data taken from the contact print may be produced at a scale other than the scale of the contact print. It will be found that this idea also eliminates the traceofilm, or the traceofilm can be placed from the field of view and thus a clearer view of the photographs is obtained.