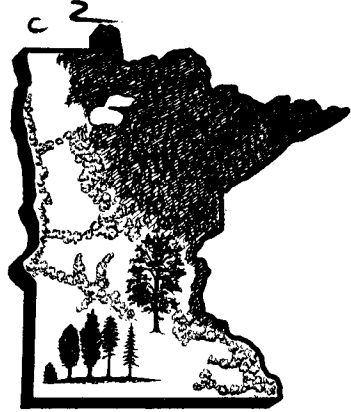
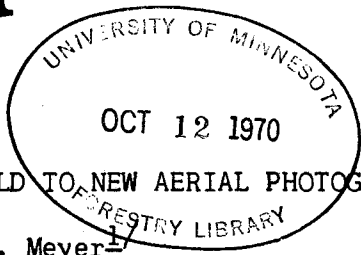


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MFRN 93



MINNESOTA FORESTRY NOTES

COPY 2



No. 93
July 15, 1960

TRANSFER OF POINTS FROM OLD TO NEW AERIAL PHOTOGRAPHS

Merle P. Meyer

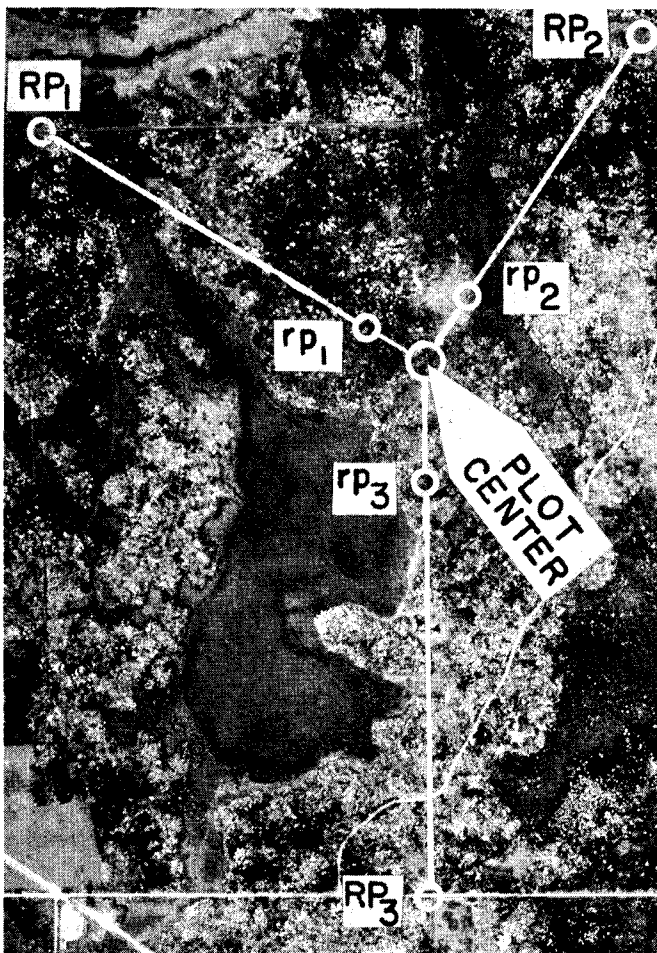
When new photography of a forest property is obtained, it is necessary to accurately transfer to it such points as section corners and CFI plot centers. Where the scale, film-filter-season of photography or the vegetation cover have not changed materially, transfer is not difficult. A drastic change in the vegetation surrounding the plot between times of photography, however, necessitates special means of point transfer. Figure 1 illustrates an example where the plot area was logged prior to the new photography. The procedure for plot relocation is as follows:

- Step 1: Select three or more primary reference points in the area surrounding the plot which can be accurately located on both photos. Pinprick and label. It is suggested that all such transfers be effected between the old and new photos which most nearly occupy the same geographic area (i.e., possible accuracy of transfer increases as overlap approaches 100%).
- Step 2: Rule lines from the primary reference points to the plot center on the old photo.
- Step 3: Stereoscopically, or with a magnifying glass, pick a secondary reference point on each reference line. Each point should be as near the plot center as possible and easily recognizable on both photos.
- Step 4: Pinprick the secondary reference points on the new photo.
- Step 5: Using the reference points picked, rule in the reference lines on the new photo. Their intersection defines the location of the plot center.

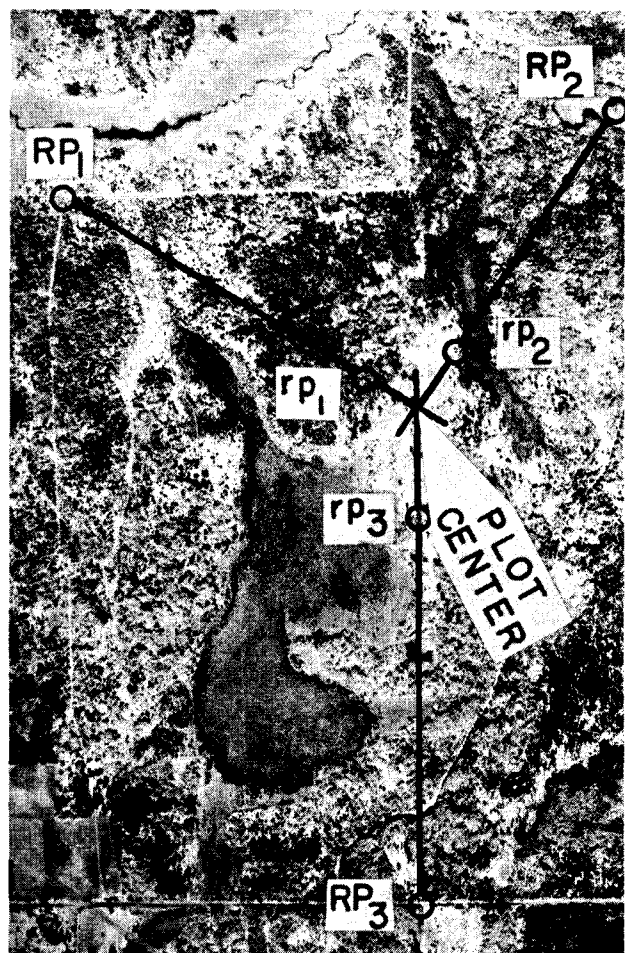
In the sample provided, the three primary reference points selected as common to both photos were a road intersection (RP₁), a point of land in a swamp (RP₂), and the intersection of a cutting line and a road (RP₃). The secondary reference points (rp₁, rp₂, and rp₃) are either individual trees or outstanding clumps of trees visible on both photos which fell on the reference lines of the old photo. For purposes of illustration, heavy inked lines and circles are used whereas, in actual practice, pinpricks and pencil lines are sufficient.

On occasion, due to lack of recognizable detail, the above procedure will not be applicable in its entirety. When this occurs, proceed in the following manner:

- Step 1 and 2: Same as above.
- Step 3: Rule lines between the primary reference points on both photos (RP₁ to RP₂, RP₂ to RP₃, etc.) as illustrated in Figure 2.
- Step 4: Using a good quality protractor on the old photo, determine the angles between the sides of the figure and the interior reference lines. In the example provided, angles a, b, and c were calculated.
- Step 5: By means of these angles, reconstruct the orientation of the reference lines on the new photo.



OLD PHOTO

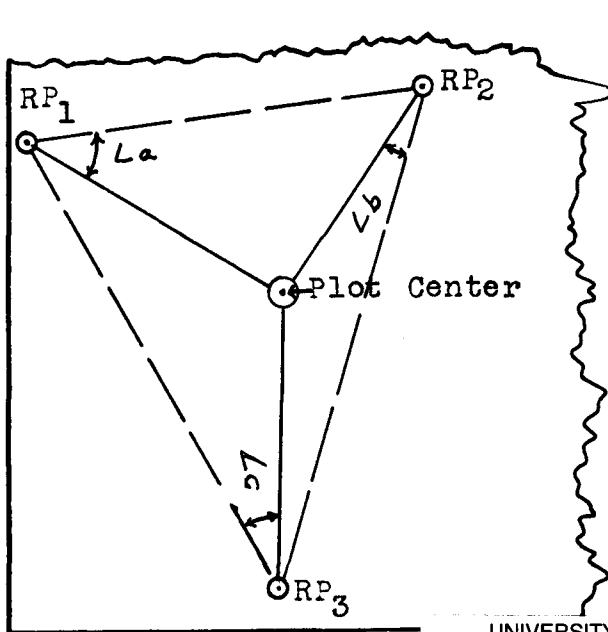


NEW PHOTO

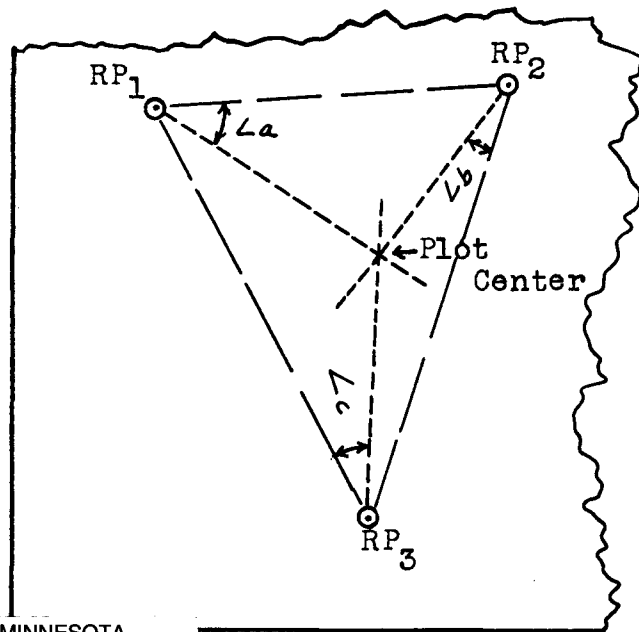
Old Photo

New Photo

Figure 1. Transfer of plot center when secondary reference points are available.



OLD PHOTO



NEW PHOTO

Old Photo

New Photo



Figure 2. Transfer of plot center when secondary reference points are not available.
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