

Photogrammetric Brief

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A Systematic Procedure for Stereocompilers

A SUBSTITUTE does not exist for an organized procedure which enables the compiler to complete a job in an efficient way. How many stereo models have been *reset* due to missing detail, a poor setup, or even a pencil chuck not being centered? I would not even take a guess at the number. What about the full models compiled when only a portion was required by a job boundary? Again, I make no guess. This is a very serious problem today in both private industry and government. It is caused by poor training procedures and a lack of sufficient checks and quality control.

With all the above in mind, and a few other points not covered in this paper, the American School of Photogrammetry designed a check list for the students taking the stereo-Compilation course at the school. The check list is in three parts: (1) setup; (2) planimetric detail; and (3) contours.

You can put this plan into operation today.

SETUP CHECK LIST

1. Set the principal-distance ring or micrometers to a value equal to the focal length of the camera used (*CFL*).
2. Refer to the job model index to check for possible match areas.
3. Be assured that all match areas have been transferred onto compilation sheet.
4. Acquire model prints with control and make sure that all horizontal control points are plotted on compilation sheet.
5. Refer to prints, model index, and compilation sheet for job-boundary.
6. Determine scale for plotting.
7. Place the correct gears into tracing table applicable to plotting scale.
8. Determine contour interval.
9. Orientate diapositives for good order of setup and compilation.
10. Rough clear.
11. Rough scale.
12. Rough level.
13. Check the centering of chuck.
14. Fine clear.

15. Fine level.
16. Fine scale.
17. The fine clearing, leveling, and scaling should be repeated until *all* errors are eliminated.
18. Plot the job-boundary.
19. Plot vertical points.
20. Plot pass points.
21. Start compilation after having setup checked by another compiler.

PLANIMETRY CHECK LIST—LARGE SCALE

1. Check pencil chuck.
2. Drainage—streams, shorelines.
3. Main, roads, secondary roads, railroads, utility poles, light poles, cross-country transmission towers, guard rails.
4. Divide model into *sections* for compilation by using *main roads, secondary roads* and *streams* as boundaries.
5. All buildings, patios, swimming pools, golf tees, greens, traps, football fields, basketball courts, tennis courts, hockey fields, etc.
6. Fences.
7. Walls.
8. Hedges.
9. Driveways.
10. Sidewalks, steps.
11. Feature lines.
12. Billboards.
13. Signs, mailboxes.
14. Culverts.
15. Manholes, drop-inlets, catch basins.
16. Fire hydrants.
17. Water and gas valves.
18. Tree lines.
19. Individual trees and bushes (label orchards).
20. Check the model for completion.
21. Have the model checked by another compiler (check for completion).

CONTOURS

1. Check the scale. Check all vertical points and make sure that a good index is taken.
2. General: Index contours are fifth contour from 0, and specific elevations of each depends on the contour interval. Index contours are accentuated in order to distinguish them from intermediate contours. This may be done by making the index contour lines *heavier*, or by using a red or brown pencil for intensification.

3. Find the highest and lowest points in the stereomodel.
4. Have a definite plan.
5. Decide either to contour from highest point to lowest or from lowest to highest, but do not begin at random in between.
6. Plot a reference point.
7. It is advisable to divide the model into sections for contouring by using roads, fences, streams, or a fine line drawn on the compilation sheet. (Do not draw one contour across a whole sheet).
8. When one contour is finished, start the next one near the same starting point of the previous contour. Due to imperfect balance of the illumination in the stereoscopic model, the floating dot will appear to rise above the ground when moved in one direction parallel to the baseline, and appear to dig when going in the opposite direction. This will not be noticed if the lights are adjusted properly.
9. Successive contours represent the terrain better than *jumping around*.
10. Only in exceptional cases (very steep terrain) may contours be interpolated and only with the permission of the supervisor.
11. Contours *never* cross each other.
12. Use contour expression (topographic license) to illustrate actual conditions of the ground, especially along streams and roads.
13. When possible, label contour values in order that numbers read *up hill*.
14. In difficult areas (dense vegetation, bad contrast areas) use contact prints (with stereoscope) as an aid in defining hypsography.
15. *Flat terrain*—Drop an adequate number of spot elevations to aid in plotting the contours. (Make sure that the contours are in agreement with spot elevations.)
16. In places where the ground is obscured by dense vegetation and an accurate solution of contouring cannot be traced, approximate contours should be drawn (brush clause). These contours *must* be dashed and an explanatory note given (usually "dense vegetation").
17. Problems caused by excessive contrast can usually be overcome by reducing the light intensity. Keep in mind that white or very bright objects will appear slightly higher or nearer to the eye than objects with a dark tone.
18. Spot elevations must be shown at all road intersections, on bridges, hill tops, saddle points, bottom of depressions, lakes, ponds, swamps, wide rivers, and flat areas.
19. Check that contours are in agreement with spot elevations.
20. Have your stereomodel checked for completeness of planimetric detail, accuracy of contours and spot elevations.
21. *National vertical accuracy standards*: Not more than ten percent of the elevations may be in error by more than one-half the contour interval.
22. Fill in model index.

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