

VERNAGTFERNER 1979, 1 : 10,000

(Orthophoto map)

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For the production of the orthophoto map of Vernagtferner 1979, scale 1:10,000, photographs from the flight "Hintereisferner 1979" were used. Two printing originals were prepared, the first for the contour lines (at intervals of 20m) and planimetric representation (map frame, grid sections, survey points, map lettering and technical installations), and the second for the orthophoto. The photographs were found to be very suitable for differential rectification. Four of them had to be rectified in order to cover the whole area of the Vernagt- and Guslarferner. The aerial photographs were taken on 14 August, 1979 at midday. Their mean image scale was 1:20,000 (focal length 153mm).

The stereoscopic evaluation of nine stereopairs was carried out with the analytical plotter Planicom C-100, and the differential rectification with the orthoprojector Orthocomp Z2. The Planicom C-100 and the Orthocomp Z2 (both made by Zeiss/West Germany) are connected to computers (in both cases a Hewlett Packard 1000).

The reference data for the computation of the profiles (40 m intervals) for the differential rectification were recorded simultaneously with the one-line plotting of the contour lines. A slit aperture of 0.2mm x 4.0mm with a scanning speed of 20mm/sec was used for the projection by the orthoprojector. The four orthophotos were of good quality, and each of the four contributed nearly the same area to the map face.

The sheet assembly of the four orthophotos was carried out by a photo-technical procedure. A complete picture was made by projecting all four orthophotos adjacent to each other, so that the four images coincided along irregular, curved boundaries. A screening was done at the same time as the above projection. The print was done in black for the two copies on offset paper and art paper. The processes of reproduction reduced the contrast of the images considerably - a unicolour printed orthophoto cannot replace a photographic contact print.

Different methods for obtaining contour lines were compared for efficiency and quality under the following conditions:

mean image scale 1:20,000
 mean slope 23°
 plotting scale 1:10,000
 contour interval 20 m
 plotter Planicomp C-100 with hand wheel
 operation

<u>Method</u>	<u>time/area</u>	<u>Effectiveness</u>
1. one-line plotted contours	2.0 h/km ²	faithful reproduction of the topography, regardless of terrain type
2. derived contours: a) from a digitalized grid with a 40 m grid width	0.7 h/km ²	only faithful reproduction of the topography in gradually changing terrain
b) same as a) with additional recording of break lines	2.4 h/km ²	limited reproduction of the topography in steep, rugged terrain, but otherwise faithful reproduction

The one-line plotted contours were used for the orthophotomap.