

GEPATSCHFERNER 1971, 1 : 10,000

(Aerial/terrestrial photogrammetric map)

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The tongue of the Gepatschferner in the Oetztal Alps, Tyrol (Austria) was first surveyed in 1886 and 1896, and earlier surveys of the whole glacier took place in 1922, 1940 and 1953.

Survey 1971

The new map "Gepatschferner 1971", scale 1:10,000 is based mainly on a photogrammetric aerial survey. The photo flight was carried out with a normal angle camera in August 1971. Coverage of the area of the Gepatschferner involved the production of five photo strips representing 27 photogrammetric models (photo scale was about 1:15,000). In addition, the southern Italian part of the glacier was surveyed by means of terrestrial photogrammetry in 1973.

The scale of the photogrammetric stereoplotting was 1:7,500.

Cartography

The aim of the map was to give a detailed representation of the glacier, the ice-free land, and the exact limit of the active glacier. The areas of ice, firn and old snow are separated by the (temporary) firn edge and the old snow line.

The colour coding on the map is as follows:

- (1) Black lines: planimetric representation and contours on rocky areas
- (2) Blue lines: contours on glacierized areas, limit of the active glacier, hydrographic features
- (3) Blue-green lines: crevasses
- (4) Grey lines: firn line and firn edge, contours on debris-covered areas
- (5) Brown lines: contours on vegetation-covered areas
- (6) Green tint: vegetation
- (7) Grey tint: rocky areas.

The vertical interval of the contour lines is 10m.

Glaciological results

In 1971, the surface area of the Gepatschferner (northern part) was 17.782km^2 and the ratio S_c/S_a was 1.29 (corresponding to an AAR of 0.56). The southern part of the glacier had a surface area of 3.842km^2 in 1973. In 1971, the mean altitude of the firn line - as an approximation of the equilibrium line - was found to be 3055m a.s.l. The mean changes in the thickness of the Gepatschferner for the periods 1886 - 1896 - 1922 - 1940 - 1953 are given in the table on area, volume and thickness changes; corresponding data for the period 1953-71 can be found in PSFG Vol. III.

LITERATURE

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