Mountain Cartography



Jasper National Park, 1935 (Icefields Parkway first constructed 1931-41)



Is it a map?or a 2.5D graphic

Special attraction and challenges in mountain cartography

Which relief techniques: hachures, contours, hypsometric tints, shading ?

- Density of hachures and contours lines
- Contrast with colour tint layers, and shading (SW slopes)
- Ridges running NW-SE (equal shading / illumination)
- Issues of colour contrast and density of human features in valleys

2D map v 2.5D perspective (visual but no steady scale)



Mountains and cartography







Brief history of mountain mapping

Early mapping pre-1875

Photo-topography in Canada 1875-1950

Federal mapping 1950-1995

Private sector 1995-present

Planetary mapping 1645-present

Brief history of mountain cartography: Early mapping pre-1875



Switzerland, 1737: mountain mapping before surveying

Dufour hachure maps of Switzerland, 1845-65



http://map.geodataviewer.admin.ch/geodatenviewer.php

Bernina Pass, Switzerland 1877



http://map.geodataviewer.admin.ch/geodatenviewer.php



Canada (Selkirks) 1885, part of railway map



Early mapping: Photo-topography, 1885-1950

A technique introduced from France by the surveyor-general (Edouard Deville). Surveyors would place the camera on a mountain peak, point the lens at the horizon and take panoramic shots of the surrounding peaks. Surveyors took photos in the short summer season, then would complete their calculations and mapping in their offices during the winter. **This allowed larger areas to be surveyed more accurately**, in less time, and at one-third the cost of conventional surveying. It later gave way to aerial photogrammetry.





← Founder: Alpine Club of Canada



Early full colour map: Canadian Rocky Mountain

Mapped to entice climbers from Europe (20 maps in the series, Banff to Lake Louise)



Figure 3: Forty-Mile Creek 1890. Topographical Surveys Branch, Department of the Interior, Ottawa. Triangulation by W.S. Drewry, D.L.S. Topography by J.J. McArthur, D.L.S. 1:40,000

Mapping before aerial photography: Selkirk Range, 1906 (A.O. Wheeler) UNBC special collections, contours 100'



BC-AB boundary commission 1913-21

INTERPROVINCIAL BOUNDARY COMMISSION

BOUNDARY BETWEEN ALBERTA AND BRFTISH COLUMBIA

INCEX SHEET





sample map from AB-BC boundary commission map series: Mt. Robson, 1923





Robson Glacier, Rearguard Mountain and Berg Glacier / Lake – August 2011

