#### Ontario, 1:125,000 ~1970 Manual shading (airbrush)



Swiss shading experts imported to teach Canadian cartographers





## Advantages

- show detail / character of landscape
- Highly visual, continuous in appearance
- Effective background (context) for other map layers

# Disadvantages

- required artistic creation with pencil or air brush
- •costly (100 hours / square foot) .. often poorly rendered
- some slopes can be too dark (SE slopes)
- no quantitative information e.g. elevations



#### BC aeronautical map, 1:500,000 - contours, tints, shading and spot heights



All 4 methods needed for safe aviation - visual and quantitative

### Relief humour: ③ Pie chart for shaded relief / hillshading



### 7. Tanaka 'illuminated' contours

-pioneered in the 1950s by Kitiro Tanaka applying shading theory to contours. -NW light source, white and black lines, variable width





### Advantages

- visual and quantitative; unlike shading, it did not require artistic ability Disadvantages

Requires a non-white background; visually exaggerates terracing



Stronger figure, weaker ground versus shaded relief



## 9. '3D' perspectives (2.5D, not true 3D)

Advantage: the most visual portrayal of landscape / artistic Disadvantages: time-consuming (pre-computers); no consistent scale



Canada example by Eckhard Ziegler



perspectives: Ski and tourism maps



http://www.informationdesigned.com/html/maps/louise.html (Eckhard Zeidler)



'Interesting' local example ... sugar-loafs meet skidoos and hobbits



# 10. 'true' 3D relief map (Plastic raised)



Truly 3D - takes up 3D space ...

### 3D relief models (wood):



The world's largest map: Challenger map (1947-54) 25 x 25 m 1:50,000



Challenger map 'tile' displayed during 2010 Vancouver Winter Olympics for RCMP security operations. Otherwise, the map sits in a warehouse stored in sections



https://challengermap.ca

### Summary of common relief depiction methods

TECHNIQUE	COMPONENT	FEATURES
Sugar loafs	shape	Simple, stylistic
Hachures	slope	much ink, no heights
Spot Heights	elevation	sporadic info
Contours	elevation	Heights, 'abstract '
Hyps. tints	elevation	Colour layers
Shaded relief	aspect	Visual, artistic
Tanaka	aspect	visual but 'noisy'
Slope maps	slope	uniform slope areas
3D perspectives	shape	visual, no fixed scale
Physical models	all	true 3D - takes up space