Abstract for the
ICA Mountain Cartography Workshop
Bohinj, Slovenia
March 30 – April 1, 2006

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Handmade Relief Models

A relief model is a plastic, three dimensional representation of a landscape section. It is also a very graphic way to depict mountains. Models serve schools, communities, exhibitions, museums, travel agencies, visitor centres, publicly accessible buildings and the military as a realistic copy of the earth's surface. Some occupational groups, e.g. geologists, use such models investigate and examine the morphology of landscapes. Many of these relief models are, after all, works of art and are therefore outstandingly precious and of great value. Often, locations where the original models are situated are unknown. Some are stored in shelters identified as cultural assets, some are held in private property and others are simply undiscoverable.

The construction of relief models has a long tradition in Switzerland. Masters of the construction of alpine relief models are, among others, *Pfyffer, Meili, Imfeld, Becker, Simon, Reichlin* and *Imhof*. The culmination of relief modelling was between 1870 and 1914, just after Switzerland was completely mapped. Today, *Toni Mair* remains the only professional in the domain of handmade reliefs in Switzerland. In contrast, private companies commercially produce computer-generated relief models by applying different techniques. These models, however, do not yet achieve the quality professional handmade relief models accomplish.

Different possibilities exist in order to build a handmade relief model. The following workflow primarily results in an unpainted model (according to *Imhof*):

Transfusion of the map's contour lines to wallboard plates. Sawing of the plates following the contour lines, accurately positioning and fixing the wallboards to a stack to obtain a rough approximation of a negative terrain model. Smoothing the model by filling it with plaster to give it a basic form (use of lubricant). Casting a plaster in a 3-5 cm thick layer after the wooden parts are removed from the solidified plaster.

The positive mold forms the blank shape of the model. The next step is accurate modelling for which a relief constructor uses aerial photos, pictures, drawings and sketches as an aid.
Shaping the plaster model requires many years of experience and manual skill.

The paint of a plaster model affects the appearance. The colour should not glitter and should be applied as thin and evenly as possible so that small forms like scree or rock structures still appear clearly. The accuracy of the forms and the information content depend on the scale of the model. Alpine forms, particularly models of large scale, should not be exaggerated. Each exaggeration is a falsification and results in unreal and unnatural slopes.

It is the author's hope that the knowledge and ability of the handcraft of a relief model constructor will be conserved.