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## New legitimacy law

On 1st January 1978 the **new legitimacy law** will come into force, entailing also various amendments to the Federal Act of 29th September 1952 concerning the Acquisition and Loss of Swiss Nationality.

As hitherto, a legitimate child will acquire the Swiss nationality of its father and an illegitimate child the Swiss nationality of its mother. A child will still acquire Swiss nationality through the subsequent marriage of its Swiss father to its foreign mother, but only if it is still a minor at the time of that marriage. On the other hand, the provision whereby the child of a Swiss mother loses its Swiss nationality through its mother's marriage to its foreign father will be rescinded. The right to acquire Swiss nationality through acknowledgment or through a paternity adjudication will be abolished. Except in the case of legitimation, the illegitimate child of a foreign mother will only be able to acquire its father's Swiss nationality if the competent authority changes its surname to that of its Swiss father because it is being brought up under his parental authority.

### Important innovation

The legitimate child of a foreign father and a Swiss mother will acquire Swiss nationality at birth if its mother is Swiss by birth and its parents are domiciled in Switzerland at the time of the child's birth.

Moreover, there is a **transitional provision** under which children who fulfilled these conditions at birth and who have not yet reached the age of 22 by 1st January 1978 will be able to apply to the competent authorities of the relevant canton of origin during the year 1978 for recognition as Swiss citizens.

## Federal Ballots

If you wish to participate in a federal election or other federal ballot in Switzerland, apply to your Swiss Embassy or Consulate, either in writing or in person. You need only apply once; your application will remain valid for as long as you do not take

up residence in Switzerland.  
It would be a good idea to apply today.

### Federal Ballots in 1978

26th February  
28th May  
24th September  
3rd December

## Adoption of foreign children

### Possibility for a foreign child to acquire Swiss nationality by virtue of its adoption

The following paragraphs are intended as a reminder of the detailed article on this subject which appeared in the Official Communications of December 1976.

On 1st April 1973 new legal provisions concerning adoption came into force in Switzerland. Foreign children adopted by Swiss abroad can acquire Swiss nationality if certain conditions are fulfilled and certain essential formalities observed.

In principle, any adoption carried out abroad can be made subject to the Swiss adoption law if a request to that effect is submitted to the relevant canton of origin. The child will then become Swiss if it was a minor at the time of the adoption. **The application must be made by 31st March 1978.**

Our compatriots can apply to the Federal Justice Division, CH-3003 Berne or to their Swiss Embassy or Consulate for all the necessary information. In particular, the Justice Division issued guidelines in our three official languages on 28th May 1975 and our missions abroad have copies of these.

## The Swiss National Map

*What is the origin of the official map of Switzerland, how are they surveyed and reproduced? The following report gives a short answer to these questions.*

### Historical review

Before 1822, Swiss cartography was mainly a private domain. Until the beginning of the 18th century, the topographic representations on maps were mostly a combination of bird's-eye and terrestrial views. Occasionally, the drawings on a map were based on a network of triangulation points. Examples of such maps are the map of the Canton of Zurich by Hans Conrad Gyger, or the map of the Principality of Neuchâtel, surveyed by J.-F. Osterwald.

In 1822 the federal Diet resolved that «... the administration of topographic surveying is an integral part of the duties administered to the Quartermaster General ...». G. H. Dufour, Quartermaster-General since 1832, received the authorization in 1837 to found the Swiss Federal Topographic Office in Geneva with two engineers and two

Measuring vertical angles with a theodolite





Topographical details were surveyed using the planetable



Areal photos are taken

draftsmen. Under Dufour's leadership, the still admirable «Topographic Map of Switzerland» in the scale of 1:100 000 was completed in 1864.

This map, a copper engraving, consists of 25 sheets and is the first geometrically exact representation of our country. Assuming northwest lighting, the topography is shown by using hatchures. This so-called Dufour Map, originally only in one color, later appeared with color tones for forests, rivers and lakes. This map was completely replaced by the new Swiss National Map in the scale 1:100 000 in 1964.

In 1865, the Topographic Office was transferred from Geneva to Berne. As soon as the Dufour Map was finished, more detailed maps on a larger scale were being demanded, not only by railroad and road construction companies and the growing tourist industry, but also by the army. Based on a federal law in 1868, the Topographic Office revised and published the original surveys which were used for the Dufour Map. This new map, finished in 1901, consists of 462 sheets in the scale of 1:25 000 for the central plateau and the Jura, and 142 sheets in the scale of 1:50 000 for the Alpine region. This «Topographic Atlas of Switzerland», called the «Siegfried Map» after Dufour's successor, represents the topographic forms with contour lines.

The time between 1900 and 1930 is characterized by a strong campaign for geodetic surveying. The geodetic groundwork from Dufour's time was no longer satisfactory to the scientific demands and was replaced by that of the Swiss Geodetic Commission, founded in 1861. The measurements by this Commission, however, did not cover all of Switzerland; furthermore, the number of triangulation points had to be increased in order to serve as a basis for the new maps. Despite their excellent geographic qualities,

the Dufour and Siegfried Maps could no longer meet the demand for exactness. On June 21, 1935, the Swiss Confederation ratified the law sanctioning the replacement of the old maps with the new «Swiss National Map» in the scales of 1:25 000, 1:50 000, 1:100 000, 1:200 000, 1:500 000 and 1:1 000 000.

### The new Swiss National Map

#### The geodetic surveys

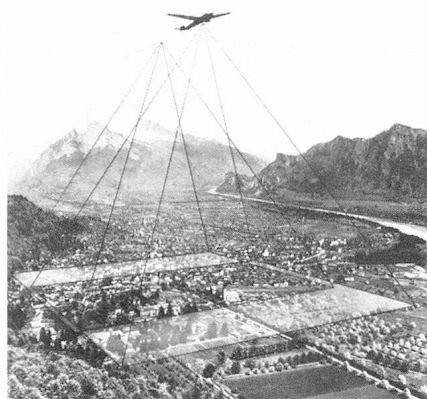
The network of triangulation points, the system of projection and the levelling network constitute the so-called geodetic basis of our National Maps. The triangulation network consists of about 73 000 fixed points, which are marked with granite stones or bronze rivets. Their co-ordinates were determined by measuring vertical angles with a theodolite and by trigonometric calculations. The scale of the network was determined by the three bases Aarberg (2400.

1112 m), Weinfelden (2540. 3353 m) and Bellinzona (3200. 4084 m). The measurements (with a precision of 1 mm!) were made in 1880/81 with 4-m stadia rods. An orthomorphic, oblique cylindrical projection transforms the measurements made on the round earth into the flat map. The Y-axis of the rectangular plane co-ordinates is the projection of the tangent great circle between the sphere and cylinder, and the X-axis is the meridian passing through Berne. The intersection of the great circle and the meridian is the origin of the co-ordinates, whose geographic co-ordinates are 7° 26' 22.50" longitude E and 46° 57' 08.66" latitude N; the kilometric co-ordinates are Y = 600,000 km and X = 200,000 km.

The Swiss Federal Levelling Net gives the precise height (precision = 0.5 mm/km) of a great number of fixed points. The height of the reference point «Pierre du Niton» is 373,600 m above sea level. This is a bronze bench mark on an erratic block in Geneva harbor; its height was determined by levelling from mean sea level in the port of Marseille.

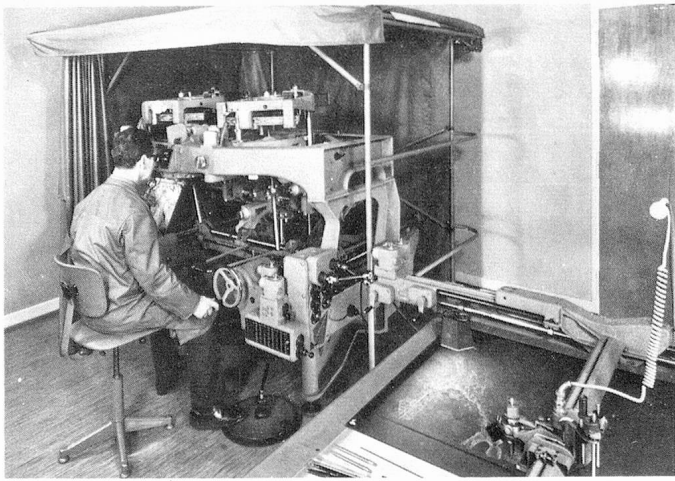
The height of many points difficult or impossible to reach by levelling was determined by vertical angle measurements (theodolite) and trigonometric calculations. This geodetic basis gives a homogeneous structure to all the detailed measurements.

The pair of overlapping photos can be stereoscopically interpreted

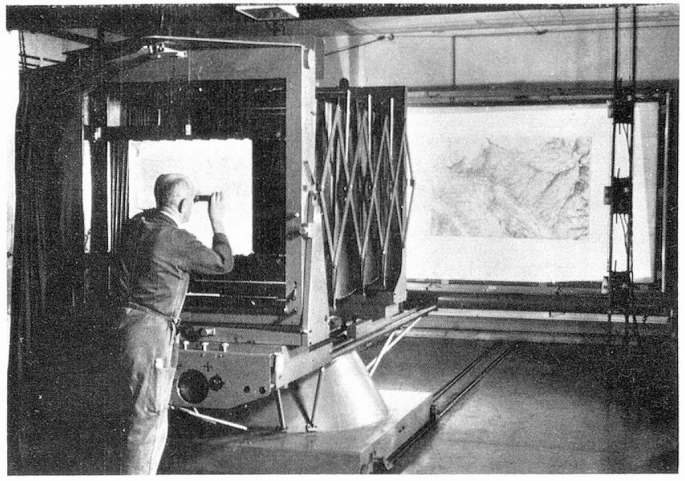


### Topographic survey

Until about 1924, all of the topographical details represented on a map were surveyed using the planetable. In 1924, stereophotogrammetry came into use in surveying, whereby terrestrial photographs were first used. Today the area to be mapped is overflown and a series of aerial photos is taken (original size: 23 × 23 cm). Each photo overlaps the next by about 80%, and the pair



Most precise cameras and autographs are essential



70 different photographic operations for a single sheet

of overlapping photos can be stereoscopically interpreted.

Photogrammetry is one of the most important techniques in topography; the most precise cameras and autographs are essential.

As the work on the present National Maps began (around 1930), the Alps and pre-Alps were surveyed in the scale of 1:50 000 using terrestrial photogrammetry and the planetable. Besides its own photographs, the Topographical Survey of Switzerland also used cadastral plans of private geometers (scale: 1:5000 and 1:10000) in compiling the sheets in the scale of 1:25 000.

All of the topographic elements must first be edited and it must be decided what to include in the map: networks of roads, vegetation, nomenclature, etc. Then the topographic elements are photographically copied into a glass engraving plate, where the technical reproduction into a legible and graphically attractive map begins.

### Reproduction

Today the maps are no longer engraved on copper or stone as was the case during Dufour's or Siegfried's time, or even during the 1930's when the Swiss National Map was begun. Since 1953 the topographic elements are copied into glass scribing plates which have a specially prepared scribing-coat. A separate original must be made for each color on a map. The relief shading is done with an air-brush into paper-foil. As a guide, the foil has a light-grey silver bromide copy of the contour lines, rocks and water.

A record of the names is established in the course of the cadastral survey. In cooperation with the Cantonal Nomenclature Commission, the Topographical Survey of Switzerland decides on the choice spelling

of place names. These names are printed on film and placed on a glass-plate according to the topographer's instructions.

During the course of the cartographic work, the sheet is controlled 2 times to eliminate errors or to possibly correct flaws in the graphic appearance of certain areas. The next step is the production of the aluminium offset printing plates. The preparation of a single sheet from editing to the offset plates requires about 70 different photographic operations; all of the copies except the 2 control copies are also copied onto glass-plates.

The maps are printed by modern 2- and 4-color offset printing machines. The printing of several colors in rapid succession assures

optimum juxtaposition of the various colors.

There are 8 colors for maps in the scale 1:25 000, 6 for 1:50 000 and 10 colors are printed on maps in the scale of 1:100 000. It is important to mention here that the smaller scales, i.e. 1:50 000, 1:100 000 and smaller, are not just photographic reductions of the 1:25 000 map. This would lead to an overburdening of the map with small details, rendering the map illegible. Therefore, each map is edited separately (according to different criteria) and adapted to its respective scale. As the scale becomes smaller, the map content is increasingly generalized. For example, several houses become a single house, and less important elements are omitted while important characteristic elements are accentuated. This graphic selection process is called generalization.

1:25 000 The best one for hiking



### Revision of the maps

Essential to a set of maps is the constant revision of the content. For the Swiss National Map, different areas are systematically revised in a 6-year cycle. The revision begins with new aerial photographs for photogrammetric evaluation for the 1:25 000 map. If anything remains unclear, or if something cannot be identified, a reconnaissance of the area is made. The revision is then carried from the 1:25 000 map throughout the smaller scales (1:50 000, 1:100 000, 1:200 000, 1:300 000, 1:500 000). The extensive revision of each map again leads to new glass-plates, printing-plates and finally to the new, revised map. According to this systematic plan of revision, no map should be older than 6-7 years.

*Topographical Survey of Switzerland  
CH-3084 Wabern*

Illustrated with T+F's authorization.