

SWISS SECTION



Past, present and future on the Albula Line

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On 11-12 September, Swiss Section members and guests got a close-up look at the past of the Rhaetian Railway (RhB) at the Albula Museum in Bergün, its present location among the multiple loops of the line below Preda and its future at the north-west portal of the new Albula tunnel.

BUILT FOR AFFLUENT TOURISTS

Siegfried Ritter led the English half of the museum tour. Built originally as a military arsenal, the Albula Museum showcases the men who built the RhB, including the Dutchman Willem Jan Holsboer (1834-1898), who became director of a London bank at age 30 but in 1867 brought his young wife to Davos for treatment of tuberculosis. He stayed on in Davos to lead its development as a health resort and build the Landquart-Davos line, which was the start of the Rhaetian Railway.

We learned about early engineers' search for catenary insulators: porcelain was sturdier, but glass resisted temperature extremes better. Posters from 1937 offered special cheap fares to locals to ride on the RhB, which had been built with affluent tourists in mind. We also saw equipment from a Swiss Army hospital train — with 27 beds per carriage and an operating room — that ran until 1955. We lingered over the extensive 1:45 model railway that Bernhard Tarnutzer has been building since the 1960s and still represents that period.

EAVESDROPPING IN THE DINER

The museum's cellar is normally closed to visitors. We discovered local interlocking panels recently replaced by RhB's Landquart control centre. We also saw remains of a restaurant car that RhB bought during World War II from a Berlin builder; the Germans had secretly fitted microphones to eavesdrop on table conversations.



RhB engineers opted for stone bridges after the 1891 collapse of an iron-and-steel bridge near Basel claimed 74 lives. Builders typically re-used wooden falsework (framing) like this for several stone bridges. After 110 years of use and reasonable maintenance, the Albula line's bridges are still going strong under ever-higher loads and speeds.
Albula Museum; photo by Wim Coenraad.



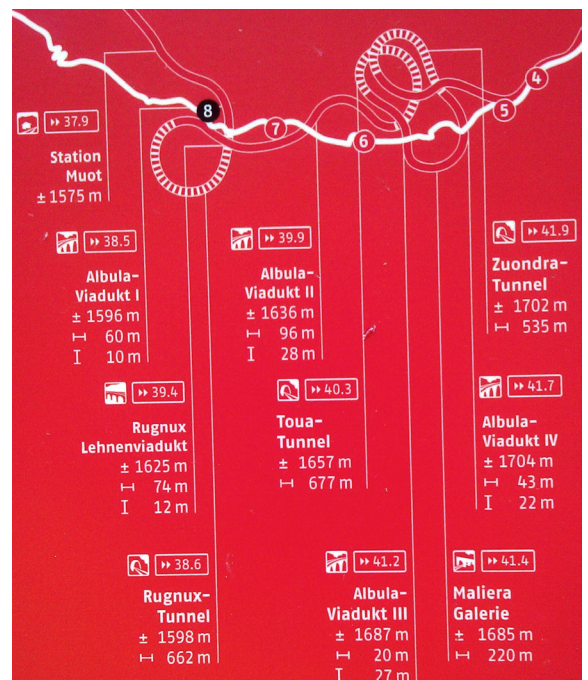
The Albula Museum holds the only machine in Switzerland that can still print cardboard Edmondson-type tickets.

After a night's sleep in Bergün's silence, on Saturday morning most of us walked up to Preda. Event organiser Marco Lüthi of RhB forwarded our luggage by car. Between the two towns, the railway winds through a number of loops to gain 417 metres in altitude.

HELICAL AND SPIRAL TUNNELS

We came upon a sign that distinguished the *helical* tunnel, which reverses a train's direction, and the *spiral* tunnel, in which a train does a full circle and continues in its initial direction. An invention of Swiss engineer Achilles Thommen, such tunnels helped gain altitude during the building of Austria's Brenner railway in 1864-1867 and Switzerland's Gotthard railway in 1872-1882.

A rack railway between Bergün and Preda would have limited speeds and train lengths. RhB therefore opted for an adhesion railway with a maximum grade of 3.5 per cent. Other design criteria included protecting the line from falling rocks and avalanches and minimising the time passengers spent in tunnels.



German and English signs along our footpath told the story of the Bergün-Preda line.
Photo: George Raymond.



Ubiquitous Charles Lung of Hong Kong witnesses two of the line's four crossings of the valley below Preda.
Photo: Rolf Seiffert.



Among the loops below Preda.
Photo: Rolf Seiffert.



Below Preda, RhB trains change valley sides four times within 4 km.
Photo: Christian Lüthi.



A memorable lunch above Preda station.
Photo: Charles Lung.

The line's designers (notably Friedrich Hennings and Robert Moser) decided to lengthen the route between Bergün and Preda artificially from six to 12.5 km with nine viaducts and three helical and two spiral tunnels. Armed only with theodolites and measuring tapes, engineers guided the workers who built the tunnels in 1901-1902 to within a few centimetres of plan. In the tunnel above Muot, men toiled without modern rubber boots in knee-deep, 4° C water that leaked into the tunnel from an underground stream. Today, a door at the tunnel's lower end opens for trains and keeps water in the stream from freezing.

On the tunnels and viaducts of a 4 km stretch below Preda, trains crossed the valley — and passed under or over our footpath — four times.

A SAFER ALBULA TUNNEL

After 110 years in service, the arch and drainage system of the 5,860-metre Albula Tunnel are ageing. It urgently needs renewal. Instead of refurbishing the existing single-track bore, RhB opted to build a new single-track tunnel about 30 metres to the north-east.

In an emergency, 12 cross tunnels will enable passengers to escape into the old tunnel, which will become a safety tunnel with lighting, a communication system and ventilation. This and three cross tunnels will be accessible to road vehicles.

The new Albula tunnel is planned to enter service in 2020 and the safety tunnel a year later. The project, including rebuilding Preda and Spinas stations, is priced at 400 million Swiss francs (€365 million).

MORE SWISS VISITS COMING

Coming events of the IRSE Swiss Section include a visit to Lausanne marshalling yard in November 2015 and to the Gonzen mining railway and Zurich Airport's cable-powered people mover in 2016.