

## 2.b.5 History of the Rhaetian Railway

The origins of the Rhaetian Railway go back to 1888, when the “Landquart-Davos Narrow-Gauge Railway Company” was established in Davos. The foundation of this enterprise had been preceded by years of arguments about whether a rail transport system for Graubünden should take the form of standard-gauge transit lines or narrow-gauge valley lines. The narrow-gauge railway between Landquart and Davos was opened in 1889/90. After a further six years or so of heated discussions, the remaining lines making up the main network of the Rhaetian Railway were finally put into service within just 18 years (between 1896 and 1914). This period also saw the inauguration of the three legally autonomous lines in the Mesocco, Poschiavo (Bernina line) and Schanfigg valleys, which were later to be incorporated into the Rhaetian Railway network. Today, the Rhaetian Railway offers a wide range of passenger and freight services, including high-capacity car transport facilities on the Vereina line since 1999.

### Transit or valley lines?

The history of the Rhaetian Railway is intimately linked with the special topographical features of Graubünden, Switzerland’s largest canton. Graubünden had always managed to turn its central position in the heart of the Alps to its advantage. With the emergence of the railway as a new means of transport in the 1840s, the question of the canton’s importance for transport policy was seen in an entirely new light. Enormous efforts were made to ensure that the new European alpine rail transit routes would not bypass the territory of Graubünden – but to no avail. The completion of the Brenner line (1876) – and even more so the opening of the lines through the Gotthard (1882) and the Arlberg (1884) – had direct economic repercussions in Graubünden, particularly in the traditional transit valleys such as Schams and Rheinwald (Splügen Pass and San Bernardino route) and Oberhalbstein (Julier route, cf. 2.b.3). In just 20 years (from 1880 to 1900), the population of these valleys declined by almost 14 %, whereas Switzerland’s total population increased by 17 %!

Graubünden’s unceasing efforts to secure a link to the international railway system had dire consequences in the sense that vital resources were tied up over the long term. Not only was a great deal of time and money invested in projects like the Splügen, Septimer, Greina and Lukmanier lines, none of which came to fruition; the fact is that this preoccupation with the idea of a great alternative alpine transit route through Graubünden also delayed the development of a rail network built around so-called valley lines within the canton. Most major European railway lines were laid out with a “normal” track width, or gauge, of 1435 mm, the curve radius was seldom less than 190 m and the maximum gradient was 25 ‰ (Semmeringbahn) or 27 ‰ (Gotthardbahn). By their very nature, such routing parameters were badly suited to the construction of a comprehensive rail network in a mountainous canton; on the Bernina line, for example, the minimum radius is 45 m and there are many sections with a gradient of 70 ‰. But anyone in Graubünden who favoured a narrow-gauge railway with a track



Landquart-Davos line > A passenger train on the Landquart–Davos narrow gauge line passing through the narrow gorge (Klus) at the entrance to the Prättigau valley. Photograph from 1891. Rhaetian Railway



Willem Jan Holsboer (1834–1898) > Energetic initiator and promoter of railway building in Graubünden, about 1885. Rhaetian Railway

width of only 1,000 mm and parameters better adapted to mountainous terrain was accused by the political establishment of undermining the efforts to build international lines on the canton's territory. Nor was the considerably lower cost of a narrow-gauge railway an argument that counted for much in those days. Small-mindedness and parochial attitudes in some quarters also contributed to the deadlock: in the capital, Chur, for instance, which already had a rail link to cities in Northern Switzerland such as St. Gallen (since 1858) and Zurich (since 1859), people were still adamantly opposed to extending the standard-gauge line to Thusis and the Engadin in the 1880s for fear of losing the monopoly position as the terminus of a national railway!

#### **Willem Jan Holsboer – Graubünden's Alfred Escher**

A solution to the canton's railway problem was found eventually, thanks to various far-sighted local people including the future Federal Councillor Simon Bavier, the lawyer Sebastian Hunger and the engineers Robert Moser and Martin Versell. However, the most important contribution was made by a Dutchman, Willem Jan Holsboer. A former captain, and vice president of an international bank, Holsboer first came to Davos with his wife in 1867 for a cure. After his wife died the same year, he decided to make his home in Davos, where he would later play a major role in turning the village into a world-famous resort. Holsboer realised that a connection to the greater European railway network was essential for Davos' future development. In the mid-1880s, together with Peter Bühler, a member of the Swiss parliament, he presented a project for a narrow-gauge railway from

Landquart to Davos. The budget of 5 million Swiss Francs for this project was to be less than half the estimated cost of the standard-gauge railway mooted ten years earlier, on condition that the municipalities concerned undertook to supply the land and all the necessary building materials – gravel, sand, stones and wood – free of charge. After a sizable majority of the people of the Prättigau Valley and District of Davos voted in favour of the project, the Landquart–Davos Narrow-Gauge Railway Company was founded on 7th February 1888 with its registered office in Davos; this company was the forerunner of today's Rhaetian Railway. The section as far as Klosters was put into operation in 1889 and Davos, the (provisional) terminus, was reached in the summer of 1890.

#### **From the "Landquart-Davos Narrow-Gauge Railway" to the "Rhaetian Railway"**

Alongside all this, the discussions about the "right" type of technical railway equipment for Graubünden were continuing at the political level and among the population. At the end of 1889, the people of Graubünden agreed to a cantonal contribution for a standard-gauge line (!) from Chur to Filisur via Thusis, but the project had to be scrapped because the planned core finance from private sector sources did not materialise. This fuelled the increasingly strident demands – to which Holsboer also lent his voice – to abandon standard-gauge "world rail projects" (e.g. Chur–Engadin–Landeck–Merano or Chur–Thusing–Splügen–Chiavenna) for the time being at least, and focus instead on measures that would better serve Graubünden and its fast-growing tourist industry. Accordingly, work was started on a narrow-gauge





Overview of the narrow gauge railways in the Swiss Alps. Plan (reduced in size) taken from: E. BOSSHARD: *Die Berninabahn*, Zurich 1912 (*Schweizerische Bauzeitung*, offprint).



Landquart-Davos line > After passing Küblis, the railtrack climbs a gradient of 43%.  
Rhaetian Railway



Chur–Thusis line > Construction of the steel bridge across the Hinterrhein at Reichenau. Taken in 1885.  
Rhaetian Railway

line from Landquart to Chur and on to Thusis. The Landquart–Davos Narrow-Gauge Railway Company was entrusted with this undertaking, and both lines were up and running in 1896.

This period also saw a change in the Company's name, which no longer reflected its actual sphere of operations. The Landquart–Davos Narrow-Gauge Railway Company was renamed "Rhaetian Railway" in 1894, not least with a view to the new rail projects that were taking shape in the canton. This allusion to the name by which present-day Graubünden was commonly known between the 16th and the early 19th century (Alt Fry Rätien) was a clever move, as it fostered a sense of local identity and certainly helped to defuse the tension surrounding the contentious issue of what constituted the "right" type of railway. The name originally envisaged – Graubündner Bahnen – was rejected, since a possible abbreviation using the initials "GB" might have led to confusion with the Gotthardbahn. In 1896, the Rhaetian Railway moved its registered office from Davos to Chur.

In 1897, the Canton Graubünden bought the large block of Rhaetian Railway shares held by the "Swiss Railway Bank" (Schweizerische Eisenbahnbank). This bank – another brain-child of Holsboer's – was set up in Basel in 1890 for the purpose of assisting "in particular, rail transport enterprises serving the interests of the Canton Graubünden". Having acquired these shares, the canton became the de facto sole owner of the Rhaetian Railway. It would now have been possible to make the railway company part of the cantonal administration, in line with the policy adopted at federal level: the Swiss government had also bought the shares of the country's five regional

railway operators in 1897, and merged them into a single, government-controlled company under the name "Swiss Federal Railways". However, Graubünden did not want to follow suit with "its" railway.

But since the canton was now the majority shareholder of the Rhaetian Railway, it was nevertheless necessary to enact the appropriate cantonal legislation on railways. This was done in 1897, and the draft bill was accepted by a clear majority of voters in a local referendum. The legislation governed the above-mentioned acquisition of shares, support for the construction of new lines by means of graded cantonal contributions, and the mandatory payments in kind by the municipalities involved. In addition, the Rhaetian Railway was exonerated from all cantonal and municipal taxes. The tax exemption still holds good today (see Art. 34 of the Public Transport Act in the Canton Graubünden dated 7th March 1993), whereas the obligations relating to payments in kind could "only" be maintained until 1993. However, during the construction of the Vereina line from Prättigau to the Lower Engadin (from 1990 on), the municipality of Klosters-Serneus – which was particularly strongly affected by this project – was instructed under a Federal Court decision to meet its commitments, notably to make the necessary building land available free of charge.

In 1898, one year after the legislation on railways was approved, Graubünden successfully applied to the federal parliament for a subsidy. The Swiss Confederation agreed to take a stake of 8 million Swiss Francs in the Rhaetian Railway by purchasing so-called subsidy shares. This meant that work could go ahead on the following lines (first year of operation in brackets):





Samedan > The Rhaetian Railway threw a party in Samedan to celebrate the opening of the Albula line, 27th June 1903.  
Rhaetian Railway



Davos-Filisur line > Wiesen Viaduct. The imposing framework was constructed by the legendary Richard Coray. Taken in 1908.  
Rhaetian Railway



Reichenau-Disentis/Mustér line > The station in Disentis/Mustér decorated to welcome the opening train drawn by the G4/5 Nr. 119 locomotive, 30 June 1912.  
Rhaetian Railway

- > Albula line from Thusis to St. Moritz (1903/04)
- > Reichenau–Ilanz line (1903), later extended to Disentis/Mustér (1912)
- > Samedan–Pontresina line (1908)
- > Davos–Filisur line (1909)
- > Bever–Scuol line (1913)

These lines constitute the main network of the Rhaetian Railway, together with Landquart–Davos and Landquart–Chur–Thusis. In addition, three legally autonomous railway lines were built in Graubünden during the same period:

- > Bellinzona–Mesocco (1907)
- > St. Moritz–Tirano (opened in stages from 1908, all sections open in 1910)
- > Chur–Arosa (1914)

Graubünden's narrow-gauge rail network covering a total distance of almost 400 km was completed in an extremely short time-span of 26 years – an absolutely remarkable achievement even (or especially) by today's standards, given the major technical, topographical, climatic, political and financial difficulties involved.

### **Strong growth in the Belle Epoque**

The lines of the Rhaetian Railway and the other rail companies provided access to all the most important valleys of Graubünden. Train frequencies showed a very pleasing trend. Between 1890 (the first full year of operation) and 1913 (the year preceding the war), i.e. the period of network expansion, the Rhaetian Railway registered the following growth in its main network (converted to network kilometres):

- > Number of passengers carried – up by a factor of 2.0
- > Number of tons transported –

up by a factor of 2.0

- > Number of passenger kilometres – up by a factor of 2.6
- > Number of tonne kilometres – up by a factor of 3.0
- > Total transport revenues – up by a factor of 2.5

What should also be noted in this connection is the considerable increase in transport productivity, which is defined as the quotient between the company's transport services and its total staff. This quotient rose from 20.1 in 1890 to 36.5 in 1913.

The increase in train frequencies, of course, was not achieved without a lot of hard work. Very early on, the people who ran the Rhaetian Railway had realised the importance of measures that nowadays come under the heading of marketing. The Bernina Railway's report on its second financial year (1907) emphasised the need to take appropriate steps in this field: "As the area which should be opened up to large-scale tourism by the Bernina Railway is still relatively little known, we consider that extensive but dignified advertising is absolutely essential." Subsequently, renowned artists including Emil Cardinaux, Augusto Giacometti, Rafael de Ochoa and Marcel Lebrun were commissioned to design suitable posters. Advertising between 1910 and 1920 was done by means of posters, which displayed the name of the railway but did not show any trains!

In line with the increase in train frequencies and revenues, financial results were also very encouraging. With the exception of two business years (1891 and 1892), the Rhaetian Railway paid its shareholders regular dividends until 1913. In the post-war period, annual dividend payments only resumed when



Poster for the Rhaetian Railway by Emil Cardinaux, 1916. Surprisingly, the artist chose not to show a train. Rhaetian Railway / KGMZ



Poster for the Rhaetian Railway by Emil Cardinaux, 1918. Here again, the representation of a train is "missing". Rhaetian Railway / KGMZ



Postcard for the Bernina Railway, 1920. Artist unknown. Rhaetian Railway / KGMZ



the Company started making profits again after 1925, but they came to an end once and for all in 1930.

In the euphoric atmosphere generated by the success of the early years, various studies were carried out after 1900 on the feasibility of extending the Lower Engadin line to Pfunds in Austria, where a connection with the projected Vinschgau line from Meran to Landeck was planned. Both the Swiss and the Austrian authorities had already agreed in principle to grant the licence for the construction work. Projects and licences were also available for a rail link to Italy, from St. Moritz via Maloja to Chiavenna. But World War I put an end to all these plans. In view of the limited investment funds available, priorities had to be redefined. What counted was no longer the extension of the network but the optimisation of transport productivity.

In the entire main network of the Rhaetian Railway, only the lines to the Lower Engadin and the section between Samedan und Pontresina were electrified until 1913; roughly 80% of the network was operated with steam engines. During and after World War I, the price of coal rose six fold within seven years. The Company therefore pressed ahead with electrification of all its other lines, and the process was completed in 1922 (cf. 2.b.6 and 2.b.7).

### **New challenges and growth through mergers**

After carrying out all these investments, the Rhaetian Railway was faced with a threat of barely imaginable proportions when a new means of transport made its debut. The first cars had already appeared on the drivable roads in Graubünden in the closing years of the 19th century (cf. 2.b.3), but a complete ban

on cars in 1900 soon put a stop to this. From 1907 on, the people of Graubünden would repeatedly turn down proposals by the cantonal authorities to allow private cars on the roads. Only in 1925 – after eight unsuccessful referendums on the matter – was the ban on cars finally lifted. The car gradually became a powerful competitor of the railway for both passenger and goods traffic. A few years later, the Rhaetian Railway and the canton as a whole were hit by the world economic crisis. Between 1931 and 1936, the handsome profits earned in the six previous years turned into equally substantial losses. This negative trend continued with the outbreak of World War II. International political developments had an even stronger impact on the other rail companies in Graubünden, namely the Bernina, Mesocco and Arosa lines, which were only able to stave off bankruptcy thanks to periodic injections of public funds. In 1939, the Federal Act on Assistance to Private Railway and Shipping Companies entered into force. This was the basis for the restructuring of the Bernina line and its subsequent integration into the Rhaetian Railway, initially by way of a cooperative arrangement, then a full merger in 1944. Of necessity, the Mesocco and Arosa lines had already adopted this solution in 1941.

### **Developments in recent decades**

There have only been two further changes in the network of the Rhaetian Railway since the end of World War II:

- a) On the insistence of the Swiss government, the loss-making passenger transport operation on the Mesocco line was replaced by a bus service in 1972; the section between Mesocco and Castione remained open for



Bellinzona– Mesocco line > A train passing through Soazza. Photograph taken in the 1950s.  
O. Furter/Rhaetian Railway



Vereina Tunnel > Car loading point for the longest one metre gauge rail tunnel in the world.  
P. Donatsch/Rhaetian Railway

the time being, albeit only for goods traffic. Following a violent storm, the highest section of the line (Mesocco-Cama) had to be closed in 1978, and the Rhaetian Railway also discontinued train services on the remaining stretch between Cama and Castione due to a sharp fall in traffic volume. The rail installations were transferred to the Società Esercizio Ferroviario Turistico (SEFT), a private association which now offers a museum train service in the summer months.

- b) The demise of the Mesocco line was almost fully offset in kilometre terms by the construction of the Klosters-Lavin line (22 km long) between 1990 and 1999; its centrepiece, the Vereina tunnel, is the world's longest railway tunnel in meter gauge. In the short time since it was put into service, the Vereina line has exceeded all expectations regarding traffic volume. As the second rail connection from Northern Graubünden to the Engadin, it is of crucial operational and economic importance for the Rhaetian Railway and the Lower Engadin/Münstertal region (also as a fall-back in the event of interruptions on the Albula line).

The Rhaetian Railway has existed for more than a hundred years. Although its history has been punctuated by several crises, the Company has never failed to recover from them. The Swiss government and the Graubünden cantonal authorities regard it as an entity of major relevance, not only on national policy grounds but also for economic, transport and military reasons – which is why the Rhaetian Railway has always received generous financial support from the public sector. This commitment manifests itself in non-refundable

grants to compensate the Company for operating regular train schedules that do not cover costs, and in the joint financing of railway infrastructure investments, particularly with a view to increasing capacity on certain routes (e.g. by building double-track islands in an overwhelmingly single-track network). The present shareholder structure of the Rhaetian Railway, which has undergone practically no change in recent decades, is as follows:

Swiss Government	43.1 %
Canton Graubünden	51.3 %
Graubünden municipalities	1.0 %
Natural persons, legal entities	4.6 %

### Successful alpine-experience railway

Under its Articles of Association, the Rhaetian Railway's mission is to serve the economy of the Canton Graubünden in its capacity as a company managed in accordance with business administration principles. This also involves responding to new and growing customer needs. For example, the journey time from Chur to St. Moritz has been cut from 3¾ hours when the line was opened in 1904 to 2 hours today, thanks to state-of-the-art train security installations and increasingly efficient locomotives. Furthermore, the Glacier Express (St. Moritz-Zermatt) and Bernina Express (Chur–Tirano) are Rhaetian Railway “products” which enjoy a worldwide reputation and are not just applauded by experts; the National Geographic Traveler rates the Bernina Express as one of the ten most beautiful railway lines in the world.

A 385 km rail network with rolling stock of some 1,500 rail-borne vehicles is currently operated and maintained all year round by a staff of roughly 1,450 people. The latest performance figures show that with a to-





Bernina line > The Bernina Express has contributed significantly to international renomné of the Rhaetian Railway.  
T. Keller



Albula line > The Rhaetian Railway also operates goods trains. Timber and foodstuffs transport on the Landwasser Viaduct.  
P. Donatsch

tal annual turnover of over 250 million Swiss Francs, approximately 10 million passengers, 700,000 tonnes of freight and 400,000 accompanied motor vehicles a year are transported in an environmentally friendly and energy-saving manner. The Rhaetian Railway has successfully developed from a pure means of transport to a world-class alpine-experience railway, whose fame extends far beyond the borders of Graubünden and which is an inseparable part of the canton's tourism infrastructure.