

Zeitschrift: Swiss express : the Swiss Railways Society journal
Herausgeber: Swiss Railways Society
Band: 4 (1994-1996)
Heft: 10

Artikel: Private railways in Switzerland. Part 4 [i.e. 5]
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DOI: <https://doi.org/10.5169/seals-855086>

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Private Railways in Switzerland - 4

by Brian Hemming

Having described eight mountain railways in the last issue, this time just one private railway is covered - the Rhätische Bahn. This is without doubt the most popular private railway in Switzerland covering 375.6 km in Canton Graubünden. With the Gornergratbahn (GGB), the Brig-Visp-Zermatt-Bahn (BVZ) and the Furka-Oberalp-Bahn (FO) it forms a continuous metre gauge network of about 528.9 km. This makes through running of the Glacier Express from Zermatt to St.Moritz possible although the rack sections on the BVZ and FO preclude through working of RhB locomotives. If plans for the extension of the Montreux-Oberland-Bernois (MOB) through to the Rhône Valley come to fruition there could ultimately be a massive metre gauge network stretching from Tirano in Italy right through to Montreux and Luzern.

The RhB, which is owned by Canton Graubünden, is administered from its head office in Chur. The main works for the whole system is at Landquart which is also the point from which distances on the main network are measured.. The topography of the region results in a number of notable examples of civil engineering on the RhB. The Landwasser viaduct on the Albula line and the Langweiss viaduct on the Chur-Arosa line are spectacular as are the spirals on the Albula line between Bergün and Preda and the spiral at Brusio on the Bernina line. The highest point on the whole system is Ospizio Bernina at 2,253 m, whilst Tirano is the lowest at 429 m - both being on the Bernina line. The highest point on the main network is in the Albula tunnel at 1,823 m.

It is a matter of conjecture as to what might have been had all the plans which had been put forward come to fruition. The original plan for the Landquart-Davos-Bahn was to extend it to S-chanf and then continue via Samedan, St.Moritz and Maloja to Chiavenna. The preference for the Albula route resulted in the abandonment of the major portion of this but the idea for a line from St.Moritz to Maloja and Chiavenna remained. The economic effects of the First World War resulted in the abandonment of both this plan and a scheme to extend the Unterengadine line from

Scuol-Tarasp to Landeck in Austria. A bold scheme to connect Thusis with the Gotthard line at Castione-Arbedo via the San Bernardino never got beyond the planning stage.

Having already celebrated its centenary, the RhB holds a prominent place in the economy of Canton Graubünden. As well as carrying several million passengers each year, it is a vital artery for the transportation of freight with timber, cement and mineral water being major commodities. A recent development is a decision to ease the rack sections of the Furka-Oberalp-Bahn between Sedrun and Disentis/Mustér. This will extend adhesion working of the Glacier Express by the RhB to and from Sedrun and ease pressure on Disentis/Mustér.

Correction:

The computer lost some of the text in the first paragraph of the article on the Vitznau-Rigi-Bahn in *Swiss Express Vol.4/9 p.24*. The second and a third sentence in the first paragraph should read:

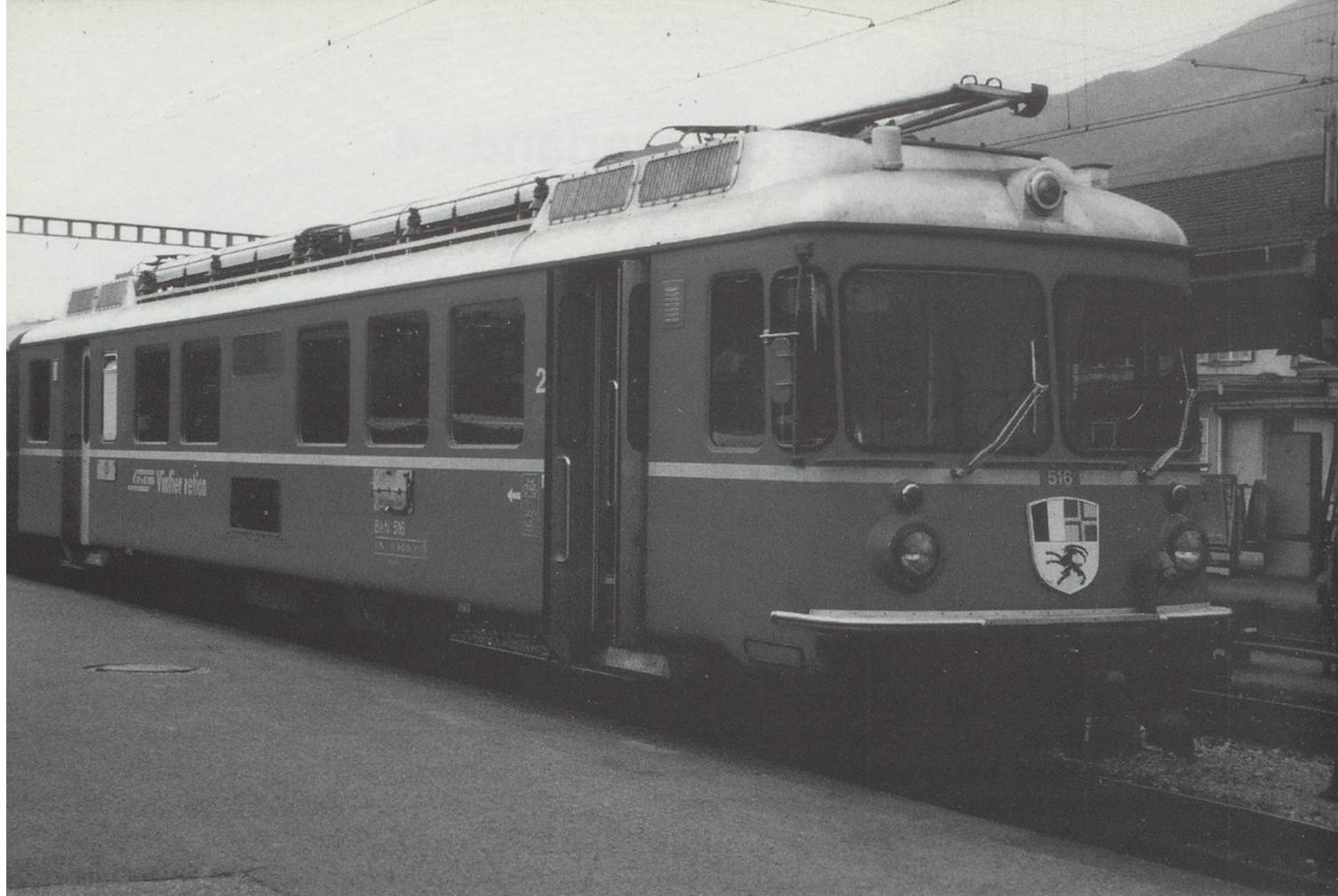
The line was opened in 1871 from Vitznau to the border of Canton Luzern at Rigi-Staffelhöhe but the company was unable to obtain a concession from Canton Schwyz to proceed to Rigi-Kulm. The Arth-Rigi-Bahn which is wholly in Canton Schwyz therefore obtained a concession and built the necessary extension which was leased to the VRB and opened in 1873 nearly two years before the ARB opened its own line to Rigi-Kulm.

SBB on the Internet

In the SBB/CFF's 'Via' magazine, there is an address for the SBB Internet site:

<http://www.sbb.ch/>

One of our members has tried it and tells me it works and gives access to French, German, Italian and English screens



Be4/4 516 seen here at Landquart. Sept. 1995.

RhB Rhätische Bahn

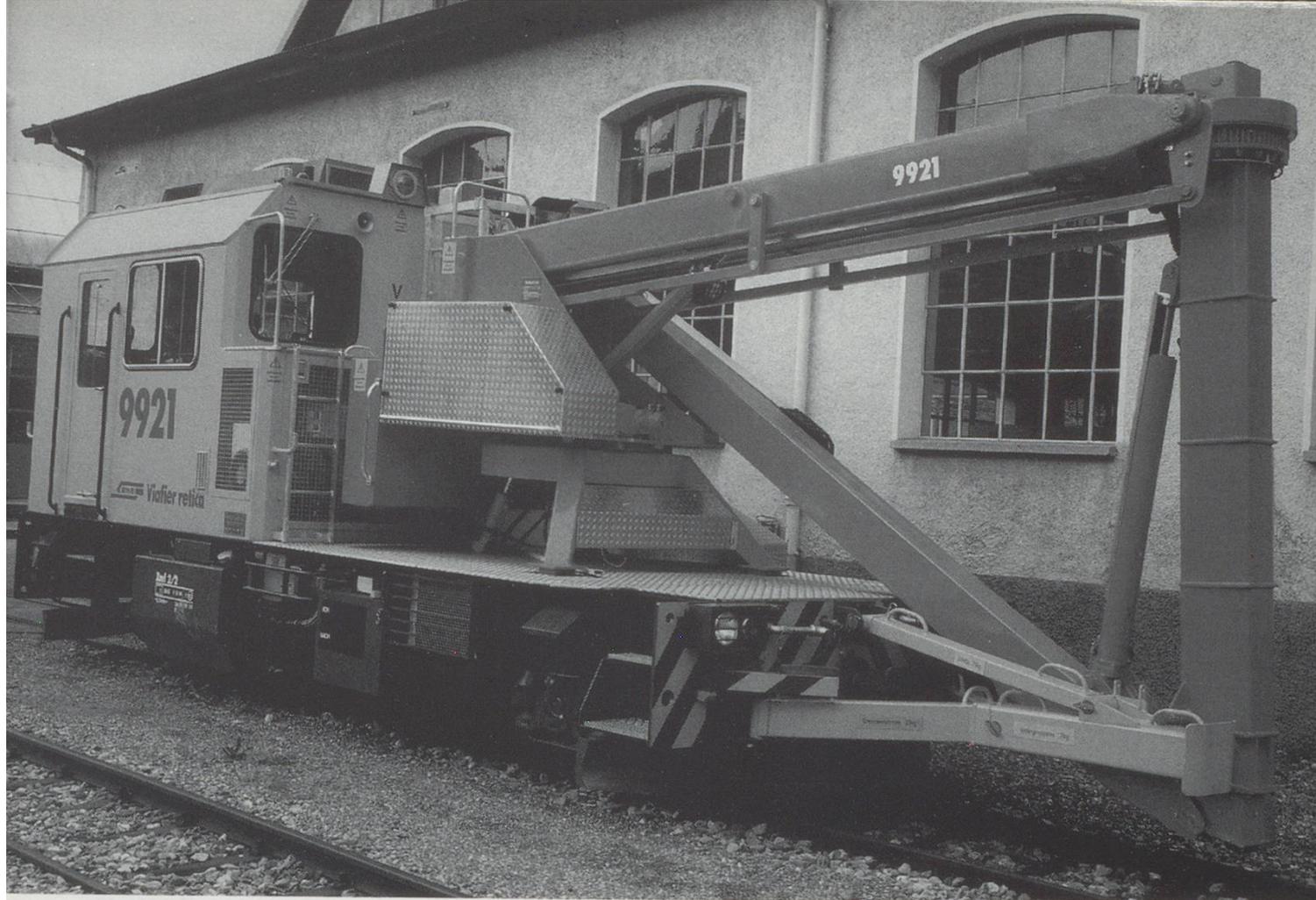
The Main Network

The original constituent of the Rhätische Bahn was the Landquart-Davos-Bahn (LD). This was projected as a standard gauge line, but because of the high costs was modified to a narrow gauge line with a rack section from Klosters to Davos. The concession was granted in 1887 and construction started in 1888 with the plan being modified for adhesion operation throughout. The section from Landquart to Klosters was opened in 1889 being followed in 1890 by completion throughout to Davos. Rival schemes for further extension of railways in Graubünden led to a referendum being held in 1889 which voted in favour of an Albula route. On 25.6.1895 the LD changed its name to the Rhätische Bahn and in 1896 the line from Landquart to Chur and Thusis was opened. Extension towards St.Moritz took place in two stages. In 1903, after completion of the Albula Tunnel, the line was opened from Thusis to Celerina with the remaining section to St.Moritz coming into service a year later. Also in

1903 a line from Reichenau-Tamins to Ilanz was opened. Further extensions of the main network took place in 1908 (Samedan to Pontresina), 1909 (Davos Platz to Filisur), 1912 (Ilanz to Disentis/Mustér) and finally in 1913 (Bever to Scuol-Tarasp).

The most recent development on the main network is the construction of the 19.1km long Vereina Tunnel. This will link Klosters with the Engadine at Lavin and provide a secure year round route for both passenger and car carrying trains. It will also relieve the Albula line which at times is operated to full capacity.

In 1913 the RhB took the bold decision to electrify its network with high voltage alternating current of 11kV 16.2/3 Hz. The first line to be electrified was that from St.Moritz to Scuol-Tarasp which coincided with the opening of the Unterengadine line in 1913. Further sections were electrified in later years with the project being completed in mid 1922 with the section from Reichenau-Tamins to Disentis/Mustér. A notable, although apparently minor change took



place on 1st January 1996 when for efficiency reasons the frequency, in common with the SBB, was changed to 16.7 Hz.

The main passenger and freight trains on the main network are locomotive hauled. The Ge4/4III locomotives now operate the heaviest passenger trains single handed which has greatly reduced the amount of double heading and relegated the Ge6/6II to freight duties. Railcar pendelzug units operate the local services in the Landquart-Chur-Thusis corridor and from Samedan to Pontresina, whilst locomotive powered push-pull trains operate from Davos to Filisur. The remaining examples of the much loved "Crocodiles" as well as three original steam locomotives and a small number of older electric locomotives still operate special trains.

Length: 276.2 km

Gauge: 1000mm

Voltage: 11kV 16.7 Hz AC

Maximum gradient: 45‰

Depots: Chur, Landquart

Works: Landquart

Nearest SBB stations: Chur, Landquart (shared)

Kursbuch tables: 910, 915, 920, 940, 941, 942, 943, 960

Xmf2/2 9921, seen here at the Landquart depot prior to entering service in August 1994, this is used for under bridge repairs.

The DC Lines of the RhB

In Graubünden there were three distinct railway companies all of which operated with DC electric power although at different voltages. The passing by the Confederation in 1939 of a railway support act and the economic difficulties brought about by the Second World War resulted in their merging with the RhB in 1942 or 1943. They are now controlled by the RhB but much of their original character remains.

Societa Ferrovia elettrica Bellinzona-Mesocco (BM)

After a number of early, and sometimes very ambitious plans dating back as far as 1891 a railway in the Misox was finally built and opened in two stages in 1907 from Bellinzona to Mesocco. It was electrified from the beginning drawing power



Above: A good line up for a modeller Ge4/4^{II} 618 with a Pullman coach and Haik vans at Landquart in September 1995.

from its own generating plant. The line carried both passengers and freight but was unable to generate sufficient traffic to support improvements. It was not until absorption into the RhB at the beginning of 1942 that financial assistance could be obtained and the necessary modernisation take place.

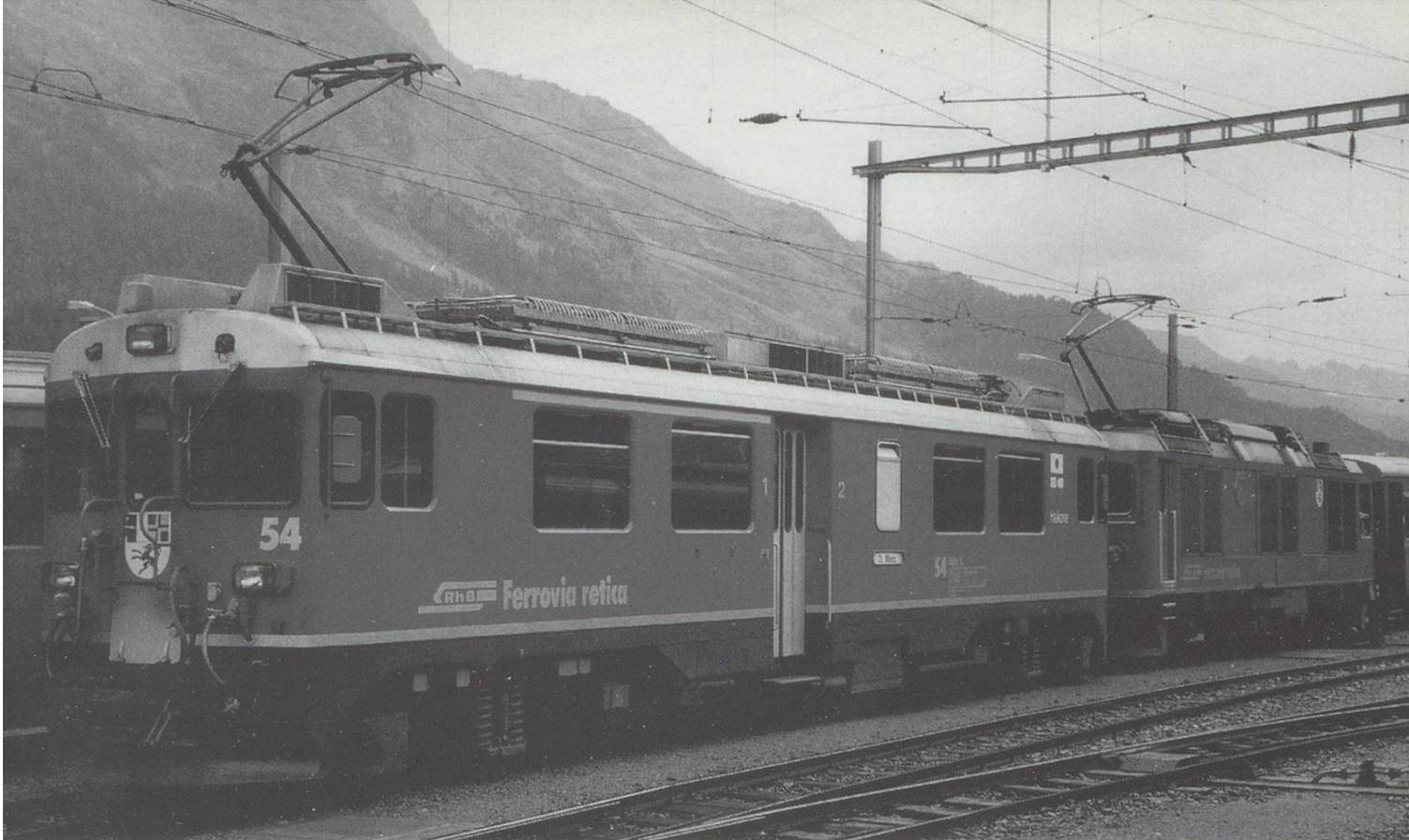
In 1955 a Rollwagon transfer point was built at Castione-Arbedo whilst two new railcars (452, 453) from an order for the Chur-Arosa line were converted to operate at the BM voltage. An additional new railcar (491) was delivered in 1958.

A significant event in the future destiny of the BM occurred in 1966 when the construction of the National route N13 not only cut the line at Roveredo but necessitated the demolition of the station building. In order to effect further savings in the construction of the N13 complete closure of the line was recommended by a commission authorised by the Confederation. However local pressure modified this to the retention of the line for freight traffic from Castione Arbedo to Mesocco and the replacement in 1972 of the passenger and parcels service by a PTT bus. In

1978 a severe storm cut the line in a number of places which resulted in closure beyond Cama and leaving railcars 452 and 453 stranded at Mesocco. 452 was cut up on site whilst 453 was taken out by road and preserved until being scrapped in 1983.

Proposals for the conversion of the line to standard gauge and transfer to the SBB remain unfulfilled. The freight service is in the hands of 491 which is supported by an on loan Appenzellerbahn Be4/4 No. 42. A feature in 1995 was the operation of a special passenger train, and further similar trains are planned for 1996.

Length: 12.7 km (originally 31.3 km)
 Gauge: 1000mm
 Voltage: 1500v DC
 Maximum gradient: 60‰
 Depots: Grono
 Works: Grono, Landquart
 Nearest SBB station: Castione-Arbedo (adjacent)
 Kursbuch tables: 625.15, 625.20 (both bus)



Above: ABe4/4 54 and Gem4/4 802 seen here at St. Moritz having just finished on the Bernina Express, in August 1994.

Berninabahn (BB)

In 1905 the Bernina-Bahngesellschaft was founded in St. Moritz with a view to opening an electrically operated tourist railway from St. Moritz to Tirano via the Bernina Pass and Poschiavo. Building commenced in 1906 with sections from Celerina to Bernina Suot and Poschiavo to Tirano opening in 1908, St. Moritz to Celerina and Bernina Suot to Ospizio Bernina in 1909 and finally Ospizio Bernina to Poschiavo in 1910. Initially the line carried only a summer service, but following extensive protection work in the period 1910-15 it was possible to operate throughout the year although at great cost to the Company. Cantonal support became necessary from 1930, but this could not be guaranteed indefinitely and therefore in 1944 the BB was absorbed into the RhB retrospectively to the beginning of 1943. The Italian section from Campocologno to Tirano was nominally owned by an Italian company, SA Tranvia Tirano-Campocologno, and leased to the Berninabahn. This company was owned by the Berninabahn and passed to the RhB in 1945. The company was dissolved when ownership of the line passed to the RhB in 1950.

As soon as the BB came under the control of the RhB a modernisation programme for both stock and infrastructure was put in hand. The voltage

had already been raised in 1935 from the original 750v DC to 1000v DC. The RhB placed new railcars in service from 1964 and a pair of electro-diesel locomotives were added in 1968.

The passenger trains normally consist of a pair of power cars or a power car and an electro-diesel hauling coaches, whilst freight traffic has railcars as traction units. The Bernina Express has been operating over the line since 1973, whilst open panoramic wagons are frequently included in trains in the summer. Snow clearance is carried out by modern equipment, but an original steam rotary snow plough which is retained at Pontresina does see service from time to time.

Length: 60.7 km

Gauge: 1000mm

Voltage: 1000v DC

Maximum gradient: 70‰

Depots: Pontresina, Poschiavo

Works: Poschiavo, Landquart

Nearest SBB station: Chur (via main network)

Kursbuch table: 950



ABDe4/4 482, seen here at Chur handling a goods train, September 1995.

Chur-Arosa-Bahn (ChA)

With the development of Arosa as a health resort towards the end of the 19th century, pressure began to emerge for a railway connection to Chur. Various proposals were put forward but it was not until 1914 that the Chur-Arosa-Bahn was opened. It was electrically operated from the beginning being energised at 2000-2200v DC. During its early years the company struggled, but fortunes turned and it was possible for a while to invest in new stock. Further financial difficulties led to the company being absorbed into the RhB with effect from the beginning of 1942 which resulted in a modernisation programme being instituted.

Present day stock consists of railcars which normally haul trains on a regular interval timetable. Open panoramic wagons are used on some trains in summer, whilst in winter the additional winter sports traffic necessitates the use of extra stock which is normally borrowed from the Bernina line.

Plans are well advanced to convert the line to

the standard RhB AC voltage although financial constraints have meant the retention of street running in Chur rather than the originally planned underground section. When AC electrification occurs the DC railcars, with the exception of two, will be withdrawn and the traffic will be handled by Ge4/4^{II} locomotives operating push-pull trains. The two remaining DC railcars will be converted to driving trailers.

Length: 25.6 km
 Gauge: 1000mm
 Voltage: 2200v DC
 Maximum gradient: 60‰
 Depots: Chur Sand, Arosa
 Works: Chur Sand, Landquart
 Nearest SBB stations: Chur (adjacent)
 Kursbuch table: 930



Powered Stock (brown or red livery; steam locomotives green & black; tractors and shunters orange or brown; service tractors yellow)

Above: Xm2/2 9917 seen here at Kublis with a contractor's loco on their way to the Vereine tunnel works in August 1994.

Class	Numbers	Built	Class	Numbers	Built
G3/4	1	1889	ABe4/4	501-504	1939-40
G4/5	107, 108	1906	Be4/4	511-516	1971, 1979
Tm2/2	15-26	1957-69	Ge4/4I	601-604	1947 (1987)
ABe4/4 (c)	30-34	1908 (1946-7)	Ge4/4I	605-610	1953 (1986-7)
ABe4/4 (b)	35-37	1908-9 (1949- 51)	Ge4/4II	611-620	1973
ABe4/4 (b)	41-49	1964-5, 1972	Ge4/4II	621-633	1984-5
ABe4/4 (b)	51-56	1987, 1990	Ge4/4III	641-649	1994
Te2/2	71-73	1946	Ge6/6II	701-702	1958 (1968/9)
Te2/2	74-75	1969	Ge6/6II	703-707	1965
Ta1/2	80	1980	Gem4/4 (b)	801-802	1968
Tm2/2	81-89	1987-90	Xrottd	9213	1911
Tm2/2	91, 92	1959	Xrotm	9216	1958
Tm2/2	93	1971	Xrotmt	9217	1981
De2/2 (b)	151	1909 (1980)	Xrotet (b)	9218, 9219	1967
De2/2 (b)	161, 162	1911	Xm2/2	9912	1962
Gem2/4	211	1913 (1943/67)	Xm2/2	9914	1950
Ge2/4	212	1913 (1943)	Xm2/2	9915	1958
Ge3/3	214, 215	1984	Xm2/2	9916	1963
Ge2/4	222	1913 (1946)	Xm2/2	9917	1974
Gm3/3	231-233	1975-6	Xm2/2	9918	1990
Gm4/4	241	1988	Xm2/2	9919	1994
Gm4/4	242, 243	1991	Xe4/4 (b)	9920	1909
Ge4/6	353	1914	Xmf2/2	9921	1994
Ge6/6I	411, 412	1925	Xe4/4 (b)	9922	1911 (1979)
Ge6/6I	414, 415	1929			
ABDe4/4 (c)	481-486	1957-8			
ABDe4/4 (c)	487, 488	1973			
BDe4/4 (m)	491	1958			

b = Bernina line 1000v DC

c = Chur-Arosa line 2000-2200v DC

m = Misoxer line 1500v DC