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Autor: Hemming, Brian
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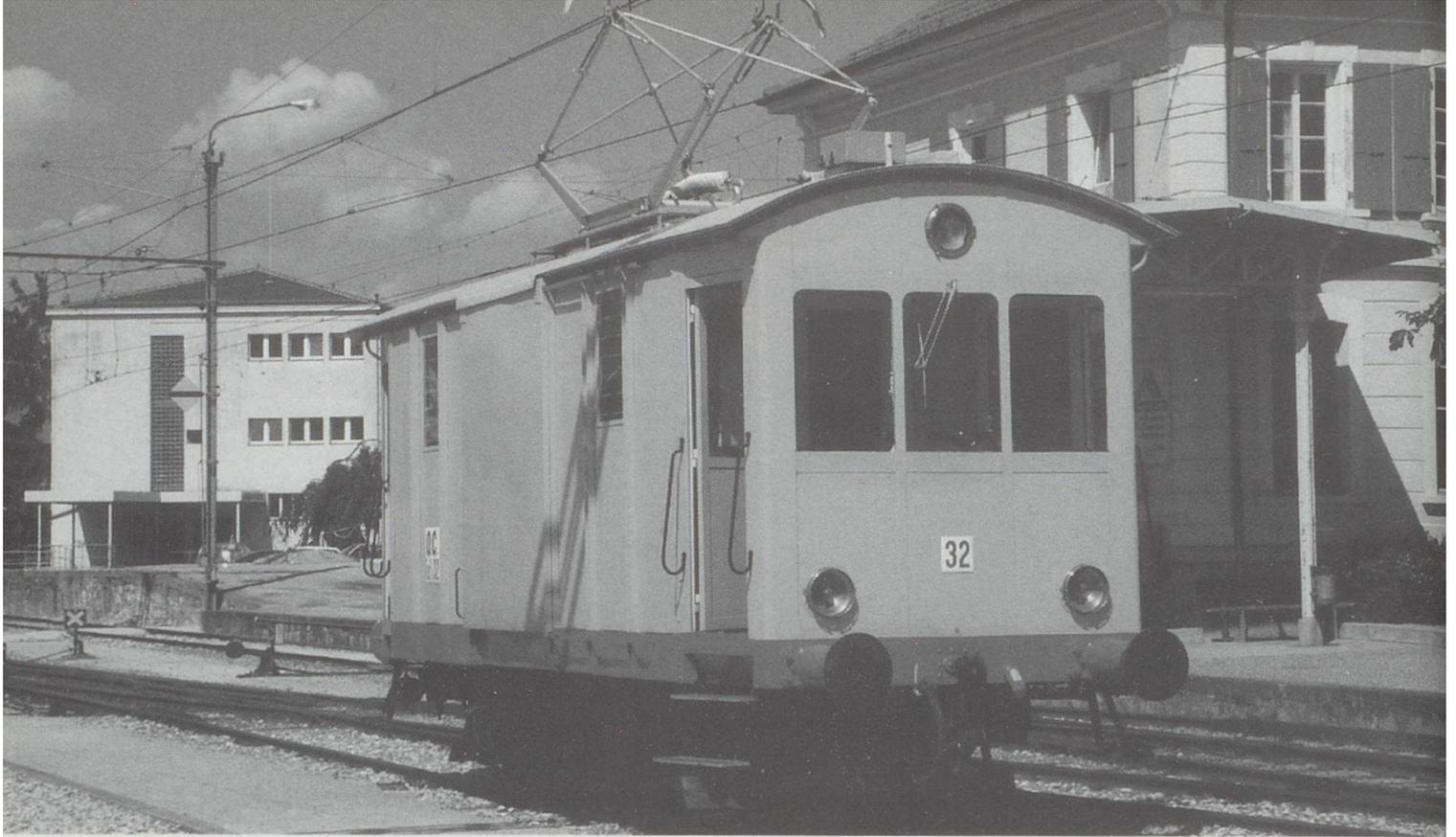
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Private Railways in Switzerland - 9

by Brian Hemming

Having had a majority of metre gauge lines dealt with in recent issues all the lines to be covered in this issue are standard gauge and operate by adhesion only. With one exception they are electrified at the main line standard of 15kv 16.7Hz AC.

The Bodensee-Toggenburg-Bahn (BT) and Südostbahn (SOB) together with the Federal Railways (SBB) jointly operate the two hourly express service on the route from Romanshorn to Luzern which is marketed under the name *Voralpen Express*. The BT and SOB provide most of the stock for these workings which is air conditioned and each set includes a bar coach. Locomotives used are from all three companies. The cross country route on which the *Voralpen Express* operates is very important from a freight point of view and provides not only an outlet for local produce and manufactured goods but also a link to and from southern Germany.

The other four railways are somewhat less important in national terms, but fulfil the purpose of many Swiss railways of serving their local communities as well as providing a means of transport for local industry. The Oensingen-Balsthal-Bahn (OeBB) is only 4.3km long from end to end but it is served by nearly 6km of private

Above: A rare site De2/2 32 of the Orbe-Chavornay seen here at Orbe in September 96. Photo: Les Heath

sidings and connecting lines and freight receipts are more than double those from passengers. The local importance is demonstrated by the fact that the commune of Balsthal has a 78% share in the railway. Another line under local control, although in this case that of the Canton Neuchâtel, is the Chemin de fer du Val-de-Travers (RVT). After many years of struggle it is now secure as part of the Cantonal transport system. The Chemin de fer Orbe-Chavornay (OC), a 700 v DC line, largely exists to serve local industry, and whilst it carries a regular passenger service over the 3.9km from Orbe to Chavornay, its freight receipts make up more than 80% of its income. Again, whilst providing regular passenger service for the local community, the Chemin de fer Pont-Brassus (PBr) has freight receipts which exceed those of the passenger service.

In three of these four railways there is a dependence on freight for their survival, but all demonstrate one of the major plusses of Switzerland which is a willingness to support the railway as a viable means of transport.



Above: Re4/4 93 in the livery of the Voralpen Express seen here at Arth-Goldau

Photo: Les Heath

BT Bodensee Toggenburg

The first railway into the Toggenburg region of north east Switzerland was the Toggenburgbahn which opened from Wil via Wattwil to Ebnat-Kappel in 1870 and was absorbed into the Federal Railways (SBB) in 1902. Another line which became important in the development of the BT was that from Rapperswil to Uznach which opened in 1859, was absorbed into the SBB in 1902 and extended to Wattwil following the opening in 1910 of the Ricken tunnel after seven years construction

Under the leadership of Isidor Grauer-Frey, a Degersheim embroidery manufacturer, a committee was formed in 1889 to promote a direct railway connection between north east Switzerland and the Gotthard line. Thus the BT came into being and was opened in 1910 from Romanshorn via St.Gallen to Wattwil. It was then possible, using SBB and Südostbahn (SOB) lines to travel by a direct route from Romanshorn to Arth-Goldau on the Gotthard route. The final development of the BT was the extension of the original Toggenburg line from Ebnat-Kappel to Nesslau-Neu St.Johann in 1912.

Electrification of the SBB Rapperswil to Wattwil line took place in 1927 whilst Romanshorn was

electrified in 1928. It was not until 1931 that the BT line from St.Gallen via Wattwil to Nesslau-Neu St.Johann was electrified followed in 1932 by the line from St.Gallen to Romanshorn. The section from Wattwil to Ebnat-Kappel was leased to the BT by the SBB at the time of electrification. From Wattwil to Lichtensteig the BT and SBB lines run parallel and although the BT line was electrified with the rest of the system, that of the SBB line remained steam operated until the wartime shortage of coal forced electrification from Wattwil through to Wil in 1943. Thus was created the right conditions for today's joint through service from Wil to Nesslau-Neu St.Johann.

The BT is notable in being a line of tunnels and bridges. Along its 66km length it passes through 17 tunnels, including the 3.5km Brunnadern-Wasserfluh tunnel east of Lichtensteig, and crosses 86 bridges. The 365m long Sitter viaduct between Herisau and St.Gallen at 99m above river level is the highest in Switzerland. The nature of the BT route which to generalise either goes through hills or crosses river valleys is dictated by the topography of the region and results in over 85% of the line being single. Nevertheless an efficient passenger and freight service is operated



Above: Re4/4 94 in normal BT livery .

Photo: Les Heath

using modern stock and locomotives.

The route from Romanshorn to Luzern using BT, SBB and SOB metals forms an important cross country connection. There is an hourly service from Romanshorn to Arth-Goldau extended every two hours as the *Voralpen Express* to Luzern. An hourly pendelzug service operates between St.Gallen and Uznach and there are further pendelzug trains between Wittenbach and Herisau. The service between Wil (on the SBB) and Nesslau-Neu St.Johann is a joint BT/SBB operation using one pendelzug unit from each company which cross at Wattwil every hour at the same time as trains in each direction on the main line. Freight revenue provides about 40% of the revenue of the BT and consists of both through traffic and that originating from a number of private sidings along the route. The BT has preserved both a steam locomotive and a pre-war railcar both of which are used on a regular basis for special workings.

Length: 65.9 km

Gauge: 1435 mm

Voltage: 15kv 16.7Hz AC

Maximum gradient: 25‰

Depots: Herisau, Nesslau-Neu St.Johann

Works: Herisau

Nearest SBB stations: Rapperswil, St.Gallen, Romanshorn, (shared)

Kursbuch tables: 853, 870

Powered Stock (liveries: green and cream, shunters and tractors: red/brown or green, Be4/4 locomotives: dark green)

Class	Numbers	Built
Tm2/2	1, 2	1962, 1964
Tm2/2	4	1977 (1993)
Tm2/2	5	1992
Tm ^{IV}	6, 7	1971, 1973
Tm2/2	8	1937 (1964)
Tm2/2	10	1960 (1973)
Be4/4	11, 12, 16	1931
Te ^{III}	35	1966
Be3/4	43	1938
Re4/4	91 - 96*	1987 - 88
Xm	9061	1966 (1986)
RBDe4/4	556 071 - 076	1982
BDe4/4	576 050	1960
BDe4/4	576 051 - 053	1966 - 67
Eea	936 031 - 032	1966

* new numbers 456 091 - 096 allocated



Above: Be2/2 14 is the newest addition, seen here at Orbe, September 96.

Photo: Les Heath

OC Chemin de fer Orbe-Chavornay

The origin of the OC goes back to a local need to connect Orbe at Chavornay with the Jura-Simplon-Bahn (later SBB) line running south from Yverdon. The OC was opened in 1894 and has the distinction of being the first standard gauge electric railway in Switzerland with the power being provided, originally at 600 volts DC by a hydro electric power station at Orbe. The stock initially carried the legend UO - Usine d'Orbe - but the original railcar No.1 (later No.11) now preserved at the Verkehrshaus in Luzern is lettered O-C.

In the period 1914-21 a modernisation programme took place which amongst a number of improvements included strengthening of the track and the purchase of two new railcars. Development of the line came as a result of increasing industrialisation, particularly in the area around Les Granges. Here two lines with a total length of about 3 km (not included in the length figure below) branch off the main route to serve a number of factories and end at goods depots.

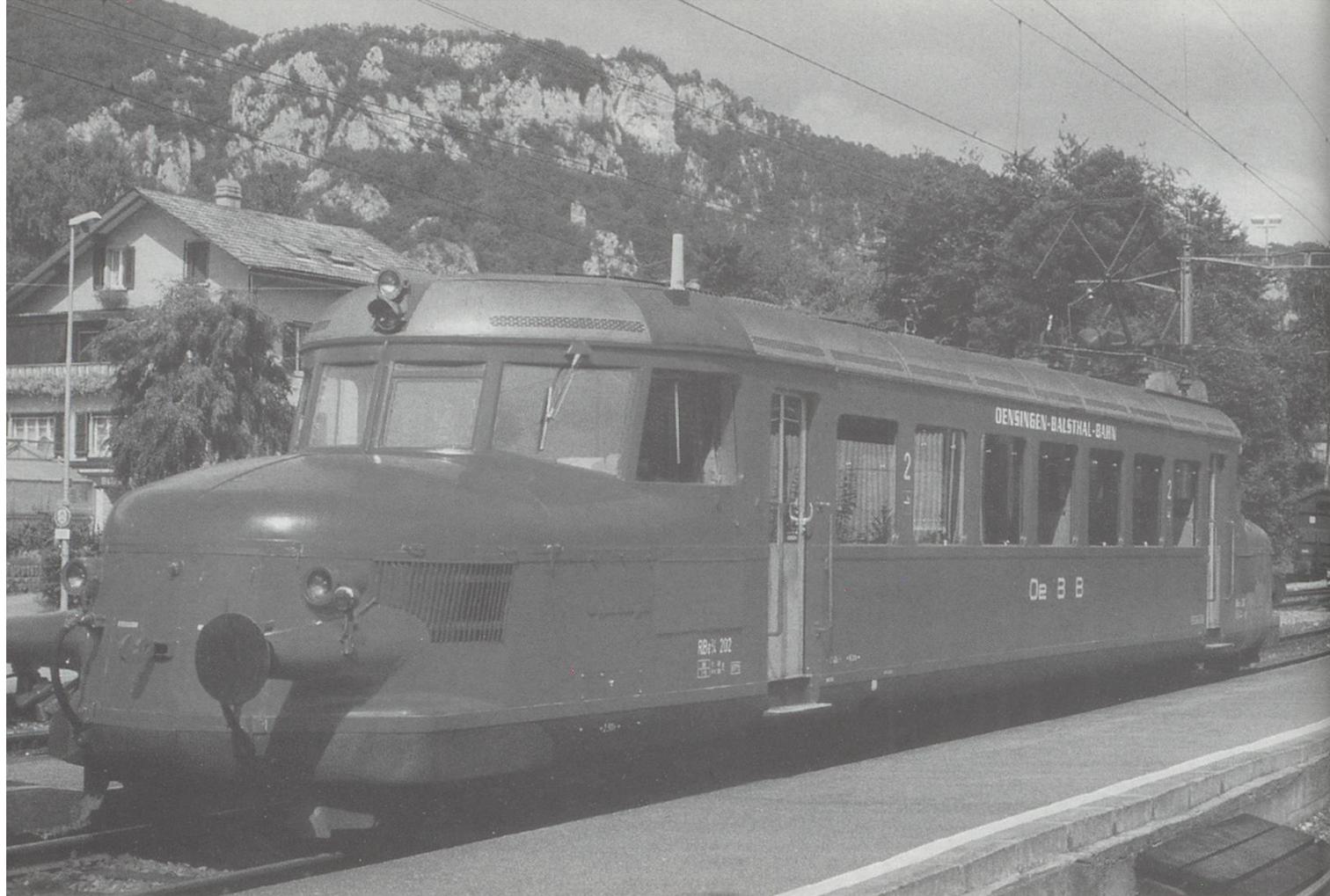
At Chavornay the line makes a physical connection with the Federal Railways and mainly follows the road to Orbe. As far as Les Granges it is relatively flat but from thereon to Orbe steepens with some street running after Orbe-Moulins.

Freight traffic, which provides the mainstay of the income of the OC, is generally handled by the two Ee2/2 locomotives whilst a diesel locomotive is

based at Les Granges to cover traffic on the branch lines and private sidings. The passenger service to Chavornay operates basically hourly making good connections to and from Lausanne. At peak hours the service become basically half hourly when good connections are also made to Yverdon. The Orbe - Chavornay service is normally operated by the modern two axle railcar supported where necessary by the older railcars introduced as part of the 1914-21 modernisation. Still kept at Orbe is the magnificently preserved De2/2 No.32 resplendent in bright yellow livery.

Length: 3.9 km
 Gauge: 1435 mm
 Voltage: 700 v DC
 Maximum gradient: 25‰
 Depots: Orbe, Les Granges
 Works: Orbe
 Nearest SBB station: Chavornay (adjacent)
 Kursbuch table: 211
Powered Stock (liveries: orange and cream, locomotives: orange)

Class	Numbers	Built
Ee2/2	1, 2	1970
Em3/3	3	1986
BDe4/4	12, 13	1915, 1920
Be2/2	14	1990
De2/2	32	1902



OeBB

Oensingen-Balsthal Bahn

After some rather grandiose plans put forward in 1873 to build a railway from Bern to Basel via Oensingen and Balsthal and a number of other proposals, it was not until 1899 that the OeBB opened. It took seven years to finance the building but from the beginning had the active support of local industry and the inhabitants of Balsthal.

From the beginning freight traffic was strong due to the expansion of local industries and this in turn generated passenger traffic for which second hand early Swiss coaches were used. Electrification took place in 1943. Following the end of the Second World War attention was particularly paid to track maintenance not only on the main running tracks but also the private sidings and connecting lines to the Von Roll works at Klus which total some 5.9km.

In 1969 the OeBB, which had been closely associated with the Solothurn-Niederbipp-Bahn, passed to control of the Emmenthal-Burgdorf-Thun-Bahn (EBT). This lasted until 1973 when

Above: RBe2/4 202 Roto Pfeil (Red Arrow) this must be the most famous piece of stock of the OeBB.

Photo: Ron Smith

the line again became independent following the granting of a new 50 year concession. The OeBB is now 78% owned by Balsthal commune.

The current passenger timetable of the OeBB occupies but half a page in the Kursbuch and shows a roughly hourly interval service with augmentation at peak times. Connections are made at Oensingen with main line trains to Olten, Solothurn and beyond. The service is operated by the ex BLS railcars but careful study of the timetable (the column heading M) shows 3 mixed trains to Oensingen and 2 to Balsthal on working days. These are operated by the diminutive Ce2/2 locomotives and present an opportunity for riding behind unusual motive power on a type of train long since disappeared in the UK. Looking to the future plans are in hand to incorporate the OeBB service into a new network of services sponsored by Canton Solothurn which will probably mean through working from the branch to Solothurn.

The OeBB has a variety of old stock in various



Above: The Balsthal Bahn has some magnificent events seen here in 95 Mallek SCB 196. The Eisenbahnfest usually takes place in September.

Photo: Ron Smith

conditions around its premises which it appears are destined for preservation at some time. It has two preserved steam locomotives as well as an ex SBB "Roten Pfeil" and an old electric tractor (Tae 5 - ex SBB Te¹ 960) and "Sputnik" brakevan both painted in an inauthentic but highly decorative livery. Special trains are run from time to time, but the highlight is the Eisenbahnfest normally held each year at Balsthal in September.

- Length: 4.3 km
- Gauge: 1435 mm
- Voltage: 15kv 16.7Hz AC
- Maximum gradient: 25‰
- Depot: Balsthal
- Works: Balsthal
- Nearest SBB station: Oensingen (adjacent)
- Kursbuch table: 412

Powered Stock (liveries: blue & ivory, locomotives: green)

Class	Numbers	Built
De4/4	51	1940
Ce2/2	102, 103	1944, 1947
Be2/4	201	1935
RBe2/4	202	1938
ABDe4/8	244, 245	1946
De6/6	15301	1926

Notes: 51 is ex SZU (originally SBB 601), 201 is ex BLS 721, 202 is ex SBB 1007, 244 & 245 are ex BLS 744 & 745, 15301 is ex SBB



PBr Chemin de fer Pont-Brassus

In 1886 an 11.2km branch line was opened from Le Day to Le Pont. This was taken over by the Jura-Simplon-Bahn (JS) in 1891 and passed to the Federal Railways (CFF) in 1903. The original purpose of this line was for the transport in summer of commercially produced ice from the Vallée de Joux, but there was also a passenger service to Le Pont.

The seasonal nature of the traffic, and a reliance for passengers on the summer only steamer service on the Lac de Joux led to consideration being given to extending the line further up the Vallée de Joux. After the consideration of various schemes a 13.3km line, the PBr, was built and opened in 1899 from Le Pont to the winter sports resort of Le Brassus. It was operated by the JS, and at this time the PBr had no stock or operating staff. At the time of transfer of the JS to the Federal Railways in 1903, the PBr assumed responsibility for the stations between Le Pont and Le Brassus as well as maintenance of the line. This resulted in the railway having its own maintenance stock. Operation of the passenger and freight service remained in the hands of the CFF using Mallet steam locomotives until electrification in 1938. One of these steam locomotives, Ed 2+2/2 No.196, is preserved in the Verkehrshaus at Luzern.

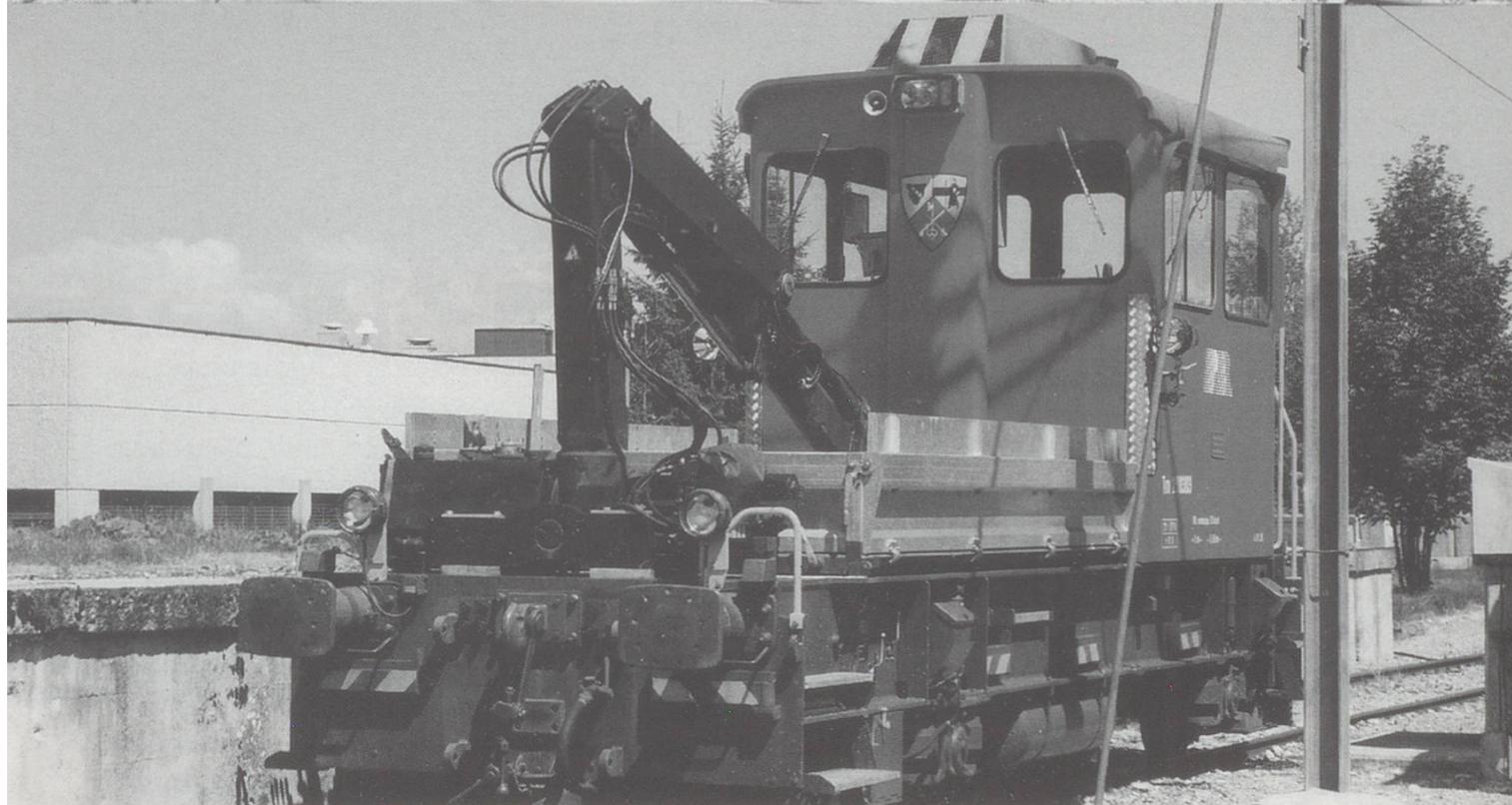
Above: Modern RBDDe4/4 2184 at Brassus in September 96.

Photo: Les Heath

On electrification all services were put into the hands of De4/4 Nos.1669-1671 supported from time to time by BDe4/4 railcars from Lausanne. The purchase of two modern RBDDe4/4 railcars followed the demise of the older stock, whilst with the strengthening of the bridges along the line it became possible to use much heavier locomotives, including the powerful Re6/6 class, on freight. The railway has three tractors which are kept at Le Brassus, Sentier-Orient and Le Pont.

The passenger service is hourly between Le Brassus and Vallorbe with a couple of weekday workings through to Lausanne built into the timetable for maintenance purposes. Freight is hauled entirely by the CFF and consists of timber, cattle and fuel. These services can produce any type of motive power - on the occasion of a visit to Sentier-Orient by the writer in 1993 a Class Re 460 arrived with a train of 5 bogie wagons!

The line is used by the preservation group, Compagnie du train à Vapeur de La Vallée de Joux (CTVJ) which operates two return passenger services on Sundays, once or twice a month, from May to September using E3/3 steam locomotives.



Length: 13.3 km
 Gauge: 1435 mm
 Voltage: 15kv 16.7Hz AC
 Maximum gradient: 23.3‰
 Depot: Le Brassus
 Nearest SBB stations: Le Day, Vallorbe (both shared)
 Kursbuch table: 412
Powered Stock (liveries: blue & grey, tractors: red)

Class	Numbers	Built
Te2/2	101	1946

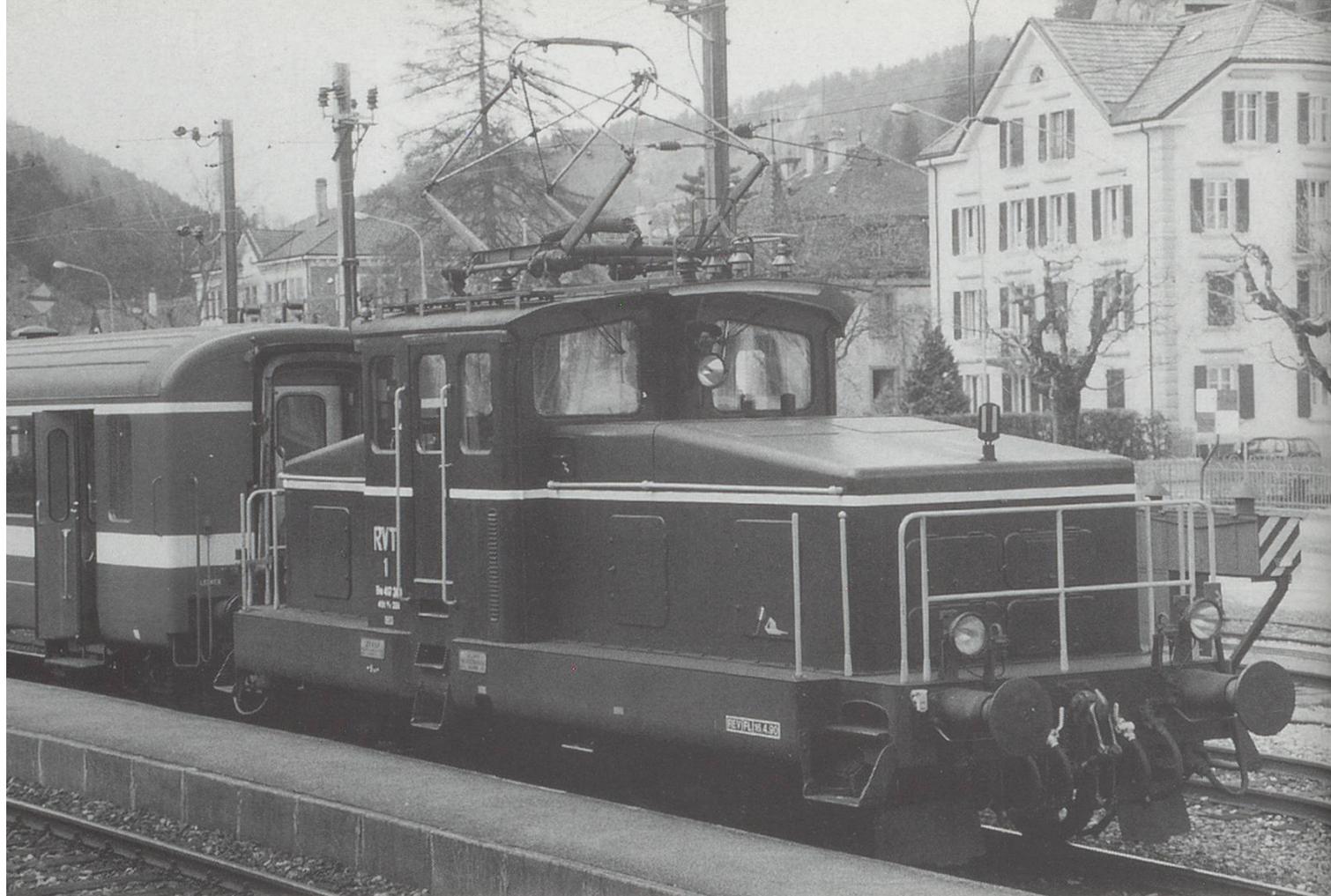
Top: Te2/2 101 and Tm 283 303 at Brassus in September 96.

Above: Another view of Tm 283 303.

Photo: Les Heath

Tm2/2	102	1961
RBD4/4	2184, 2185	1991
Tm	283 303	1992

Notes: 2184 & 2185, which carry "Vallée de Joux" livery are maintained by the CFF at Lausanne depot.



RVT

Chemin de fer Régional du Val-de-Travers

Above: The only loco Be 417 301 still carries No.1 as well as modern numbering.

Photo: Les Heath

In 1860 the line from Neuchâtel to Les Verrières and onward to Pontarlier in France opened. Although it followed the Val-de-Travers it was built above the valley floor and therefore did not serve the local communities which had grown up close to the river. Plans were laid as early as 1854 to build a railway along the valley bottom but it was not until 1883 that a line was opened from the Neuchâtel - Pontarlier line at Travers to St.Sulpice and the RVT came into being. This was followed in 1886 by a branch line from Fleurier to Buttes.

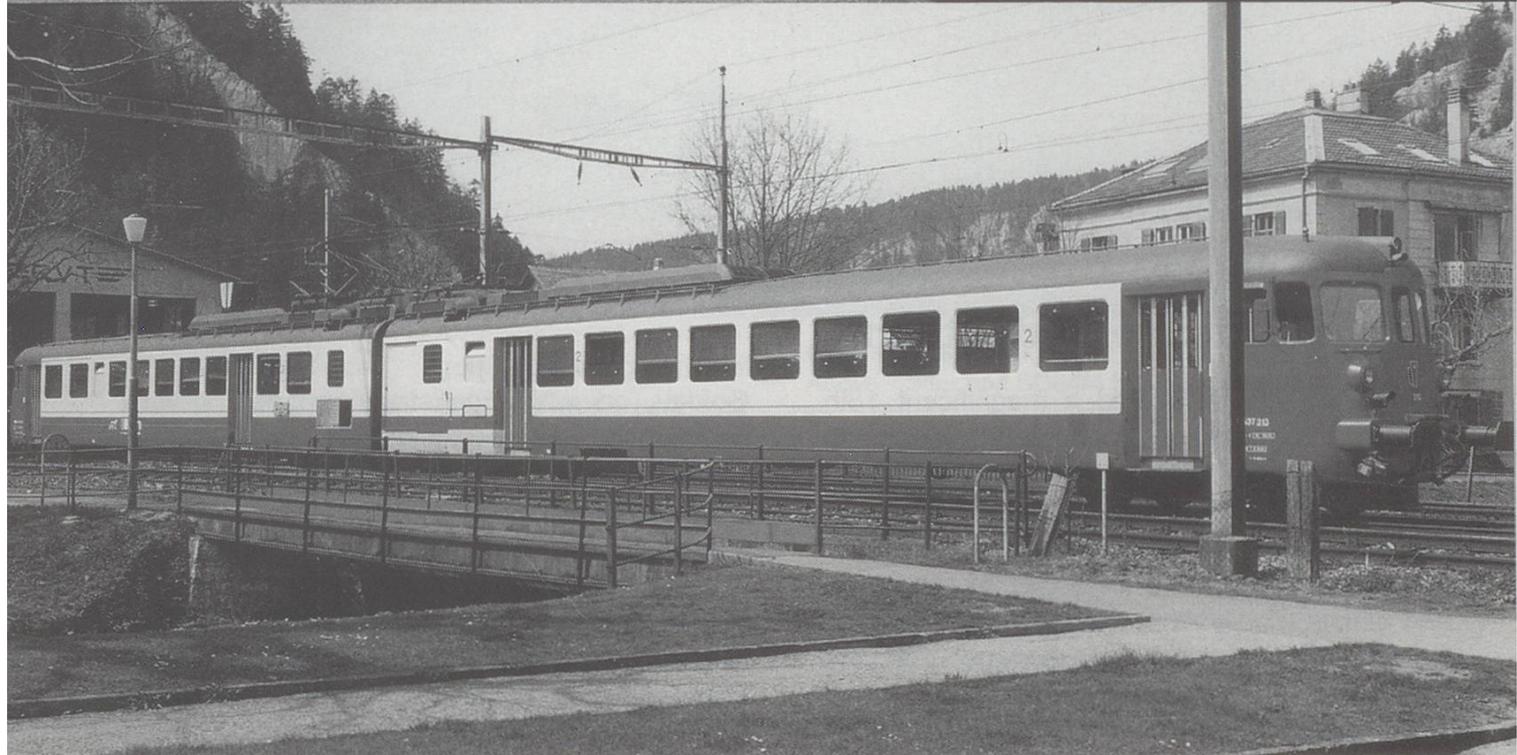
The company was in almost continual financial difficulties even though from 1885 to 1912 it was managed by the Compagnie Suisse Occidentale-Simplon (SOS, later Jura-Simplon and then Federal Railways). Following the First World War efforts were made to reduce costs and a pair of diesel electric railcars were purchased. The economic problems of the 1930's brought further difficulties which were relieved by electrification in 1944.

In 1952 the RVT obtained two buses which in

order to cut costs replaced little used train services on both the St.Sulpice and Buttes lines. In 1967 an agreement was reached with the CFF which allowed CFF trains on the RVT in return for the RVT having operating rights from Travers to Les Verrières. From 1968 the passenger service from Travers to St.Sulpice passed entirely to buses and is now covered by a bus service from Fleurier to Les Verrières. In 1987 control of the RVT passed to Canton Neuchâtel and operation of the line reverted exclusively to the RVT.

The passenger service, currently operated by hourly pendelzug trains, is from Neuchâtel to Buttes. At peak times additional trains operate between Travers and Fleurier. Freight, transferred at Travers, is handled by a 1951 electric locomotive and comes from private sidings, notably the asphalt works at Travers and the cement works at St.Sulpice.

At St.Sulpice is the operating centre of the preservation group Vapeur Val-de-Travers (VVT). Here is kept a number of European steam



locomotives which can be seen throughout Switzerland on special trains. In addition the VVT operates three steam trains a day on one weekend per month from May to September.

Length: 13.6 km
 Gauge: 1435 mm
 Voltage: 15kv 16.7Hz AC
 Maximum gradient: 17‰
 Depot: Fleurier
 Works: Fleurier
 Nearest SBB stations: Neuchâtel, Travers (both shared),
 Kursbuch table: 221

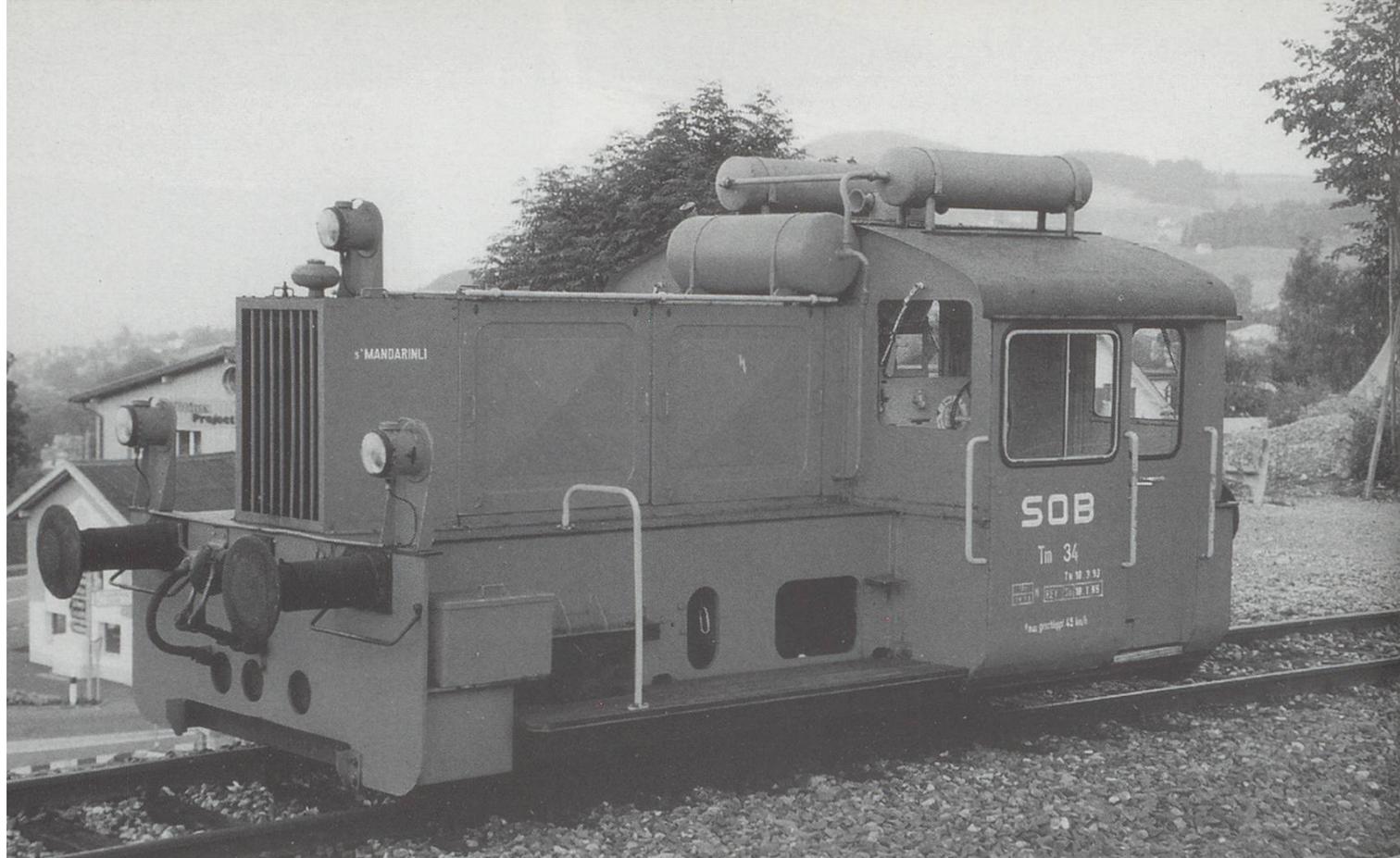
Top: One of the modern units RBD 567 316, dating from 1985, seen in October 96.

Above: One of the older units, ABDe 537 313, built 1946 refurbished and still in use. Photos Les Heath

Powered Stock (liveries: red & white, locomotive: green, tractor: red/brown)

Class	Numbers	Built
Tm	237 312	1983
Be	417 301	1951
ABDe	537 311 - 312	1944, 1945
ABDe	537 313	1946
RBD	567 315	1983
RBD	567 316 - 317	1985, 1991

Notes: 537 313 is ex BLS ABDe4/8 745



SOB Schweizerische Südostbahn

At Einsiedeln is located a magnificent 18th century Benedictine monastery which is regarded as one of the finest baroque buildings in Europe. The Gnadenkapelle within the building contains a late Gothic black image of the Madonna which is an object of veneration and makes Einsiedeln a centre of pilgrimage. It was for the carriage of pilgrims that the Wädenswil-Einsiedeln-Bahn (WE) was promoted and opened in 1877. It had been planned to use on the steepest sections a toothed rack system designed by the Canton Zürich engineer, Wetli, but this was abandoned during trials after a failure with fatal consequences and the line opened using adhesion only.

With the opening of the Gotthard line a company, the Zürichsee-Gotthard-Bahn (ZGB), was formed to build a line from Rapperswil via Samstagern and Biberbrugg on the WE to Arth-Goldau. Lack of money meant that only the section from Rapperswil to Pfäffikon SZ could be completed and this was opened in 1878. In 1890 the WE and ZGB amalgamated to form the SOB, and the line from Pfäffikon SZ to Arth-

Goldau, on which construction had already commenced was opened in 1891.

After a period of prosperity traffic began to fall off in the 1930's and it became obvious that only a wholesale modernisation and electrification programme could solve the problems. Electrification was completed in 1939 which then made possible through running from Romanshorn on the BT via the SBB and SOB to Arth-Goldau and beyond.

The line leaves Rapperswil on a road/rail bridge across the Zürichsee and then heads west to Pfäffikon SZ before climbing to Samstagern where it is joined by the line from Wädenswil. It then climbs further to Biberbrugg where a junction is made with the branch to Einsiedeln. Beyond Biberbrugg the line climbs further to the plateau of the Altmatt before descending to Arth-Goldau.

Three basic passenger services operate on the SOB. Of greatest importance is the hourly main line locomotive hauled service, operated jointly with the BT and SBB, from Romanshorn to Arth-Goldau which is extended every other hour as the *Voralpen Express* to Luzern. The local



pendelzug services, again operating on an interval basis are from Rapperswil to Samstagern, Samstagern to Einsiedeln, Biberbrugg to Arth-Goldau and Wädenswil to Einsiedeln. Finally there is locomotive hauled weekday morning and afternoon peak hour service from Einsiedeln to Zürich Altstetten which carries a bar coach! Freight traffic, which represents about a third of the SOB revenue, originates elsewhere and is mostly carried as through workings using Lokoop owned ex Deutsche Reichsbahn (DR) electric locomotives. The company has extensive well equipped workshops at Samstagern and undertakes work not only on its own stock but that of other railways.

Length: 49.1 km
 Gauge: 1435 mm
 Voltage: 15kv 16.7Hz AC
 Maximum gradient: 50‰
 Depot: Samstagern
 Works: Samstagern
 Nearest SBB stations: Arth-Goldau, Pfäffikon Rapperswil and Wädenswil (all shared), Kursbuch tables: 670, 671, 672

Opposite page: Kof diesel Tm 236 034, September 96.
 Above: Older unit BDe4/4 576 485, September 96.

Photos: Les Heath

Powered Stock (liveries: green & cream, orange, locos: red, tractors: red/brown)

Class	Numbers	Built
Te ^{III}	216 451	1943
Te ^I	216 452	1950
Te ^I	216 453	1941
Tm	236 033	1960
Tm	236 034	1960
Re	446 445 - 448	1982
ABe	526 405	1939
ABe	526 411, 413	1940
ABe	526 414	1941
ABDe	536 409	1952
RBDe	566 400 - 403	1993
BDe4/4	576 480, 481	1959
BDe4/4	576 482, 483	1966, 1978
BDe4/4	576 484 - 487	1979
De4/4	586 421, 422	1940
Am	846 461	1964

Notes: 536 409 is ex BT 44, 586 421 & 422 are ex SBB 603 & 602, 446 445-448 are ex SBB Re4/4^{IV} 10101 - 10104