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THE OERLIKON TRAMONT FACILITY. PART 1

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Following the note from George Hoekstra in the last issue about the closure of Tramont by AdTranz Malcolm Hardy-Randall explains the history of the company and site. Part 2 will include details of the facility and how it works.

Located in Oerlikon, just north of Zürich, is one of Switzerland's major manufacturing companies. This company, now called Adtranz, started life in the transport and electrical industry in 1876 as Werkzeug und Maschinenfabrik Oerlikon and ten years later became Maschinenfabrik Oerlikon (MFO). In the beginning it was the policy for vehicles to be built by contracted companies such as SLM Winterthur or SIG Neuhausen am Rhein, and for the electrical equipment to be fitted in their works by the respective electrical manufacturers own staff. However, rolling stock grew in size and power so that a new system had to be brought into use whereby the bodies of various locomotives or vehicles would be built in one site and the electrics fitted in another.

Various companies built plants around the country, such as the small contractors that later formed SAAS in Geneva, Aloithe in Münchenstein, Brown Boveri in Baden and Maschinenfabrik Oerlikon in Zürich-Oerlikon. In all of the plants the traction power was low voltage direct current wires or third rail systems for street operation, but in 1891 the first of the three phase AC systems to power the Rowan design trains appeared on the Bergbahn Lauterbrunnen Mürren and the Sissach Gelterkinden Railways built by MFO followed by the Gornergrat and Jungfrau Railways built by BBC in 1898. Although Oerlikon was involved in building three phase powered stock for the BTB as late as 1921 it had concentrated the bulk of its work on the single phase supply system.

The renowned MFO electrical engineer Dr Behn-Eschenburg pioneered and patented the high voltage single phase AC railway traction motor. MFO financed and developed the system on the well known Seebach-Wettigen railway from 1905. Also the company was well known in the field of generating equipment for the hydroelectric plants that were being built around Switzerland.

The Oerlikon works was kept busy in the period after 1910 supplying type Ce 6/6 and Be 5/7 locomotives for the new line from Thun to Brig. These locomotives were powered by 15 kV 16 2/3 Hz as developed by Oerlikon. When the SBB, in 1913, decided to proceed with the electrification of the Erstfeld - Bellinzona section of the Gotthard line - with the same supply system as that used on the BLS - contracts were placed with all major suppliers for prototype locomotives and for generating equipment for the Ritom hydroelectric station and later for the Amsteg-Silenen plant. Oerlikon played a major role in this work in supplying high-voltage equipment for the generating stations and in 1919 prototype locomotives such as; an express locomotive of the type Be 4/6, an express locomotive of the type Be 3/5 for use on the valley section plus a heavy goods locomotive of the type Ce 6/8^{I}. The work spread over six years was delayed mainly by the First World War that ended in 1918.

During the next twelve years up to 1930 MFO produced over 280 locomotives for the SBB and more than sixty locomotives and railcars for the private railways. Bodies for these vehicles arrived at Oerlikon from mainly SLM Winterthur, SIG Neuhausen and SWS in Schlieren. With the ever upwards climb of freight tonnage over the main lines a request had gone out from the SBB for even more powerful locomotives and the BBC works had responded with the Ae 8/14^{I} which consisted of two type Ae 4/7 permanently coupled giving a rating of 5,152 kW. Oerlikon responded in 1932 with Ae 8/14^{II} locomotive number 11851 designed on the same principle and rated at 6,066 kW followed five years later with Ae 8/14^{III} locomotive number 11852 rated at 8,162 kW. This era marked the end of a contractor acting independently in design and construction, as from this period all the future contracts called for joint operations with BBC, SAAS and MFO. This was the beginning of the road to amalgamation of the companies.

Once again the dark cloud of war had descended upon Europe and new equipment for the railways was put on hold as much as possible. An order for new express locomotives had been placed in 1939 for a revolutionary locomotive. This was the 125 km/h Ae 4/6 (later nick-named the Gotthard Tram) built

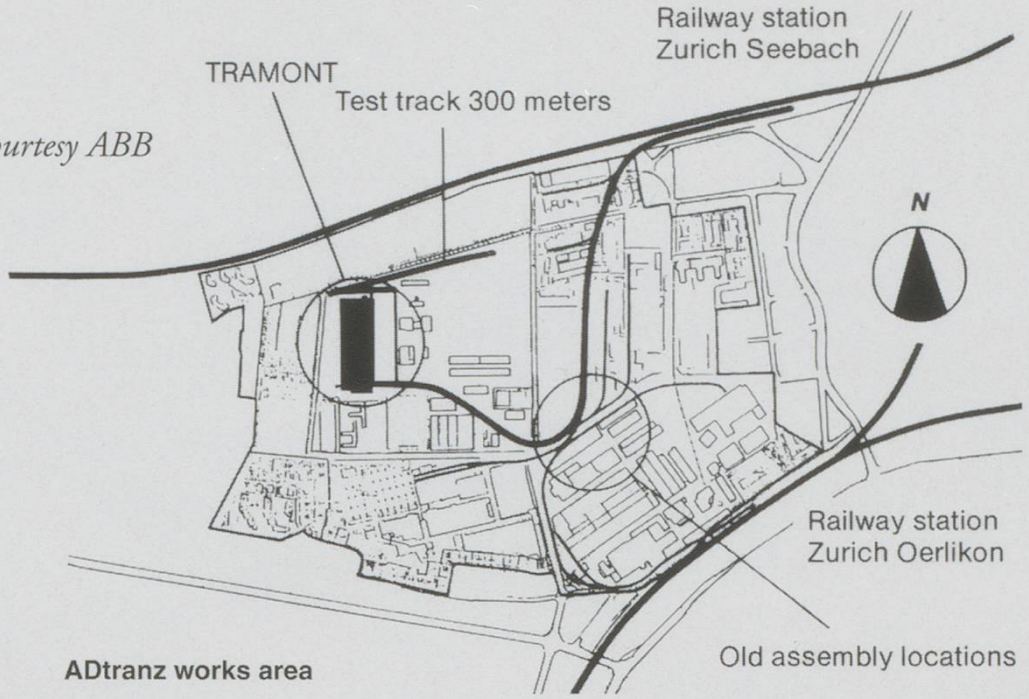


Diagram: Courtesy ABB

ADtranz works area

as a joint project with the other companies. Due to the war both MFO and BBC were having great difficulty in obtaining sufficient copper for the electrical equipment and so produced a locomotive class built with aluminium electrical gear.

After the 1939 - 45 war Oerlikon once again was overflowing with orders that included the locomotives of the class Ae 6/6, for use mainly on the Gotthard as a mixed traffic locomotive to be built as a joint project with BBC. Later came the Re 4/4 I, II & III classes of locomotives followed by the powerful Re 6/6 also built jointly with BBC.

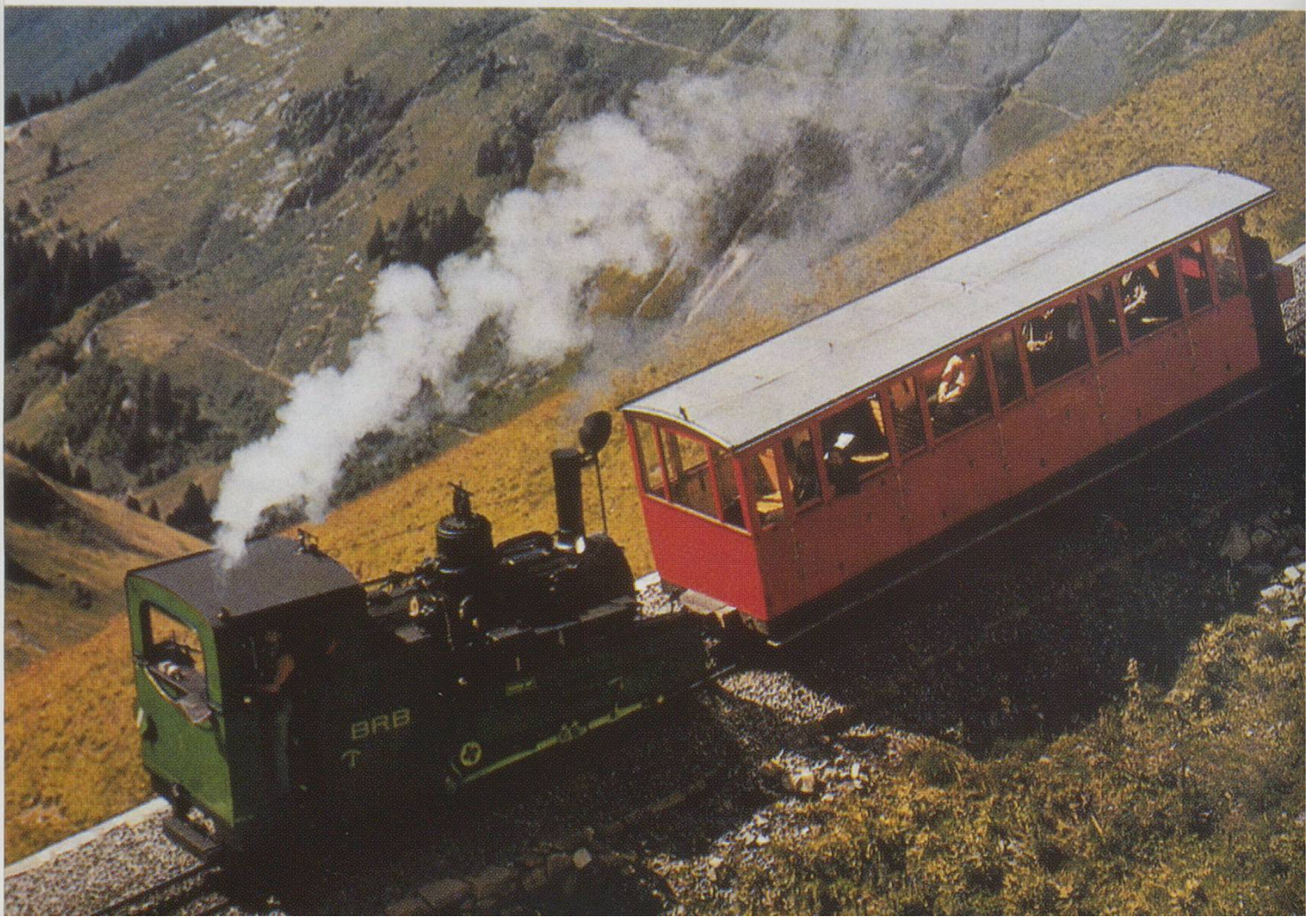
Whilst this work was in hand for the Federal railways, many contracts were being fulfilled on behalf of the private railways who were also undergoing a complete modernisation of their rolling stock. Amongst which were the locomotives of the type HGe 4/4[I] of the Furka Oberalp and the Ge 4/4 [I] of the Rhaetian railways. One contract of note was that for the outfitting of the RAe TEE sets for the SBB. These five coach trains were to be used on the TEE network between Switzerland, Milan, Paris and Bruxelles/Amsterdam and as a result would have to operate under 4 different catenary systems, but would also be capable of running under the German and Austrian wires with their wider zig-zag layout. The motor coach was fitted with four pantographs. Oerlikon designed pantographs No 1, 2 & 4 to work on the various power levels that would be encountered on the TEE network but pantograph No 3 would only be used on the narrow zig-zag wiring of the Swiss railways.

BBC, who in 1911 took over the Münchenstein plant from Aloithe & Co, amalgamated with MFO in 1969. All traction work from the Münchenstein plant and BBC Baden was concentrated into one works, located at Oerlikon. A new company was formed to oversee all contracts for railway locomotives and trolley buses called BBC Transportation Systems and based at Oerlikon. In 1970 the various companies that had formed in 1918 SA des Ateliers de Sécheron in Geneva were also taken into the BBC fold, and electric traction work was transferred to Oerlikon. The arrival of Asea in 1988 as a major partner in the consortium brought a new dimension to the industry, as this linked four major European companies together to form Asea Brown Boveri or ABB - some years later Daimler Benz from Germany joined the consortium which then became known as ADtranz and based at Oerlikon.

The order book for ABB for railway locomotives from Oerlikon was full, thanks mainly to the plans for Bahn 2000. During ninety five years the site in Oerlikon had been contracted to produce locomotives for the Swiss Federal and private railways - as well as many large contracts for overseas - from the diminutive Ce 4/4 of the Seebach-Wettigen line to the worlds most powerful single unit locomotive the SBB Re 6/6. Its cramped assembly facilities were by now becoming unable to cope with the demand for new rolling stock and so a new site had to be found that would allow the company to expand. The site would have to provide enough space for expansion, testing and allow connection to the railway network without disruption to the surrounding area.

(To be continued in the next Swiss Express)

Two AGM Photographic Competition winners from Lester Weeks. ***Above*** *is the Gotschnagrat from Klosters Dorf which won the scenic section.* ***Below*** *is BRB no. 1 descending from the summit which won the railway section. Entries were judged by Chris Harnett from MITV.*



***Above** is another winner from the AGM, humourous section this time, Gerry Savine took the photo which is entitled - " And you thought snow was the only problem!"*
***Below**: Woman's eye view of train spotters!. A photo stop at Brail Viaduct on the Engadine. A great picture taken by Margaret Noble*