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# *The Crocodile celebrates its centenary this year* - Part Two

Bill Salter



An unidentified Be 6/8<sup>II</sup> follows the Rhein near Stein-Säckingen .

Photo: Bryan Stone

The first article (*Swiss Express* 139) described the development and construction of the legendary Crocodile and their first years in service during the 1920s. This article looks at their later careers, the modifications of the 1930s, their duties once they had been replaced on the Gotthard by the Ae 6/6; their withdrawal and for some, preservation.

## **Rebuilt of Ce 6/8<sup>III</sup> to Be 6/8<sup>II</sup>**

Although the first series of production Crocodiles were partially replaced on Gotthard duties when the Ce 6/8<sup>III</sup> appeared in the later 1920s, the traffic duties they fulfilled were no less demanding. Gradually this took a toll on the traction motors and failures in service became more common. As an immediate remedial measure the electrical equipment manufacturers Maschinenfabrik Oerlikon (MFO) suggested a modernisation of the motors using the latest knowledge available. This enabled an increase in hourly power rating from 1650 kW to 2700kW.

SLM Winterthur was similarly requested to update the

mechanical parts. The frames were strengthened and new springs provided for the drive from the electric motors. Additional buffer beams were added. The modified Ce 6/8<sup>III</sup> were two tonnes lighter and 60mm longer and had a top speed of 75 km/h, rather than 65 km/h and hence were reclassified Be 6/8<sup>II</sup>. They could haul a 520 tonne trailing load at 45km/h on a gradient of 26‰. The rebuild was carried out between 1942 and 1947 and was limited to thirteen locomotives which were renumbered 13251-13259, 13261 and 13263-13265.

During the 1930s those Ce 6/8<sup>III</sup> that remained in original condition were transferred to lighter duties in the lowlands and were allocated to Lausanne, Basel and Zürich depots.

## **Ce 6/8<sup>III</sup> and Be 6/8<sup>II</sup> - Wartime and after**

At the beginning of the 1940s most Ce 6/8<sup>III</sup> and Be 6/8<sup>II</sup> were again to be seen in action along with the second generation Ce 6/8<sup>III</sup> over the Gotthard. Goods traffic between the Axis powers Germany and Italy was significant. There were heavy coal trains from Basel to Chiasso (and also from Basel to Bern-Wylerfeld), where they were handed over to the BLS for onward despatch over the Lötschberg-Simplon route. Eight machines remained at Lausanne and covered practically the rest

Be 6/8<sup>II</sup> No. 13315 at Olten.

Photo: Bryan Stone





of the SBB main line network.

Relief from Gotthard duties came with the introduction of the new Ae 6/6 universal locomotive over the period from 1952 to 1966. From then on they were mainly to be seen on duties in the lowlands. The final examples left Erstfeld and Bellinzona depots in 1963/64 and were transferred to Zürich. They were then predominantly to be found hauling heavy stone trains for the then numerous autobahn construction sites throughout Switzerland. To protect the motors the top speed of Be 6/8<sup>III</sup> was restricted to 65 km/h. The non-modernised Ce 6/8<sup>III</sup> went to Lausanne, Zürich and Biel. In 1963 notches 18-23 were isolated, again to protect the traction motors. Later an instruction was given to stop using the recuperative brake. In 1965 twelve were modified for shunting service in marshalling yards. (Note 1) Withdrawal of the class started in the mid 1960s. The last example not required for shunting was finally withdrawn in 1971. The last shunter (14276, subsequently preserved) ended its career in May 1982.

The SBB demanded a lot of the Crocodiles. Each Be 6/8<sup>II</sup> and Ce 6/8<sup>II</sup> averaged some 4 million kilometres in its service life, 100,000 km per year. Maintenance costs were high and a machine used on the Gotthard averaged 55 days a year in works for repair at Bellinzona.

### Ce 6/8<sup>III</sup> in later years

In 1953 the top speed was increased to 75 km/h and in 1956 the class was redesignated Be 6/8<sup>III</sup> and renumbered 13301- 13318. This new top speed was only possible however with a good run on a flat or falling gradient. With the maximum allowed 520 tonnes on the drawbar on the steeper Gotthard sections, the driver had to content himself with a climb at a steady 30 to 35 km/h.

As with their elder sisters, the Be 6/8<sup>III</sup> were to be replaced on top link Gotthard duties by the Ae 6/6 during the early 1950s. By the end of the decade they were all based in Basel. From there they hauled freight trains throughout north and central Switzerland, as well as to Romanshorn on the Bodensee. They ran an average 355 kilometres each day. A less strenuous duty was the short transfer workings between Basel SBB, the Rhein ports and Basel Badischer goods depot.

In 1966 all eighteen were transferred to Biel. From there they worked in western Switzerland, Valais and Jura. The first five were withdrawn in 1967. They donated their switchgear to Ce 6/8<sup>II</sup> modified for shunting duties (see previous section).

In 1970 eight machines were transferred to Zürich. There they joined the still extant Be 6/8<sup>II</sup> in one final heavy task in which they could display what they were capable of – the construction site traffic referred to above. A frequent duty would be fifteen loaded stone wagons, total weight 1200 tonnes, from Zweidlen or Hüntwangen-Wil on the Rhein



TOP: An unidentified Crocodile on freight at St. Gallen.

MIDDLE: Prototype Ce 6/8 14201 at Olten.

BOTTOM: Tanker train at 'Stein Säckingen'. Photos: Bryan Stone

close to the German border to wherever required over a maximum permitted gradient of 12‰. On Sundays they had the day off resting at Zürich depot where they were often sought out by photographers.

The first to be withdrawn was 13318 in June 1967 and the last Basel-based 13305 in 1977.





ALL PHOTOS: Ce 6/8<sup>II</sup> 14274 at St Triphon in 1976.

Photos: Martin Fisher

### Crocodiles in preservation

Of the first generation six escaped the breaker's torch. No. 14270, one of the Ce 6/8<sup>II</sup> not converted for shunting duties, stood partially dismantled and plinthed at Erstfeld

from 1982 to 2013. On 13 January 2013 it was lifted by two rail cranes and transferred to the depot. Ownership then transferred to Club 'Oerlikon Industrial History' and on 31 March 2017 a test run to prove its rolling fitness took place. It was top-and-tailed by the two historic Ae 6/6 11402 and 11411 for a return trip from Erstfeld to Gurtellen. This was satisfactory and enabled the machine to be transferred by rail to Biel, where it received a cosmetic refresh before reaching its current home at Zürich Oerlikon in a glass-sided building on the new development of the former MFO site, as a monument to the industrial history of this location.

No. 14253, withdrawn in 1976 as Be 6/8<sup>II</sup> 13253, is today preserved in working order by SBB Historic in Erstfeld and carries its original brown livery and classification Ce 6/8<sup>II</sup>. Green-liveried 13254 is in the Swiss Transport Museum in Luzern.

Immediately after its last journey for SBB in September 1978, Be 6/8<sup>III</sup> No. 13257 went to Austria, where it is visible in non-operational condition in the roundhouse of the Südbahn museum at Mürrzuschlag at the foot of the Semmering south ramp.

Two of the "shunter" Crocodiles were acquired by a member of the Verein Historische Eisenbahn in Frankfurt/Main in Germany. No. 14267 is in the technical museum at Speyer and No. 14282 can be seen in the excellent Auto und Technikmuseum in Sinsheim. Finally Ce 6/8<sup>III</sup> 14276 went after withdrawal in 1986, to the Club del San Gottardo at Mendrisio.

Of the second generation of Crocodiles only two survived into preservation. No. 13305, withdrawn in 1977, was overhauled and preserved by SBB Historic as Ce 6/8<sup>III</sup> No. 14305. It is maintained and housed at Olten. In September 2015 she spent time in Sweden at the 100th anniversary of railway electrification in that country. After a longish stay in Meiningen she returned to Switzerland in November 2017.

Sister locomotive 13302 is now in the hands of Modelleisenbahn Club des Bezirkes Horgen (MECH), who keep it in serviceable condition. Both 13302 and 14305 are equipped with ETM-S train protection and can be seen on historic trains throughout Switzerland. As was mentioned in the first part of this article, SBB Historic planned to celebrate 100 years of the legendary 'Crocodile' locomotive on 19 October last with runs between Erstfeld to Bellinzona and back, behind 14253, 13302 and 14305.

**Note 1:** The modified Crocodiles were 14267, 14269 and 14274 – 14283. 14260 and 14262 were renumbered 14284/85. 