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# Geneva Cornavin in 1966 - and Paddington!

Bryan Stone



ABOVE: 10851 at Yverdon in 1972.

LEFT: 10851 on Genève depot.

Photos: Bryan Stone

On the 19th November 1966 I arrived in Genève on the 08.34 'omnibus' from Nyon, behind Ae3/6 I No.10701. My connection was to Lyon Perrache at 10.48, so I asked to visit the locomotive depot. Things being then more informal than today, I was made welcome at once and shown around. My notes show eight locomotives (it was really only a stabling point), but one engine was there which I never saw in service: Ae 4/6 III No.10851. Subsequent reading confirmed that she was little used, but she had a purpose in life, and she had a remarkable past.

No.10851 entered service in summer 1961 and was intended to deliver experience for the 4-current TEE units that the SBB was building to run under Swiss, German, French and Italian catenary. She did not however help much. Between the decision to build 10851 in 1958, to entry into service in July 1961, the RAe TEE units had been built and were already carrying passengers. No.10851 never even made it to the Italian system remaining a three, and later one, current engine. Her duties were around Genève on local exchange freight between SNCF and SBB/CFF, on 1,500 V dc and 15,000 V ac, and, when either of the SBB/CFF 1,500 V dc railcars Nos.1301/1302 failed (which was not unusual), to run passenger services to La Plaine with two coaches and a Fourgon. She was universally unloved, something which started on her trial run in 1961 from Zürich to Rapperswil, when extremely rough riding led to several

enforced stops. In 1964 she had some jobs during the Lausanne EXPO, but still only ran 2,300 km in that year. Eberhard (in LOKI Spezial: 1996) reports that she ran 29,000 km in 1965, not dramatic but a lot of local running. She was, interestingly, officially kept in a shunting engine diagram with the Ee3/3 IV multi-current engines. In 1976 a transformer failure meant that she could only run on 1,500 v dc, meaning no more freight, and finally, after a few more years, the all-too-frequent workshop visits, and repairs to cracked bogie and main frames, led to her withdrawal in 1978 for scrap in Yverdon shops.

So, what was it all about? No.10851 had a past. The frames and traction motors were those of a private venture built by Brown Boveri in 1941, that ran as SBB Am4/6 No.1101 - the Gas Turbine. No.1101 was planned in 1939 and built to enter service in 1941. How did they get the materials at the time of Switzerland's National Emergency, our WW2? With the help of the SBB, Brown Boveri (BBC) was planning ahead for the time when mainline steam would be no more and Switzerland was not the only objective. The third electrification programme was finished. Some 361 steam engines were still running at the start of 1941, but over 70% of the system was electrified. More significant, BBC knew that efficient turbine performance demanded stable long-haul running on heavy trains.


No.1101 looked like the Bo-Bo diesels of 1939, and used similar body and cab modules. The main frame, held two driving axles, driven by gearing from frame mounted electric motors. Outside these at each end there was a bogie, with a motor driven geared axle and a carrying axle. The driving wheels had a diameter of 1,230 mm. The gas turbine was mounted longitudinally with its generator in a further frame, which ensured rigidity in a potentially flexible locomotive.



The gas turbine had an axial compressor driving shaft and turbine. A turbine speed of 5,200 rpm, gave a generator output of 2,000 hp. Starting tractive effort was 13,000 Kg.

Everything was an experiment. Operation was complicated, with starting up taking several minutes, switching over from diesel oil to heavy fuel oil when well warmed up. Before attempting to move a heavy train the driver also had to select a high rotational speed, taking some time to run up. There was an auxiliary diesel engine, which an assistant had to supervise. Adventurous is the report, that on a long downhill stretch, the turbine could be stopped, and the diesel started to provide lights, brakes etc, and power so that the turbine could be started again when needed. The auxiliary diesel was also enough for light running. To add to the fun, the performance of the turbine depended on altitude and outside temperature, so surprises could occur. Failures were mostly through handling errors and overheating, but with special training, attached to Basel depot, and with BBC supervision, some impressive performances were put up. Between 1943 and 1944, some 50,000 km was run without failures. In 1947 No.1101 ran some 50,000 km on express trains between Basel, Zürich, Bern and Luzern. The engine would indeed 'go'. Some failures were not the fault of the

turbine; cracks arose in the main and bogie frames, but SBB's acute motive power shortage after the war kept her hard at work. Later came two important proving trials, on the SNCF between Basel and Paris Est, and on DB between München, Würzburg and Nürnberg - for a month working an '01 Pacific' duty.

But Paddington? Well, the GWR was impressed and in 1946 ordered a 2,500hp gas turbine from BBC. This later became BR No.18000, and ran for some 10-years. In 1958, as a student in London, I would see, or more often hear, No.18000 in Paddington. I little thought that only a few years later I would see, in Genève, the last relic of Switzerland's own gas turbine. For in 1954, after its few years of service, severe overheating damaged the turbine irreparably and No.1101 was set aside, but in 1958 it was retrieved to become the experimental multi-current electric No.10851. If No.10851 was something of an embarrassment No.1101, despite its idiosyncrasies, was relatively successful. She ran 410,000 km as a gas turbine. There are few pictures, but she was a real presence. To see what was left of her was why I had asked to visit Geneva shed in 1966, and I found No.10851 there. I saw her once more, out of service (as so often) outside the shops at Yverdon. 

## THE CENTOVALLI IN THE SNOW

Regular Swiss contributor **Christian Ammann** visited the Centovalli line in early March when much snow was still in evidence. He kindly sent us some images, mainly taken in Santa Maria Maggiore, but also at Dissimo-Folsogno and Olgia. At the former he saw some of the older stock on local trains, the spaceship like panorama stock, plus the old unit permanently on the plinth at the station. 