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# TOWARDS RAIL 2000 and EXPO 2001

George M. Hoekstra

The next two years will bring quite a lot of changes to the Bienne - Yverdon main line along the Jura in the french-speaking part of Switzerland. One of the prerequisites for the Rail 2000 timetable is the need for the running times between Zurich and Lausanne to be equal via Berne or Bienne. The line via Berne will be speeded up by building two new long straight tunnels for high speed running. To cut down on the running time via Bienne, there are two possibilities. The first one is building a totally new running line, the other is making use of new stock, which can run faster on existing lines by means of tilting in the curves. As the latter is cheaper in the short term it comes as no surprise that the politicians opted for the tilting trains. Similar situations abound in other countries. Luckily, the planners were

persuaded to make some improvements to the existing track as well. It was constructed over 140 years ago at a time when speeds of 40 - 70 kmh were fast and in some areas is still single line. At the moment work on both these solutions is in progress. The extra traffic generated by Expo 2001 (Switzerland did not want to join all the other countries with yet another "Millennium" type exhibition in the year 2000), to be held in just this area, will also mean any extra new stock of whichever type will be very welcome.

Elements of both improvements were presented to the press within a few weeks of each other. The 4-car pre-production set of the new Swiss-built "Inter City Neigezug" tilting train (ICN) is just about at the end of a thorough testing programme, during

*The 4-car test set on the still single line along Lake Bienne. This line is really squeezed in between back-yards and an emergency parking area on the road, the slogan on the roof reads - "Permitting the Future".*

*Photo: SBB*



which extensive changes were made to both the mechanisms well as to the software controlling it. Your correspondent was able to sample the result on the press run, Maximum speed with the tilting mechanism in operation was 145 Kmh, quite a lot higher than the normal speed on this line today. The running is superb, due mainly to the air suspension. Other tilting stock still relies on spring suspension for some reason. The tilting is smooth and as long as you do not stand up too long and put your centre of balance, which is behind your ear, above the zero-line calculated for sitting passengers, you feel OK.

In common with all tilting trains looking out of the window and seeing the lakes of Bienne and Neuchâtel go up and down might induce a feeling of sea-sickness. Also in common with other tilting stock, is the need for the sides of the coach to bend slightly inwards (in order to stay inside the permitted maximum profile during tilting). As I am not exactly a small person, the window seat is a bit cramped for me and I have to be careful not to hit my head on the baggage rack, when I stand up!

Some facts about the production 7 car sets:

Total length: 188 m.

Maximum speed 200 Kmh.

Total seating capacity a hefty 463.

The latter is about 100 seats more than comparable sets in other countries and was necessary to keep the costs per seat down so that in turn the trains will be accessible without a supplement. To make this possible most of the equipment is under the floor. Of the seats, 131 are 1st Class including a whole non-smoker coach. Of the 326 seats in 2nd Class, most are in three entirely non smoking coaches. There are 6 tip-up seats in reserve and in the middle of the train is a restaurant with 24 seats. For the handicapped, there are a total of four com-

partments in 1st and 2nd class which can accommodate wheelchairs. One of the six toilets, as well as the restaurant, are also wheelchair accessible. Furthermore there are small crew and baggage compartments and even two bicycle-platforms in the driving trailers!

As far as the track is concerned; there is a lot of construction on the narrow and sometimes steep banks of Lake Neuchâtel, between the city itself and Yverdon. The work of doubling and straightening the track, as well as the construction of a new motorway, are going on at the same time. They sometimes cross over each other (underground as well, with only a few metres separating the two). All this means a lot of very interesting construction sites. Unfortunately for the locals, the regional trains between St. Aubin and Yverdon had to be substituted by a bus service during this years timetable which, together with several detours on the road due to construction, adds rather a lot to the travel time. On the 27th of May, the two track tunnel "St Aubin-Sauges" between Gorgier - St. Aubin and Vaumarcuse was opened in true Swiss style with an open (and walk through) day as well as an official first run-through by train for the politicians and the press.

Then the main event. A festival for all with lots of white wine, after all we are in the French speaking part of Switzerland. The politicians and the press meanwhile were treated at the nearby Château de Vaumarcuse. - And very nicely too - "un grand merci aux CFF, Communes et Canton"! As a civil engineer myself, the bike ride afterwards up and down the newly opened bike-trail, past many of the construction sites to the new underground station of Concise, was very interesting and got rid of some of the calories. But it gave me muscle ache for days . . . .



*Above: A view from the cab. Just about the entire line along the Lake Neuchâtel is one continuous building site!*

*Photo: SBB*

*Below: One more stage completed! Freshly baptised (with the local wine of the same name, the "caves" of which can just be seen on the left, above the tunnel) locomotive 460 059 9 "La Beroche" breaks the ribbon*

*Photo: GMH*

