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REAL-TIME PASSENGER INFORMATION ON THE ZVV

George Hoekstra

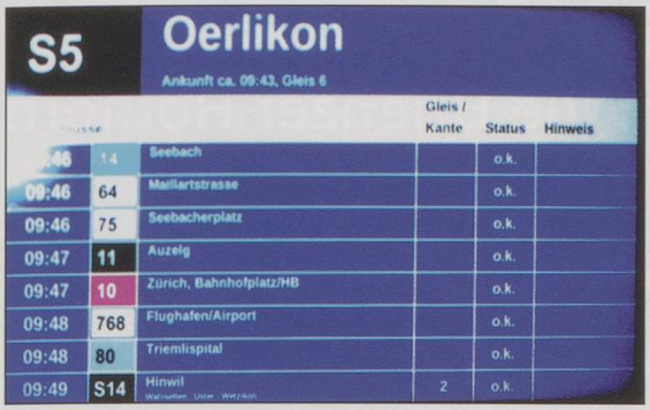
S14 going to Hinwil. Beneath, on the right is the system map. On the left is the real-time information screen. Above: next stop Hinwil, arrival (actual) 14.22. Below it are the connections. We are way out in the country, so there are only two: at 14.29 the 869 Bus (white block) to Wetzikon Station and at 14.30 the 870 Bus to Rüti ZH. At 14.42 the AG (Angemeldete Gruppe = pre-Booked Group, which was our lot!) would depart to Bauma (Heritage train), a short walk away. The column "Hinweis" (notice) is empty: the train is on time.

ALL PHOTOS: George Hoekstra

At the beginning of this year I was one of only a handful of journalists invited to the two-day symposium IT 10 RAIL, held at the Zürich Polytechnic University where one could choose from two or three presentations on problems and solutions in handling passenger traffic on the railways. It was organised by the Zürich based consultancy SMA + Partner and attended by over 200 European transport professionals. I am indebted to Ms Claudia Wirz for arranging my attendance and supplying me with additional information. With such a vast choice of events I had to carefully select my attendances. But for this report, I can only skim the surface and concentrate on the sole subject of the real-time visual passenger information on the ZVV, the integrated transport system of the Region of Zürich.

As is well known to our readers, one of the main reasons Swiss public transport works is the attention given to connections. The main difference to taking your car is that public transport usually involves more than one individual journey. This is why everything about the connection is crucial. One of the main difficulties is the time needed for the connection. To get more time, you can speed up the trains between the connecting nodes, or you can speed up the passenger flows at the nodes. An interesting cost ratio to achieve a one-minute saving by various improvements was given. Improving infrastructure - 100; faster (tilting) trains on existing infrastructure -10; improving passenger/ exit) and in stations (enough space for free flows, good information) – 1. It is clear where to start! However, before you get to the connecting point you must know what time you will arrive; if you are on time; how to identify your connection; when and where it will leave from. Most importantly, if you are running late, will the connection be held and if not, what is your next possibility? The ZVV wanted a system that would show all this information, in real time, on every S-Bahn train, tram and bus running in their region.

Sometimes, you can get too much information. At this ticket machine at Hinwil, no less than five possible routes are given to the poor traveller trying to get to Zürich Airport! And to cap it all, he could even suggest another route (bottom)… Remember, only infrequent travellers use these machines. All others have seasons, use day tickets or have all-in tickets.

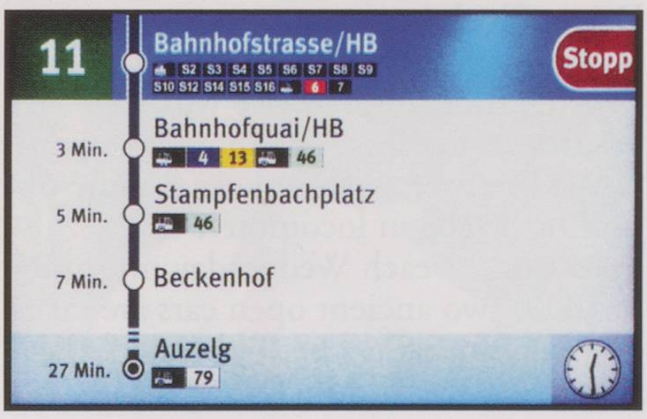


And back to the displays. We are on the S5. Next stop (Zürich-) Oerlikon, arrival ca. (=about) 9.43 on track 6. About means plus or minus one minute: the exact time cannot be given in the extreme dense Zürich traffic. Connections are given for seven trams and buses: 14, 11, 10, 64, 75, 768 and 80 (the colours correspond to the route colour on the trams or buses); and one train: S14 at 9.49 to Hinwil on track 2. All are o.k., we are on time.

The first thing to do was the easiest. As Zürich already had a fully integrated system of connections, it had to be put into a computer program. Next came pinpointing the exact position of every vehicle. Here too use could be made of existing technology. For signalling purposes trains in dense areas like Zürich are already tracked, while trams and buses have a similar, but simpler, system. Due to the tens of- thousands of connections, decision making in case of delays had to be automated, with partial manual override. Then the communication with the drivers; due to the huge amount of information, the only solution was a system of text messages on a dedicated network. Passenger information to the screens is sent in a similar way. The design of these screens was important too; all pertinent information must be shown in a quick-to-comprehend form.

At the symposium, we were shown in detail how everything works, including a visit to a signalling centre to show how a modern dispatcher operates and how the automated connection system works. For a delay of up to 3 minutes, the system automatically holds the connection, informs the driver and adjusts the passenger displays. Between 4 and 10 minutes delay, the system

On 25/3/ 2010, I was surprised to see this red Bern "Combino" No. 659 in front of Zürich Hauptbahnhof ...

normally breaks the connection, but the dispatcher can manually override. Again, drivers are informed and displays adjusted automatically. Delays of over 10 minutes cannot be held. The system informs the driver and sends the next possible connection to the displays. It would fill the entire magazine to tell you all about it as the problems in coordination and technology are huge and they are still working on them, but they have certainly come a long way. But do not take my word for it, go ride the S-Bahn (especially S5), trams and buses in the Zürich area and see the progress for yourself. I am sure many other regions will take it on – once Zürich has paid most of the cost of developing it and getting the bugs out…

... so as a "Berner", I just had to get on and found to my surprise it was fitted with the standard tram display. Top line: line 11 (green), next stop Bahnhofstrasse/HB, train connections (only S-Bahn, this system is for Regional transport): S2 – S16 and trams 6 and 7. The "stop" button has been pressed. Then the next three stops and their connections are listed, together with the expected travel time of 3, 5 and 7 min. On the bottom is the final destination "Auzelg", which will be reached in 27 min. Finally, there is a clock: actual time is 12.29. Surveys showed people prefer a conventional clock face!