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BLS Operations Control Centre

Boyd Misstear



The BLS OCC at Spiez in June 2018. Photo: Boyd Misstear

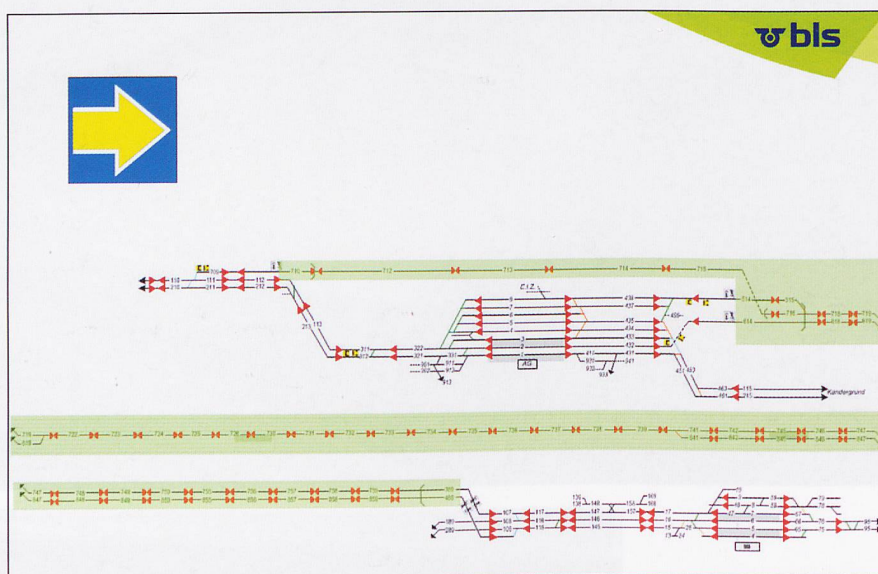
The BLS traces its origins back to 1835. Today the BLS Group comprises six main entities, namely:- BLS Cargo AG; BLS Network AG; BLS Transport; Busland AG; Emmental Tours AG; and BLS Property. AG Special business areas include Car Transport (Kandersteg / Goppenstein and Kandersteg / Iselle Autoverlad) and boat service on Lakes Thun and Brienz. In 2017 BLS carried 62.8m passengers by train and buses, and a further 1 million by boat. The car movements totalled 1.18m, while the number of cargo-carrying trains operated was nearly 18,000. One piece of information that might be of interest to our electromotive members, the traction energy consumption was some 245 Gigawatt hours!! All the above activity resulted in an operating income of CHF1.043m with a reported group net profit of CHF15m after depreciation and taxes. The BLS Group employs some 3,100 people.

From a railway route network perspective, there are some 520km under operational management, of which 420km are owned by BLS. The network incorporates some 119 owned stations and stops; 57 tunnels (including both the 15km Summit and 34km Lötschberg Base Tunnels); 726 bridges (probably the most famous being the Bietschtal); 950 points/switches; 719km of overhead lines; 93 signal towers (as distinct from a greater number of signals); 1,000 km of fibre-optic cable; 51 locomotives/railcars and last but not least, 375 buildings.

So how is the BLS Operations Control Centre (OCC) positioned within the Confederation? Across Switzerland there are five standard gauge OCCs with the responsibility to cover the whole of the country's standard gauge network. Four owned and operated by SBB, known as BZ

West located in Lausanne; BZ Mitte located in Olten; BZ Ost located at Zürich Flughafen; BZ Süd located at Pollegio and the fifth is BZ Spiez owned and operated by the BLS. As you would expect, interconnect and fall back arrangements are in place. The network controlled from Spiez is shown in the accompanying diagram and extends from Delémont in the north all the way to Domodossola in Italy, resulting in operational responsibility for some infrastructure not owned by the BLS. The operational control is constantly evolving through a modernization program to incorporate curremote and staffed stations.

The Spiez OCC has four key tasks: Technical Control; Traffic Operational Control; Traffic Management (Disposition) and Short Term Planning. These activities are under an organisation comprising Passenger Information; Traffic Manager; Traffic Controller; Systems Controller (Catenary/Tunnels/etc.), all reporting to a Head of Operations. As with all live control centres, emergency management, for whatever reason, be it rail/road traffic, flooding, derailments, is all part of the daily activities. To support this, Spiez is responsible for the Fire Brigade and Emergency Train located at



Kandersteg, which a number of members were fortunate to visit during a Study Tour in 2011.

There are a number of automated control devices deployed across the BLS network including lorry/container profile and antenna location detection systems. These are especially important for freight load and lorry transporting, to make sure nothing reaches outside the safe loading gauge, that could snarl, or worse, short the overhead catenary and cause

tunnel interference/fires. There are also wheel detection, hot axle, fire and chemicals, dangling items, etc. detectors. Trains are automatically diverted and stopped for inspection if these devices detect anything abnormal. A decision is then taken as to what corrective actions are required and when to allow the consist to proceed and through which path, for example via the base tunnel (*see track layout*) or over the summit old route in the case of the Lötschberg.

Readers will be aware the Lötschberg Base Tunnel is still only partially complete, however open sections are equipped for ETCS Level 2 operation and the accompanying diagram shows the paths equipped for working both ways. Reversing options, speed supervision, traffic optimization, automatic emergency reactions; emergency modes; emergency stopping stations and so forth, are all deployed and under the control of Spiez OCC. The traffic levels reported are now reaching the throughput capability of this sub-equipped and incomplete infrastructure, and the BLS is still very interested in completing the intended twin bores throughout. The attached illustrations show the weekly schedule for full and partial maintenance occupancy and the restrictions placed on traffic movements.

It was pointed-out that even with all the modern evolving computer control it still takes upwards of some 10 years hands-on experience to become fully proficient and to understand all the complexities of controlling a modern transportation network. Again, through experience gained, controller shifts are set to 8 hours with a strict maximum of 20 minute break(s); any longer and controllers feel they lose sight of the larger picture of events evolving in front of their eyes on a myriad of video screens, since a control action necessary in one location can have the potential for significant repercussions elsewhere on the network.

Roger Ellis organized the Study Tour of the BLS Spiez (OCC) for a small party of SRS members in June 2018. Thanks are extended to the BLS, and especially to Martin Wyss, Head of Implementation, Operations Centre Business, who provided a very informative introduction to, and live explanation of the critical activities carried out on a minute-by-minute basis each day, outside the travelling public's and freight haulier's knowledge. 🇨🇭

