

# SBB Cargo's „Hub-And-Spoke“ Revolution

Every day SBB Cargo moves 6,000 wagons and 205,000 t of freight on the Swiss network. A strategically important component in this system is the movement of individual wagonloads (Wagenladungsverkehr, WLV) over quite short distances. In a major business procedure reorganisation, on 11 December 2016 SBB Cargo introduced a new three-period collection and distribution structure for wagons over a 24-hour period. Rail freight services are then integrated in the regular-interval frequencies of passenger services.

Most freight movements on the Swiss rail network are between 100 and 400 km in length. Such types of freight movement are not, by European standards, really considered the types which rail is normally intended for. Yet rail's WLV share of all freight movements in Switzerland is **25 %**, which is considerably higher than that for other European countries. Three factors contribute to this:

- the considerable congestion on the Swiss road network,
  - no night driving is allowed for HGVs between 22.00 and 05.00,
  - the Government, industry and commerce are all conscious of the need to reduce CO<sub>2</sub> emissions (many Swiss companies incorporate in their Mission Statements the need for CO<sub>2</sub> reduction, and they push this case).
- In the past SBB Cargo used to collect all freight consignments from around 1,300 client locations **overnight**, then delivered these consignments during the next and subsequent days. This system is no longer market-orientated. The railfreight market is tending nowadays more towards logistics and the transport of consumer goods, on account of the lengthy decline of heavy industry in Switzerland. Clients now require regularly scheduled freight services, with a greater degree of flexibility built into the operations.

Therefore SBB decided to develop a „**hub-and-spoke**“ railfreight network (known as WLV 2017) to encourage the development of the wagonload market sector. The immediate benefit of the „hub-and-spoke“ system is to substantially increase the number of

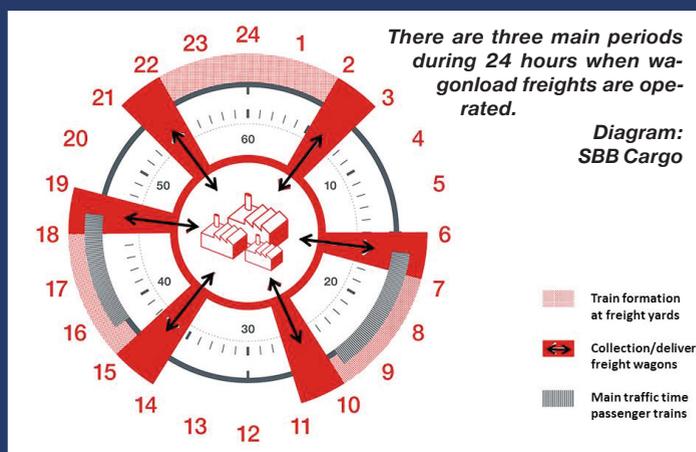
point-to-point services that can be offered for a given level of traffic. Numerous different freight flows are concentrated at one centralised and eight local hubs, and this increases the overall efficiency of freight movements. SBB Cargo's new WLV network involves the following steps:

- a three-period system for the collection and delivery of wagons over each 24-hour period,
- for time-sensitive products up to three services per day are offered to and from hubs,
- over 40 % of the pickup/drop off locations for wagons are provided with two or more services daily.
- during the morning and late afternoon/early evening peak periods for passenger services, when track capacity is at a premium, freight activities are **concentrated** on sorting wagons in freight yards.

By reducing activities at certain freight yards during the night it is possible to provide more time for infrastructure and track maintenance. The capacity of overnight railfreight express services has been increased by one third, and wagonload freights are integrated in the regular-interval timetables for passenger services.

Team Centres (known in German as Cargo-Produktions-Teams) are responsible for collecting and delivering wagons to clients. There are seven production areas (Produktionsbereiche) with 50 team centres, each with between 15 and 50 staff, in all 1,200 people.

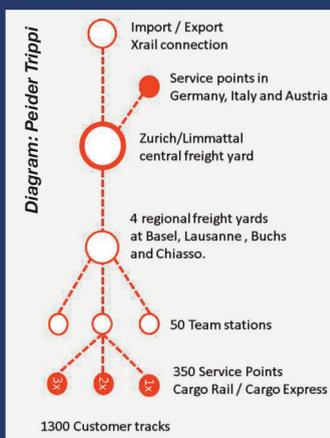
A new **reservation** system for consignments has been introduced, which is now integrated in SBB Cargo's



EDP (Electronic Data Processing) system. Clients now have a self-service booking platform to organise their point-to-point transport needs, and the deadline for requesting transport for consignments has been reduced to 90 minutes. Previously it depended on the ability of the SBB Cargo centres for accepting consignments. This depends, of course, on whether capacity is still available on the requested train (or series of connecting services).

Checking-in of wagons (final loading) is required as the second step in the booking procedure, to ensure that the consignment is then transported. Self-service booking is also needed for empty wagons. There is now a connection to the SBB Cargo's international Xrail Capacity Booking (XCB) system. Xrail is the international wagonload system.

A „Bonus - Malus“ (award/penalty) arrangement, applying to any changes made to a booking within 48 hours of



**SBB Cargo's „hub-and-spoke“ system connects industry and commerce all over Switzerland between one and three times daily. Using the international Xrail services various locations abroad are also served.**



Two Class Am 6/6 heavy duty diesel shunter, remote-controlled from a control centre, are used on shunting humps at Zürich-Limmattal marshalling yard. This is Am 6/6 18521 on 28 October 2016. The Class Am 6/6s are Co'Co' locomotives built in 1976 by Thyssen Henschel and BBC, and in 2018 will be replaced by new Prima H4 electro-diesel shunters.



This is the control room at Zürich-Limmattal marshalling yard, the „heart“ of the „hub-and-spoke“ system. Here wagonload freights are handled three times daily, involving the remarshalling of over 2,500 wagons.



**Team Centres are responsible for collecting and delivering wagons to clients, and at these centres Class Eem 923 hybrid shunters and Class Am 843 diesel shunters are used. This photo shows Eem 923 009 shunting at Flums on 16 August 2013.**

departure, is to be introduced in 2018. An extra fee may be levied for a cancellation, if SBB Cargo still has to realise the service or the train for which the consignment is booked has to run, but with a lower load factor as a result. If SBB cancels the transport of the consignment (for instance, as a result of technical problems or a train crew failing to turn up), a note of credit is issued.

The objective is to ensure that improved operating **economies** are attained, through:

- better utilisation of rail infrastructure and rolling stock assets,
- fewer Class Re 4/4 locomotives needed.

The latter is a consequence of routing freights via the Gotthard Base Tunnel and the savings gained on account of the WLV 2017 strategy. As a result about 20 of these machines have been made redundant and can be taken out

of service, this also reducing the need for 80 drivers.

The improved economic performance of wagonload and intermodal transport services will replace the current annual subsidy, which will end in 2018. This subsidy was around 23 million CHF in 2016 for railway undertakings providing freight transport in Switzerland, and the level of subsidisation is falling. The amount of subsidisation was not based on the needs of specific services, but is a general subsidiary for SBB Cargo for different issues, these including the currency rate of exchange.

Simultaneously with the introduction of WLV 2017, SBB Cargo reduced the number of WLV loading points - seven were closed on 11 December 2016. SBB Cargo has been reducing the number of WLV loading points since the turn of the millennium. There are now 350 such loading points, com-



Intermodal services are now gaining a foothold in the Swiss rail freight market. The SBB Cargo **Intermodal** (Kombiverkehr) service, which was reorganised in June 2016, uses 18 terminals throughout Switzerland. From the hub at Oensingen (halfway between Bern and Basel) there are timetabled services on four „spokes“ or routes. More and more forwarding and logistic companies are becoming integrated in SBB's system. SBB Cargo CEO Nicolas Perrin reckons that traffic is growing steadily, but has not yet reached the hoped-for levels. Nevertheless, one positive result is that the number of HGVs using the Swiss road network is being contained. One advantage of the GBT is that journey times on services traversing the Alps have been significantly reduced, making them more attractive for clients. The „Swiss Split“ service is designed to integrate international import/export intermodal services in the Swiss intermodal network. Intra Swiss intermodal freights run daily services on a number of routes, including some under 150 km. **This photo shows SBB Cargo's Re 4/4 11239 at Wassen on an Intra Swiss service on 28 August 2015.**

pared with 506 in 2012. SBB Cargo is also planning to develop wagonload traffic on international services to neighbouring parts of southern Germany, northern Italy and Austria.

The „hub-and-spoke“ system was developed by SBB over a three-year period, culminating in the operation of an **instruction** train starting in summer 2016. The objective behind this was to familiarise clients with the new system at their local loading points.

SBB Cargo's CEO, Nicolas Perrin, reckoned that much effort had to be put into the change-over to the new wagonload system. It is impossible to test it before it is introduced for real. That means that a lot of back-up will have to be provided by office staff to ensure that clients do not have any problems during the first days after it starts.

**Peider Trippi**

**Photos by author**



### **Vectrons For SBB Cargo International**

On 30 January 2017 the Luzern based lessor LokRoll, together with the Reichmuth Infrastruktur Schweiz infrastructure fund, ordered **18 Vectron MSes from Siemens, these to be fitted for use in Germany, Austria, Switzerland and Italy.** They will also be equipped with ETCS. Deliveries are scheduled to start in December 2017. LokRoll will lease them for a 15-year period to SBB Cargo International, a joint venture of SBB Cargo (75 %) and Hupac (25 %).

**Siemens**