International road-rail combined transport in Lausen, Switzerland on 22 April 2021. The train will cross to the left track. Photo © George Raymond.

Shadows and light in Swiss rail freight

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1 Introduction

Perhaps no other country on Earth is so linked with railways as Switzerland. Visitors see clean, frequent and punctual trains that seem to run everywhere. The Gotthard route through the Alps – and since 2016 a record-breaking tunnel under them – symbolise railway prowess. Observers may notice parades of trains carrying containers and truck trailers on some main routes. Transport professionals know that the Swiss railway network does not just move whole trains from origin to destination but also offers *wagonload* service for smaller wagon groups or even single ones.

In EU parlance, a company that provides traction for freight trains is a *railway undertaking* (RU). The RUs that operate in or through Switzerland face competition – with each other, with trucking companies and now with ocean shipping companies that may be subsidising their

own trains to squeeze out traditional, land-based RUs. Rail freight also competes in the political arena with passenger trains for space on the tracks. Public subsidies for wagonload are drying up. RUs struggle with the cost, capacity, availability and fragility of rail infrastructure both in Switzerland and neighbouring countries. Although the European Commission has been working for decades to make it easier for an RU's locomotive and train to run in multiple countries, some troublesome country-specific rules and constraints remain.

This is a report on a November 2024 event in Rotkreuz, Switzerland that offered a rare and wide-reaching view of shadows and light in Swiss rail freight. It was organised for the Swiss Railway Journalists (BJS) by members Kurt Metz and Peider Trippi.

2 International trains through Switzerland

Stefan Meixner, general manager of Umwelt + Transportlogistik (UTL) Schweiz, called Switzerland is a key transit bridge between northern and southern Europe. Rail freight benefits from strategic Swiss infrastructure projects such as the New Railway Link through the Alps (NRLA), including the 57-km Gotthard Basis Tunnel opened in 2016 and so-called P400 corridors for trains carrying 4-meter-high truck trailers riding on standard flat wagons with pockets for the trailer's wheels. He saw a growing demand for efficient and holistic transport solutions in Austria, Germany and Switzerland, even over short distances, that are also "sustainable" - i.e. save energy and reduce CO_2 and other emissions.

Bernd Weisweiler, director of business development of TX Logistik, which is part of Mercitalia, said that his company has big modal shift goals that take account of the growth of the whole freight-transport pie.

Dirk Stahl, CEO of BLS Cargo, said his company operates 150 locomotives in Belgium, Belgium, Germany, Switzerland and Italy.

UTL, TX Logistik and BLS all seek to capture east-west freight flows to Austria and eastern Europe in addition to the north-south corridors that have dominated historically. However, they did not mention a country at the *west* end of east-west flows: France.

3 Cross-border opportunities and challenges

Pierre Widmer, owner of Widmer Rail Service, said his RU's safety certificates in Germany, Austria and Switzerland (DACH) and Italy allow the handover of trains from one RU to another in convenient inland locations instead of right at borders as was traditional practice.

Mr Meixner of UTL saw market opportunities in the zone where the DACH rail networks come together. But differing technical standards make cross-border operations more difficult, he said. Such standards include pantograph width and the signalling systems that prevent train collisions. He called for more cooperation with DACH partners – including rail operators and public agencies – to harmonise and simplify technical standards and regulations, such as those for locomotive driver training. He noted that the best examples of cross-border cooperation arise in moments of crisis, but that afterwards the borders close again. One solution to overcoming cross-border hindrances is to have a sister RU in each country – provided they share the same traffic, which may be difficult.

For decades, the European Commission has been pushing deployment of standard ETCS signalling. But this effort is still incomplete. Mr Stahl of BLS Cargo called ETCS more a burden than a help.

Mr Stahl saw the following keys to maintaining BLS Cargo's competitiveness:

- Focus on optimising the company's business model as a cross-border corridor specialist, including multi-system locomotives that can run on ETCS as it progressively implemented.
- High productivity of personnel and locomotive resources, especially for cross-border traction, including longer and heavier trains (750 metres, 2000 tonnes).
- Building resilience to react to planned and unplanned traffic disruptions and market volatility. Developing concrete rerouting solutions.
- Customer orientation that offers a one-stop shop, proactive customer information and a readiness to develop joint solutions.

Mr Metz of the BJS saw a moderate trend away from national to international thinking in the railways.

4 Wagonload service

In Switzerland, wagonload service is essentially the responsibility of SBB Cargo, which has chronically needed public subsidies. Isabelle Betschart, SBB Cargo's head of production, described her company's strategy to become profitable by 2033 so it can reinvest revenues in its operations and "run under its own steam".

4.1 New operating plan

In wagonload service, marshalling yards sort wagons by destination. SBB Cargo plans to cut the number of daily waves in which wagons pass through marshalling yards from three to two. This will create time buffers for better reliability. Each wave will have collection, sorting/transport and delivery phases.

Network	Collection	Sorting/transport	Delivery
Day	Afternoon	18:00 to 6:00	Morning
Night	18:00 to 22:00	22:00 to 2:00	2:00 to 6:00

Under its new operating plan, the company will continue to serve all of Switzerland from nine hubs, but serve fewer points while still carrying 95 to 98% of today's traffic. The new plan promises more regular service, optimisation of locomotive rotations, more flexibility and thus higher volumes.

4.2 Rolling stock

Ms Betschart said that SBB Cargo will invest in maintenance facilities and rolling stock to become more flexible, efficient and reliable for customers and safer for employees. It will transition to just two types of wagon chassis. They will be equipped with modular cargo-carrying superstructures that can be changed as traffic requires. Central traits of the new wagons will be low maintenance and thus high availability.

Unloading a wagonload of barley imported from the Dijon area of France at the Feldschlössen brewery in Rheinfelden, Switzerland on 13 November 2023. It is equipped with the standard European standard screw coupler and buffers. Photo © George Raymond.

4.3 Prices and contracts

In the area of pricing, SBB Cargo's strategy is to meet customers' needs with long-term contracts and agreements on fair prices, including staged priced increases in the course of a transformation phase to 2030. Ms Betschart recognised the challenge of "telling customers what they get from rail" in a way that retains them despite 50% price increases in some cases.

On the basis of attractive offers, reliable cooperation and punctual operations, Ms Betschart said, SBB Cargo wants to become an indispensable part of customer supply chains.

Peter Füglistaler was head of Switzerland's Federal Office of Transport (FOT) from 2010 to 2024 and is now a consultant. He said that Swiss wagonload will only survive with stable

public support. Without public help for SBB Cargo, wagonload will die in Switzerland, leaving only block trains.

Public rail sidings where customers can transfer goods between wagons and trucks are being preserved, as only the FOT can approve their abandonment. But only a few cantons such as Thurgau are enthusiastic. All cantons must be involved.

Mr Füglistaler said that Swiss marshalling yards "thankfully profited from the trick of putting them into SBB Infrastructure." Like all European rail infrastructure operators, SBB's infrastructure division is publicly owned and funded as streets and roads are. Ms Betschart called the physical condition of marshalling yards critical, especially concerning worker safety.

Combined-transport trains carry containers and truck trailers (with or without wheels) between terminals. Mr Stahl said that BLS Cargo specialises in block trains, including combined transport, and has no intention of offering wagonload transport. Wagonload must be financially separate to ensure that public wagonload funding doesn't undermine competition in block train transport.

Mr Füglistaler noted that in France, the government has achieved such a separation by transferring the combined-transport trains of the former Fret SNCF to other RUs and placing its wagonload service in the new RU Hexafret.

5 Rail logistics and the Swiss sugar-beet harvest

Daniel de Jong, CEO of Trans Rail, described how in October to December every year, his company moves some 1000 trains carrying 400,000 tonnes of sugar beets to the sugar plants of Schweizer Zucker in Aarberg and Frauenfeld. This represents 40% of the plants' needs; the other 60% come by truck.

Beets are loaded at about 40 rail-served sites throughout Switzerland. Trans Rail operates some and partners others. Twelve electric and eight diesel locomotives shuttle some 400 wagons of various types in trains of 22 to 29 wagons. The company owns some wagons and leases others. Three permanent employees coordinate trains drivers hired from personnel agencies and other workers.

Planning the trains means reconciling conflicting objectives. Farmers want to keep their beets in the ground as long as possible. If the beets are harvested in wet weather, the sugar factories have more mud to clean off. Once beets have been harvested, they must get to a sugar plant fast or rot. This requires coordinating farmers' harvesting runs and the loading and movement of trains. The biggest challenge is short-notice adjustment of the rail transport plan in line with rainfall and temperature.

The harvest season is supposed to end before Christmas, but in 2024 it continued into the second week of January, so they had to find train drivers on short notice.

The modal split between truck and rail for the beet traffic is, like everywhere else, sensitive to their relative price. Trucks are easier to add or cancel on short notice. Were rail's relative price to drop further, Mr de Jong said, it could carry up to 50% of the beets instead of its current 40%.

In 2020, Trans Rail took over the sugar beet harvest from Sersa and another RU, who had found that the harvest campaign entailed too much complexity and intense work. An RU needed to step forward that could make the beet harvest its core business. Trans Rail has done so since 2001, when it secured three-year contracts. Although the sugar-beet harvest only lasts three months, it makes for a stable 50% of Trans Rail's turnover. Unlike Trans Rail's other assignments, the beet harvest is not spot traffic, but does vary greatly from week to week.

6 Last-mile services

Several speakers stressed the importance of so-called last-mile services. They save the customer of having to organise this particularly complex phase of a shipment themselves. They are especially attractive if the operator also organises the line haul. For Mr Widmer, last-mile service is a decisive guarantee for success in collecting a customer's train at origin and delivering it at destination. His Widmer Rail performs such services with their own shunting team and, in the absence of an electric overhead line, their own diesel locomotive. Mr Widmer said that his company handles many tank wagon groups that are not always whole trains. Sometimes Widmer Rail pulls a train with an electric locomotive but brings along a diesel shunting locomotive to provide last-mile services on non-electrified track.

Mr Weisweiler said that to complement their combined-transport trains, TX Logistik is developing provision of last-mile services for the pickup and delivery of loading units by road so the customer doesn't have to worry about this phase of the shipment.

Mr Stahl of BLS Cargo cautioned that last-mile services must be offered without discrimination.

7 Railways and flexibility

Several speakers spoke of the apparent rigidity of the railway compared to other sectors. The root of much of this rigidity is the underlying technology: railways move heavy vehicles at speed over a fixed guideway on which stopping is difficult and steering impossible. Over the nearly two centuries in which railways have been running, in response to their inherent risks – and grievous accidents – railways in every country have built a multitude of rules that arguably rigidify the mindset of railway employees. The need to know, apply and further refine these rules also tends to create castes of specialists who stay in the railway through much or all of their careers. This hampers flexibility, particularly in cross-border railway operations, when two sets of national rules may clash.

For the past century, the International Union of Railways and more recently also the European Union and its Railway Agency have been striving to standardise, harmonise and simplify Europe's railways. Nevertheless, Mr Meixner of UTL called regulatory uncertainties, navel-gazing, and different training standards a burden on the railway sector. Mr Widmer said that legal problems are always worse in rail. Sabine Juchem, managing director of LTE Schweiz, called on railway actors to better recognise these conditions, which tend to make people "as flexible as rails", as a starting point for gaining more of what railways need most: flexibility.

Shunting a wagon group bearing outbound kegs at the Feldschlössen brewery in Rheinfelden, Switzerland on 13 November 2023. Photo © George Raymond.

8 Swiss freight RUs and technology

Speakers also examined rail freight technology, including locomotives; the digital automatic coupler (DAC) and other train technologies; techniques to transport non-cranable truck trailers by rail; and information systems to assure that a shipper retains visibility over his shipment while it is on the rails.

8.1 Locomotives

Speakers described the changing market environment in which RUs buy or lease locomotives. They also examined the example of Stadler's Euro9000 locomotive and Swiss RUs' locomotive strategies.

8.1.1 Market environment

Emiel Knarren is chief commercial officer of European Loc Pool. Founded in 2018, the company now operates 100 locomotives and has 124 on order. He said that RUs – including the former state monopolists – are buying fewer locomotives and leasing more. Leasing lets an RU get the locomotive it wants faster. In the face of infrastructure constraints and construction projects, personnel shortages and an aging and mixed locomotive fleet,

European RUs want energy savings, flexibility and low emissions. RUs must also deal with the ongoing deployment of European standard ETCS signalling and possible DAC deployment and want to profit from steady improvements in batteries.

8.1.2 The Euro9000 locomotive

Mr Knarren presented the Euro9000 locomotive, which European Loc Pool buys from Stadler Valencia in Spain and leases to RUs. The hybrid Euro9000 can either run on its diesel engine or draw electricity from overhead catenary supplying any of two AC and two DC power supply types. It can thus run in a number of European countries. The locomotive is designed for a hybrid coupler that mates with either conventional screw couplers or DACs. The Euro9000's six axles let it onto the weak track it can encounter in last-mile operations.

An option will soon be to replace diesel with battery. With a range of 50 km compared to diesel's 500 km, the battery option is not yet attractive, but ongoing improvements in the technology mean that it soon will be.

European Loc Pool is now seeking certification of the Euro9000 is currently being sought in two groups of countries – in western and eastern Europe. Germany and Austria are members of both groups. Current priorities are Italy, then France, then Poland. The locomotive's top speed is 120 km/h, but Switzerland limits it 100 km/h.

Richard Seebacher is CEO of HSL Schweiz, one of the company's eight country groups. HSL Schweiz runs lots of spot trains, especially petroleum products from refineries in Germany and Italy to Swiss tank farms, seasonal import of sugar beets from Germany for the Swiss sugar plants and cross-border and transit trains for other RUs. TX Logistics took over HSL in 2024.

Mr Seebacher said that the hybrid Euro9000 lets HSL use take the shorter but non-electrified route from Bavarian refineries to Switzerland. The locomotive also allows tank trains from German refineries to continue over hilly routes to all Swiss tank farms without adding a second locomotive at the border on Basel. This eliminates both the stand-by locomotive in Basel and the time to attach it.

During the three-month sugar-beet season, a Euro9000 can shunt beet wagons at the non-electrified loading site in Lalendorf in northeast Germany before running under wires to Frauenfeld, Switzerland. The Euro9000 also opportunistically provides shunting services for third parties between line-haul runs, but this is not HSL's main focus.

8.1.1 Locomotive strategies

Ms Betschart said that SBB Cargo is seeking to reduce their locomotive fleet to a small number of line-haul types and just one shunting type. For the launch of SBB Cargo's new operational concept at the start of 2026, the company plans to buy or lease 30 new locomotives with last-mile modules. This will be the biggest freight locomotive order in Switzerland for 60 years.

Sven Flore, CEO of SBB Cargo International, said that his company's combined-transport trains don't require the most powerful locomotives. But they do want more hybrid electric/diesel locomotives so they can use whichever one ends up at a location after small and big disturbances. The aging locomotive fleet needs replacement in any case.

Mr Stahl said that survival of an RU like BLS Cargo depends on high utilisation of assets like locomotives. His company had just put into operation seven locomotives designed to run in seven western European countries (not including France) and on the latest version of ETCS. He complained of complex approval processes in the various countries, especially Italy, and pointed out the abolition of bilateral agreements that had eased operation of locomotives in border zones.

Hopper wagons and the photographer's train traverse Olten, Switzerland together on 10 December 2021. Photo © George Raymond.

8.2 The digital automatic coupler

Not surprisingly, the enthusiasm of an RU for European deployment of the digital automatic coupler (DAC) grows with the importance of shunting in its operations.

Mr Seebacher of HSL said although DAC does bring labour savings, its main benefit is advancing the digitalisation of rail freight. Mr Meixner of UTL called the DAC – and the automatic brake check it will allow – unavoidable and very helpful. Rail Cargo Group of Austria has compared DAC and the screw coupler, Europe's historic standard.

Mr Knarren said that the Euro9000 was designed to accept a hybrid coupler that can mate with either a DAC or a standard screw coupler. The DAC stresses a locomotive's chassis differently than do a screw coupler and buffers.

Jobs requiring night work attract ever fewer young people. Ms Betschart of SBB Cargo said that the biggest problem of the screw coupler is not the physical work it requires, but that it requires personnel ready to work at night. DAC can help by reducing the number of people needed for shunting. However, Ms Betschart called DAC very complex and warned that wagon keepers must cooperate throughout Europe to implement it.

In his comments, Mr Stahl of BLS Cargo, which operates no wagonload services, showed much less interest in DAC, saying:

- DAC technical unification is much more complicated than thought.
- DAC primarily benefits wagonload services. Do we want to invest in a wagonload system is that is dying out?
- No business case for DAC is visible for block trains and combined transport.
- Like other technological innovations that Europe is pursuing in parallel, such as ETCS, DAC's financing is not guaranteed.
- Financing of ETCS onboard equipment must be prioritised over financing of new projects like DAC.
- As there is no DAC business case for block trains, their operators cannot accept a DAC obligation. The market and companies (RUs, combined-transport operators and wagon keepers) must decide on DAC introduction.

Mr Metz of the BJS said that block trains and combined transport, whose market share is 80% and growing, don't need DAC.

8.3 Other train technologies

Ms Betschart said that SBB Cargo intends to take a pioneering role in Europe in automating and digitalising its operations to gain efficiency. In parallel to DAC, the company is pursuing:

- Driver assistance systems.
- Driving without a driver in the cab – or even at a central point.
- Local remote control of turnouts.
- Automatic train preparation.
- The automatic brake test, which Mr Meixner of UTL also said he wants.[1]

[1] Although DAC is an enabling technology for these last two functions, they can conceivably be implemented wirelessly, without the physical data conduit that DAC provides between wagons.

Standard and metre gauge meet in Aarau Torfeld on 4 May 2023. Although these trains don't compete for track capacity, they do compete for political attention. Photo © George Raymond.

8.4 Transport of non-cranable trailers

For a crane to lift a truck trailer, the trailer needs special reinforcement that adds weight and cost. The vast majority of truck trailers lack this. This means that the portal cranes and the drivable cranes called *reach-stackers* in combined-transport terminals cannot handle them. This tends to keep them on the road and off the rails.

Several technologies nevertheless permit loading such trailers on flat wagons for transport by rail. The CargoBeamer, Helrom and Lohr systems allow horizontal trailer loading but require special wagons and – in the case of Lohr and Cargo Beamer – special built-in terminal equipment. In contrast, Nikrasa and rL2 are baskets onto which the trailer is driven; a crane then picks up basket and trailer together. Mr Weisweiler of TX Logistik said that the low profile of their Nikrasa basket allows loading a cranable swap body (a truck trailer without wheels) on top of it. This lets a wagon carry its own basket so it can always load a non-cranable trailer even if it transports swap bodies on many trips.

8.5 Shipment visibility

Both Mr Meixner of UTL and Ms Betschart of SBB Cargo mentioned the importance of technology allowing real-time shipment tracking. Ms Betschart said her company doesn't just want to transport wagons but also provide door-to-door tracking of a customer's shipment.

The customer should not just get “push reports”, which they may not always receive, but also retrieve “push reports” when they want.[2]

9 Competition between RUs and with trucking

Mr Stahl of BLS Cargo said that the trend in Europe over the last 15 years has been towards diversification of the RU market. In 2021, for the first time, the market share of “challenger” RUs surpassed that of the historic state-owned railroads in their home markets. The 2023 tonne-km market shares of BLS Cargo were 30% for transit through Switzerland; 10% for traffic into, out of or within Switzerland; 12% in Belgium and 5% in Germany (in 2022).

Mr Flore of SBB Cargo International said that the wiggle room between RUs is 1 to 2% and that the real competitors are trucks. Mr Widmer observed that the market and competition make lots of decisions for you. Mr Meixner saw UTL as a complement, not competition, to other RUs, whereas the competitive pressure from trucking is high. Ms Betschart of SBB Cargo said that when a customer is considering rail, trucking is the baseline.

10 Competition among RUs for personnel

Automation on the railway is progressing slowly. Mr Metz of the BJS pointed out that people remain central to rail operations. Train drivers remain in high demand. Ms Juchem of LTE pleaded for standards for train driver salaries to avoid a price war among RUs. Mr Meixner of UTL said that wagonload services suffer more from personnel shortages than block trains and combined transport.

11 Freight rail vs passenger rail

Mr Füglistaler examined the competition between rail freight and rail passenger services in the political arena. He began by comparing Europe to North America, where trains are slow and where, on the vast private network of a freight railway, a grain train may have priority over passengers. In contrast, fast, high-density and punctual passenger services dominate in Europe.

Political pressure in favour of rail freight doesn’t come from the public, as it does for passenger rail. Freight appears after passenger in online searches. Whereas society increasingly demands that rail freight be a profitable business, passenger services benefit from ongoing public financing. And whereas the passenger lobby is well-organised, the freight lobby is fragmented and riven with disputes.

Freight is also suffering from the decline of heavy goods flows in Europe, whereas passenger profits from population growth. The European economy is starting to stagnate, which will further limit freight flows. (Mr Stahl of BLS Cargo echoed this warning.)

[2] See the author’s November 2024 report on visibility for European combined transport.

In the political process, freight interests must unify and keep pushing – otherwise freight will lose to all the people pushing passenger.

Freight must also defend its need for train paths – the right to use a rail route at a specified time – vis-à-vis passenger services. But freight must use the paths it receives or lose them to passenger trains. The law must solidify freight-path reservations.

A locomotive of the freight unit of French National Railways (SNCF) pulls a road-rail combined-transport train through track 19 in SBB station in Basel, Switzerland on 16 October 2024. This formerly freight-only track had just been rebuilt with a passenger platform. Photo © George Raymond.

Planning is now focussing on a wave of Swiss rail infrastructure improvements foreseen around 2035. The Swiss Federal Railways (SBB), who run intercity trains, and the Swiss cantons, who finance local passenger trains, can say what capacity they need and where in 15 years. This is harder for freight, but it is being done. Cantons still pay little attention to rail freight, however, for example in logistics planning.

Mr Metz of the BJS said that rail freight must combine its forces in the face of the political world's tendency to favour both rail passenger services and trucking companies.

12 Ocean shipping companies reach into their hinterlands

In his presentation, Peider Trippi of the BJS said that ocean shipping companies are emerging as market players in rail services to the hinterlands of the ports they serve. They are becoming all-in-one service providers, including ocean shipping, port operations, hinterland rail transport and terminals, and freight forwarding. All this is accompanied by end-to-end digitalisation. They can thus offer an all-in-one solution over the whole logistic chain between ship and customer dock.

This bundle of offerings gives the ocean shipping companies more flexibility, independence from competition, and power to implement their own strategies concerning port selection, route selection and pricing.

According to consultants SCI Verkehr, each of the big four shipping companies – MSC, Maersk, CMA CGM and Cosco – serve five European ports. The fastest expanders, MSC and Cosco, are each developing four more ports. All four shipping companies run their own trains in at least one country.

The growing hinterland role of ocean shipping companies is clearest in Spain, where they already dominate rail transport:

- MSC is strongly developing Medway (and expanding into France).
- MSC has become a partner of RENFE Mercancías.
- Continental Rail has become part of CMA CGC.
- Logitren has become part of Cosco.

The only Spanish RUs still not affiliated with ocean shipping companies are Captrain and Transfesa.

MSC in particular is becoming a powerful player in Europe's hinterland. The company runs its own trains in five countries and this number was expected to increase to 10 in 2025. MSC:

- Has an 85% rail market share in Portugal.
- Has founded its own RUs under the Medway name in Italy and Belgium (with operating licenses in 10 other European countries).
- Runs north-south transit trains through Switzerland with locomotive drivers from the personnel agency MEV.
- Has become a 50% partner in RENFE Mercancías of Spain.
- Has acquired a 49.9% stake in HHLA of Hamburg (and thus the RU Metrans).
- Wants to acquire a stake in the port of Genoa.
- Has an alliance with Mercitalia Logistics via a 49% percent share of MedLog.
- Has taken over Laumar Terminales Ferroviarias in Spain.
- Has bought and deployed 10 Alstom TRAXX E.494 locomotives in Italy (and leased six from Akiem) and ordered 15 Siemens Vectron locomotives for Medway Belgium.
- Received a €45 million loan from the European Investment Bank for 16 Euro6000 locomotives and 113 combined-transport wagons for Portugal and Spain.
- Has opened a plant in Trieste to produce 1000 railway wagons a year. Mr Metz of the BJS found this news particularly remarkable.

12.1 A threat for traditional land-based rail operators?

Mr Trippi said that ocean shipping companies' applying their financial power to develop connecting hinterland services could bring better service for customers. But it could also be a danger for traditional land-based RUs and combined-transport operators and terminals. He pointed out that MSC is also active in Swiss transit traffic (with Netherlands, Belgium, Germany and Italy) and asked what this will mean for existing actors in this market.

Mr Flore of SBB Cargo International was concerned that ocean shipping companies will be allowed to subsidise hinterland services with their own private money. Mr Stahl of BLS Cargo believed, however, that anti-trust authorities will prevent the shipping companies from gaining anything close to a monopoly.

Last-mile infrastructure: the active track that brings wagons to the lake port of Luzern, Switzerland. 14 March 2025. Photo © George Raymond.

13 Infrastructure

Another focus of the gathering was the infrastructure on which trains run.

13.1 Infrastructure bottlenecks

Mr Meixner of UTL complained of infrastructure bottlenecks and capacity constraints at important rail hubs in the DACH border triangle such as Basel, Buchs SG, Lindau, Passau and St Margrethen. But Switzerland and Austria are much further with rail infrastructure renewal and upgrades than Germany.

13.2 Infrastructure works: salvation or curse?

To relieve bottlenecks, increase capacity and overcome deferred maintenance, Germany is carrying out a decades-long work program on its rail routes. And some major expansion projects (such as Karlsruhe-Basel) are suffering long delays due to neighbours' protests and technical snafus such as a tunnel collapse. Mr Stahl of BLS Cargo said that massive works on German rail lines are planned to 2040. He called the critical situation of infrastructure "the new normal". In 2026 and 2027, huge blockages will occur all along European rail freight corridor 1 in Germany (Freiburg-Offenburg) and in Italy on the Simplon route (Iselle-Domodossola). These construction sites are overloading the system; the complexity is no longer manageable. Alternative routes are available only to a limited extent.

13.3 Infrastructure financing

Mr Flore of SBB Cargo International recommended that no expensive new projects start until the financing of approved projects is secure. Mr Füglistaler called on planners to reserve amounts for the needs of freight in the budgets for Swiss rail infrastructure's coming improvement phases.

13.4 Infrastructure projects as a market for rail freight

The flip side of rail infrastructure projects that they create business for freight RUs. Ms Betschart said that SBB Cargo has an opportunity – and responsibility – to properly support construction work on Swiss rails.

13.5 Corridor management

Mr Füglistaler said despite a political will to reinforce European rail corridors, each country still tends to make its own decisions. Switzerland and freight companies therefore need to work more actively in corridor management.

Mr Flore of SBB Cargo International pointed out that corridor-level detour scenarios already in place allowed quick reaction to the major 2023 blockage on the Lyon-Turin line in the Maurienne Valley near Modane, France.

13.6 Paths

Mr Widmer complained that Widmer Rail must order a train path months before they are sure they will get the traffic. But his company sometimes also requests a path at the last minute:

this is often easier than a year in advance, when several RUs think they might need it. At the last minute, the other RUs have cancelled.

Obtaining a path is one thing; paying for it is another. If RUs are to offer and plan services competitively, Mr Stahl of BLS Cargo said, then train path prices must be stable, plannable and reliable. Path prices in Germany will rise significantly in 2025 and 2026. And Switzerland hasn't been clear about how it should allocate track wear among different types and sizes of trains.

14 Crossing into France to avoid Rastaat

A spectacular example of RUs – and rail infrastructure managers – dealing with inadequate infrastructure was the detour of combined-transport trains though France to avoid a line blockage in Germany in August 2024.

Planned construction work closed Germany's main Rhine Valley line near Rastatt for 21 days on 9-30 August 2024. A presentation by Mr Flore of SBB Cargo International and the Captrain France website provided details of the detour route through French Alsace.

In a brief window between passenger trains, SBB Cargo enters the mail line in Lenzburg on 4 May 2023. Photo © George Raymond.

14.1 Preparation and involved parties

The detour took three years to prepare. It involved both the German and French rail infrastructure managers (IMs). Ten RUs were also involved, either as suppliers of locomotives or drivers or because they were the RUs of the north-south combined-transport trains that would normally have passed through Rastatt.

14.2 Normal and detoured traffic

The normal capacity for combined transport on Germany's route on the Rhine's east bank is about 200 trains per day in both directions, Mr Flore said. DB InfraGO and its neighbouring national infrastructure managers were able to organise detours that maintained half of the normal train volume. The detours included:

- 36 trains a day via the Gäubahn (Stuttgart – Singen) route linking Germany and Switzerland.
- Less than 20 trains a day via the Brenner route linking Austria and Italy.
- Less than 10 trains per day on the North Sea Mediterranean rail freight corridor via the French cities of Thionville and Metz.
- A planned capacity of 40 trains per day via the Karlsruhe – Wörth – Lauterbourg – Strasbourg – Offenburg detour through France. Over the course of the detour's 21 days, 415 trains or about 20 per day actually used the detour.

14.3 Type of combined-transport trains

Mr Flore said that the best detour route for trains hauling 4-meter-high truck trailers on standard wagons (traffic known as P400) was the route via Lauterbourg. Its main drawback was being non-electrified. Also, its traits and those of the detour's diesel locomotives prevented trains from being so long, heavy or fast as on the Rhine's east-bank main route.

14.4 The French detour's itinerary

The detour's itinerary passed through France, but began and ended on German lines. According to Mr Flore's presentation and Captrain France, the detour worked as follows for southbound trains: The RU normally responsible for a train drove it on the electrified network from the German north-south main route in Karlsruhe some 13 km west to the German city of Wörth am Rhein. There, a diesel locomotive provided by SNCF unit Captrain France and approved for operation in France and Germany took over the train, which included the train's de-energised electric locomotive.

From Wörth, the detouring train first traversed a single-track German line some 12 km south to the Franco-German border at Lauterbourg, France, then ran about 65 km south to Strasbourg. During rush hours, no paths were available through Strasbourg's passenger station, so the diesel would pull the train into Hausbergen yard north of the station, move to the train's south end, then proceed about 33 km via its second border crossing at Kehl to Offenburg, Germany. There, the normal RU's electric locomotive, still present in the train, took

it back over and continued southward on its normal route on the German north-south main line.

14.5 People and locomotives

Mr Flore said that in the middle of summer, 80 drivers had to be located and trained on 11 French diesels approved for running in Germany. Ground staff and supervisory personnel also had to be found. Each diesel locomotive carried both a French and a German driver.

Before the detour began, all possible locomotives were brought to Basel, Mr Flore said, so everyone could measure them. No trust was placed in the entities of charge of maintenance (ECMs) who testified the locomotives could safety run on the detour line.

14.6 Special measures

Captrain France says that the detour required special attention regarding:

- Night operation: The Lauterbourg-Strasbourg line, normally closed at night, had to be opened.
- Passenger service: Detour shuttle trains ran between the line's passenger trains throughout the detour period.
- Public safety: In a communication campaign, SNCF Réseau warned the public of the unusual, non-stop freight trains that could also appear at night. Guards protected stations where passengers must cross the tracks and level crossings lacking barriers.

14.7 Costs

Mr Flore said the detour cost €4600 Euro per train and increased the cost of running a train from origin to destination by 20% on average. Public funds covered half of this.

14.8 Interaction among the 10 RUs and 2 IMs

Mr Flore said that the presence of two countries, languages, sets of regulations, and infrastructures made organising the detour very challenging. The French and German rules for wagon lists, brakes, end-of-train marking and working times for drivers were all different. So are the rules governing the interaction between IM and RU.

The sheer number of involved parties – 10 RUs and 2 IMs – hampered communication and data exchange. Also, dispatchers in a German station such as Wörth don't know what trains are approaching across the network. This hinders a corridor mindset.

Mr Flore noted, however, that the detour produced no accidents.

14.9 Lessons learned

The August 2024 detour around Rastatt through Alsace taught Mr Flore these lessons:

- Harmonising train paths takes time and effort.
- Active inflow control requires close and transparent communication.
- Reduce data interfaces as far as possible.
- Standardise resources wherever possible.
- Don't underestimate the human factor.

Essential to the success of the project, Mr Flore said, was a single team working in a spirit of solidarity and determined to make the project work.

Construction projects on railway routes are unavoidable, but must include 100% detour capacity for freight traffic.

According to Captrain France, SBB Cargo International helped plan the detour because the Rastatt line closure affected many trains of its part-owner, Swiss combined-transport operator Hupac.[3]

Mr Flore said that from the December 2025 European timetable change, SBB Cargo International will also operate as SBB Cargo France.

Mr Füglistaler commented that Switzerland is doing enough to improve well-established corridors and shouldn't invest too much in new corridors like the west side of Rhine that don't affect Switzerland.

14.10 The Riedbahn closure: detours done right

Mr Flore closed with an example of a railway construction project with good detour routes. The German rail infrastructure manager DB InfraGO closed the Riedbahn between Mannheim and Frankfurt for a general overhaul between July to December 2024. But detour routes were available to the west (via Worms and Mainz) and to the east (via Weinheim and Darmstadt). These fully equipped detour routes had enough capacity

But future rebuilds on the German rail network will pose greater challenges, he warned. An example is Hamburg-Lübeck, which lacks detour options.

[3] See the author's May 2023 article on Hupac's activism in favour of opening the Wörth – Lauterbourg – Strasbourg line for freight. It includes numerous photos he took along the line.

International road-rail combined transport entering Basel, Switzerland on the line from Mulhouse, France on 26 January 2024. Photo © George Raymond.