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Lötschberg NRLA

Construction project, operation and traffic services

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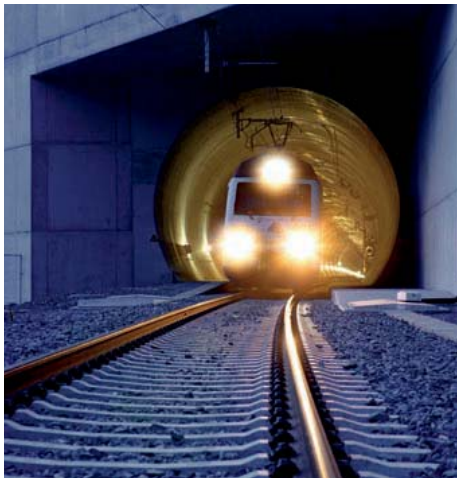
The construction project of the century commences operation

The time has finally arrived: On 15 June 2007, the BLS will put the new Lötschberg base line into operation! Barely a century after the commissioning of the high-elevation route, this marks a further new chapter in the history of trans-Alpine railway traffic.

As from 9 December 2007, the new trans-Alpine link through the Lötschberg will create shorter, more reliable and higher capacity north-south connections for passengers and freight. Trains will then pass through the new tunnel at speeds of up to 250 kilometres per hour. It will



make the different areas of both Switzerland and Europe more readily accessible. Journeys from the Swiss plateau to the canton of Valais, from Frankfurt to Milan and from the North Sea to the Mediterranean will shorten by up to one hour.

For goods traffic, the new base line will confer a decisive capacity increase to the Lötschberg-Simplon axis and consequently also create the conditions for shifting as much trans-Alpine goods traffic as possible from road to rail, in keeping with the wishes of the Swiss electorate.

The Lötschberg base line marks the commencement of a new age for Switzerland's railscape. With a peak elevation of only 828 metres above sea level, this, the lowest of all current Alpine crossings, is a pioneering project that has set new standards in the fields of construction, railway technology and operation.

As a railway company, the commissioning of this project of the century represents a special responsibility for BLS. It is a responsibility that we accept with pride and pleasure. On the following pages we wish to provide you with an insight behind the scenes of this fascinating project and hope to share our enthusiasm for it with you!

Mathias Tromp,
Chairman of the Management
BLS AG

The NRLA

The NRLA (NEAT) concept

NRLA, the New Rail Link through the Alps, is a central element of the enlargement and modernisation of the Swiss railway infrastructure.

The NRLA includes two new base tunnels: one each through the Gotthard (expected commissioning 2017) and the Lötschberg (opening 2007) with upgrades on the approach routes. With this construction project of the century, the Swiss Confederation intends to offer an attractive alternative to the roadbased transportation of freight and passengers.

Switzerland will become more accessible thanks to the faster connections in passenger transport: outlying regions such as the Valais and Ticino will receive improved link to the urban centres on the plateau (Mittelland). The latter, in turn, will benefit from faster access to the tourist leisure regions in the south.

As for the movement of freight, the new north-south connections with their substantial enhancements and increases to services and capacities are intended to facilitate a shift in trans-Alpine traffic from road to rail and thereby reduce road congestion and the environmental burden. As part of this policy of relocation, the NRLA is being financed with the help of a special fund largely comprising revenue from the mileage-related heavy vehicle tax (MRHVT) and fuel taxes.

The Swiss electorate approved the NRLA concept in 1992 and the respective financing model (FinöV) in 1998 with clear majorities.

Aims of the NRLA

Passenger traffic

- Access by Switzerland to the European high-speed railway network
- Improved links to European centres
- A reduction in journey times by up to 30%
- Improved connections for outlying cantons such as Ticino and Valais

Goods traffic

- An increase in trans-Alpine transit goods capacities
- An improved railway infrastructure thanks to larger tunnel profiles
- An increase in operational quality
- Strengthened competitiveness of the railways
- Implementation of the Article on the protection of the Alps through an increasing shift in traffic from road to rail

The NRLA in Europe

Its central location in Europe makes Switzerland an important hub in European railway transportation. Italy's ports, the important economic regions of Lombardy and Piemont and the industries in Germany, Belgium and the Netherlands right up to Scandinavia and Great Britain need efficient and reliable transportation connections.

110 million tonnes of freight pass through the arc of the Alps annually and this trend is increasing sharply. In doing so, a third of this freight passes through Switzerland. While only around 20 percent of this is transported by rail in the neighbouring Alpine transit countries of France and Austria, the proportion of rail-based traffic in Swiss Alpine transit is 65 percent. With the construction of the NRLA, the conditions will be present to allow this proportion to be increased even further in future. This is intended to help protect the ecologically-sensitive Alps region and lower climate-damaging CO_2 emissions.

This policy is also attracting increasing interest and recognition in surrounding European countries. Accordingly, the NRLA concept forms part of the Overland Transport Agreement signed between Switzerland and the EU in 1999. Over and above this, both transit axes through the Lötschberg and Gotthard form the heart of the Rotterdam-Milan/Genoa European goods traffic corridor.

Lötschberg NRLA partners

Four partners are involved in the construction, the preparations for operation and the actual operation of the Lötschberg base line.

The **Swiss Confederation** is the client of the construction project: It has appointed BLS AlpTransit AG for the planning and construction of the project, and BLS for the operation of the Lötschberg base line. As the client, the remit of project supervision also falls to the Confederation.

In the construction of the Lötschberg base line **BLS AlpTransit AG** has the role of the principal contractor. As the principal contractor, it is directly responsible to the Swiss Confederation. BLS AlpTransit AG is a wholly-owned subsidiary of BLS AG and will be wound up after the commissioning of the base line.

As part of its concession, the Federal Council has appointed **BLS AG** as the infrastructure operator of the Lötschberg base line. As a consequence, it is responsible for the following tasks:

- railway management and the regulation of network access (in line with Swiss Confederation directives) for railway companies that use the line
- the maintenance of railway and tunnel infrastructure
- Intervention and rescue in the event of an incident

Appointed by the Federal Office of Transport as the system operator, the **SBB** is responsible for important fundamental systems in the area of electronic train protection (ETCS) and telecommunication (GSM-R).

The Lötschberg base line will be used by various railway traffic companies: in respect of passenger traffic, the SBB and Cisalpino AG will offer national and international connections respectively. Various suppliers operate in the field of goods traffic, where BLS Cargo AG enjoys the largest market share.

Key dates: Lötschberg axis

1906 Founding of the Berne-based Berne-Lötschberg-Simplon (BLS) Alpine Railway Company with the objective of a direct Berne-Valais-Italy link.
1913 Commissioning of the Lötschberg mountain line
1915 BLS opens the Grenchen mountain line. This provides the longdesired rail access route from the Simplon to north-eastern France via Berne.
1960s The first ideas of a base tunnel between the cantons of Berne and Valais
1983 The Federal Council supports the construction of a new Alpine railway transversal, however considers a decision regarding construction as premature.
1986 Commencement of NRLA (NEAT) planning (Swiss Confederation, SBB and BLS) and the consideration of 5 options: Lötschberg-Simplon, Gotthard base, Ypsilon (Gotthard), Splügen 1, Splügen 2
6.12.1987 Rail 2000 referendum: 57% yes
4.10.1991 Decision by the Swiss Confederation on the construction of the Swiss railway Alpine transversal (Alpine transit decision)
8.5.1992 Completion of the double track upgrade along the Lötschberg mountain line
27.9.1992 Popular vote on the Alpine transit decision referendum: 63.5% yes.
16.12.1992 Parliament approves the transit treaty with the European Community (decision to develop the piggyback corridor along the Lötschberg mountain line)

8.6.1993 Founding of BLS AlpTransit AG as a wholly-owned BLS subsidiary
20.2.1994 Acceptance of the Alpine initiative (52% yes) incorporates the modal shift policy in the constitution
12.4.1994 Ground-breaking of the Kandertal exploration tunnel
24.4.1996 The Federal Council simultaneously decides on the construction of the base tunnel through the Lötschberg and Gotthard (network option) in a re-dimensioned form
29.11.1998 Referendum on the construction and financing of the public transportation infrastructure: 63.5% yes
5.7.1999 First blasting in the base tunnel profile (Mitholz)
11.6.2001 Commissioning of the piggyback corridor ("rolling highway") between Germany and Italy via the Lötschberg mountain line
6.12.2004 Start of installation of the permanent track in the western tube
28.4.2005 Main breakthrough in the eastern tube
6.6.2006 First electrical test run in the southern tunnel section
24.7.2006 Meeting of trackwork: driving in of the "golden nail"
From Dec 2006 Ongoing electrical test runs at speeds of up to 280 km/h
15.6.2007 Official opening of the Lötschberg base line
Handover of the construction project to BLS as the operator
16.6.–8.12.2007 Efficiency-raising phase with commercial trains
9.12.2007 Commencement of timetable-compliant full rail services

The Lötschberg base tunnel

Basic concept and key facts and figures

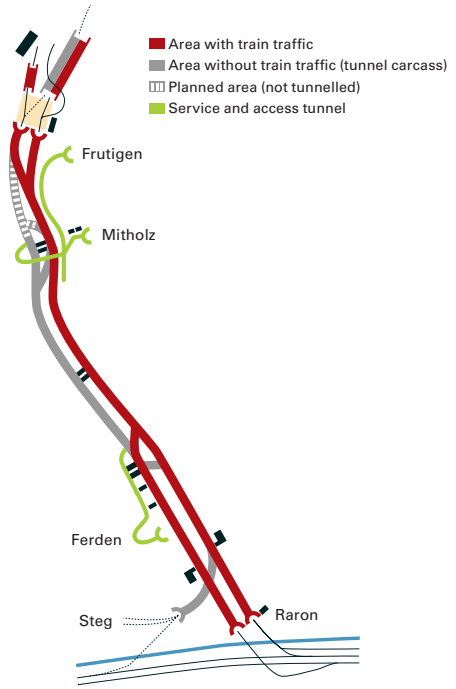
The Lötschberg base tunnel is now probably the safest, most modern and technically complex railway tunnel in the world. It is designed as a dual-tube, single-track tunnel for the maximum possible operational safety. For cost reasons, only one tube has for the time being been equipped to an operational level along its entire length, while the parallel tube has largely been left in its carcass state (cf. possible extension stages, page 50). Both tubes are linked by a transverse tunnel every 333 metres. This enables one tunnel to become the rescue tunnel for the other. In addition, all of the tunnel systems are present in duplicate, meaning that, should a technical malfunction occur, operation can continue via the ‚twin' system.

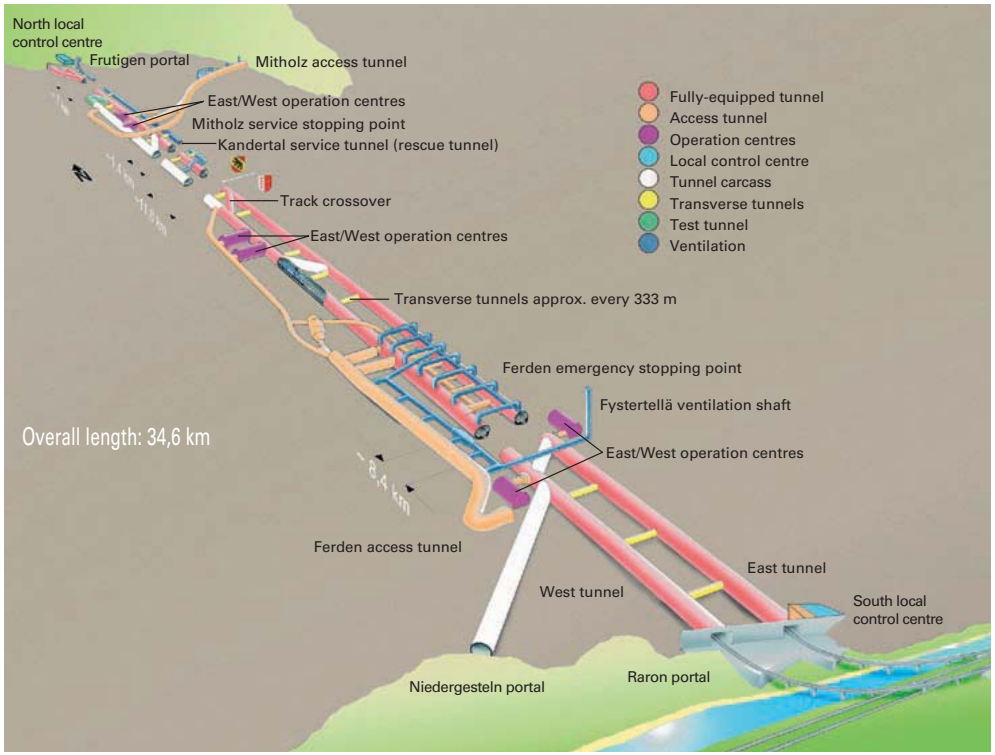
Construction key facts and figures

Length of the base tunnel	34.6 km
Total excavated tubes and galleries	88.1 km (with traverse tunnels 91.8 km)
Separation between base tunnel tubes	40 m
Number of transverse tunnels between the tunnel tubes	104
Elevation at Frutigen north portal	776.5 m. above sea level
Elevation at the highest point	828.2 m. above sea level
Elevation at the Raron south portal	654.2 m. above sea level
Minimum gradient	3‰
Maximum gradient	13‰
Total excavated material	16.6 million tonnes (= approx. 830,000 trucks)
Expected final costs NRLA Lötschberg*	4'302,5 million francs

*as at 31.12.2006. Price basis 1998, source: Swiss Federal Department of Transport (BAV)

Tunnel areas





The railway tunnel

Tunnel driving
Twenty percent of the Lötschberg base tunnel was excavated using tunnel boring machines, with the remaining eighty percent excavated using conventional blasting. Two tunnel boring machines were used in Raron (eastern tube) and in Steg. Blasting was used in the remaining zones on account of the changing geology or difficult rock quality with regard to construction.

Material management
Around 16 million tonnes of excavated material was produced during the construction of the Lötschberg base tunnel. To transport this, a train with 320,000 wagons and a length of 4,100 km would have been necessary! 40% of the excavated material was able to be reused. Consequently, the majority of concrete aggregates for the interior work was sourced from internal production processes. The treatment and processing of this material took place in Mitholz and in Raron.

Track
A permanent, ballastless track has been laid in the Lötschberg base tunnel: The sleepers do not lie directly on the concrete floor, but in a rubber ‚shoe' which absorbs the vibrations. The advantages of a ballastless track are an extended service life, reduced maintenance costs, a lower risk of derailment and increased comfort for passengers.

Caternary
Trains are supplied with traction power via the caternary. It is important for efficient power transfer to occur at the interface between the train and the contact wire. The caternary in the Lötschberg base tunnel is designed for a maximum speed of 250 km/h and is able to be switched in approx. six kilometre sections. It needs to be able to conduct currents of 2000 amperes in each tunnel tube. This high current carrying capacity is required in order to provide sufficient power for six locomotives and for goods trains up to 1.5 km in length.

Structural clearance
The structural clearance is the cross section necessary for the passage of a train in tunnel. The Lötschberg base tunnel has been designed with a "Lötschberg shuttle" structural clearance and with a caternary wire height of 5.85 metres. In contrast to the Gotthard route, this enables all of the trains operating in Europe to pass through the tunnel.

Technical areas

Operation centres and local control centres
Along the base line between Frutigen and Raron there are a total of 12 operation centres which house the railway technical systems and equipment. For safety reasons, the operation centres are constructed in pairs, one each for the western and eastern tunnel, enabling both tubes to be operated independently of one another. Equipped with crane systems, the operation centres in the tunnel contain all of the equipment for the railway and infrastructure power supply, radio communication, signalling systems and airconditioning in a total of 136 containers. The operation centres are unmanned and are monitored and controlled by the scheduling/operations control centre (German acronym: DOLS) in Spiez via the two local control centres (German acronym: VOLS) in Frutigen and Raron.

Transverse tunnels
A total of 1450 cabinets are situated in the 104 transverse tunnels which connect the two tunnel tubes. These contain systems for the power supply, for normal and emergency illumination, for data transmission, for door control, the fire alarm systems, as well as the train protection and radio systems.

Ferden emergency stopping point
In Ferden, there is an emergency stopping point in both tunnel tubes. These are connected by an escape tunnel which is ventilated with fresh air. Should an incident occur, the emergency stopping point will be the point of escape and evacuation for passengers. It is provided with an independent fresh air supply, smoke extraction, communication systems, video monitoring and high-intensity illumination.

Mitholz service stopping point
A service stopping point exists at the Mitholz base. It too can be used to evacuate a train in the event of an incident.

Systems and functions

Ventilation

There are three ventilation centres in the entire tunnel: One air extraction and two air infeed centres. Both air infeed centres in Mitholz (150 m³/sec.) and Ferden (200 m³/sec.) control the supply of fresh air. This is especially important during maintenance work and in the event of an incident. During normal operation, adequate ventilation of the railway tunnel tubes is ensured by the trains passing through them. The air extraction system will only be switched on the event of an incident. It directs contaminated air (i.e. polluted with smoke gases) to the outside via the Fystertellä ventilation shaft.

Air-conditioning systems

The climatic conditions in the base tunnel are characterised by high temperatures and a high humidity. In this environment, 44 refrigeration machines and 396 recirculation-cooling devices provide for constant climactic conditions and the trouble-free operation of electronic equipment.

Drainage

Drainage throughout the entire railway tunnel system uses separate systems. Here, a distinction is made between mountain water and waste water. This means that a separate mountain water main pipeline carries clean mountain water directly to the Rhone river in the south, or the Engstlige river in the north. Polluted tunnel wastewater is diverted into holding tanks where it can be tested for contaminants and, in the event of an incident, retained.

Doors

The western tunnel and eastern tunnel each have a railway tunnel door built into them, allowing the railway tunnel to be completely closed. Closing the railway tunnel allows the air renewal conditions within the tunnel to be controlled. This helps to ensure a regulated tunnel climate during maintenance and servicing work.

A total of 173 motorised sliding doors are situated at the entrances to the transverse tunnels, transverse links, emergency exits and escape tunnels. These are able to be controlled remotely from the tunnel control system and are monitored by the train protection systems. When open doors are present, trains are only permitted to travel with a maximum speed of 40 km/h.

Monitoring and detection

A total of 130 cameras continually observe the happenings within the tunnel. All of the technical areas, the transverse tunnels, access and service tunnels as well as the drainage system are, depending on the location, equipped with fire, gas and flood detectors. There are approx. 3200 detection units installed solely for fire alarm purposes. This facilitates swift and directed intervention in the event of an incident.

Communication systems

The communication systems for the base tunnel include data lines, a telephone system with 437 handsets and a connection to the public telephone network, as well as GSM-R radio for voice and train data. Every transverse tunnel and transverse link is equipped with emergency telephones. The GSM-R radio system operates throughout the entire tunnel.

Power supply

When discussing the power supply in the Lötschberg base tunnel, a distinction must be made between the traction power supply (16.7 Hz) and the power supply to the infrastructure (50 Hz). The traction power supply is provided by two substations in Mitholz and Gampel, while domestic current is supplied via a total of 21 transformer stations. Both power supply systems are independent, as, for safety reasons, the infrastructure systems also need to be able to operate should traction power fail.

A total of approx. 1,600 km of cable has been laid in the tunnel to supply power. In addition, there is a heavy current power line (132 kV) which connects Valais with the Bernese Oberland. Since a direct link of this kind was absent from the entire Swiss traction power network, Valais traction power previously had to be carried into German-speaking Switzerland via the Lake Geneva region.

The operation of the Lötschberg base line

Preparations for operation

In order for BLS to be able to carry out its role as infrastructure operator on the new base line, extensive preparatory work already needed be completed out during the construction phase. Such work included:

- the protection of operator interests during tunnel construction and the installation of railway technology
- the completion of structural measures in the inflow area (railway station alterations and the construction of a new rescue and intervention centre in Frutigen)
- the integration of the tunnel control system in the operations control centre at Spiez
- the procurement of specialised vehicles for maintenance and intervention operations in the tunnel
- the specification of all the necessary work processes and operating organisation
- the establishment of a site for the maintenance and operation of the tunnel's systems
- the training of BLS personnel and of third parties to use the new systems (e.g. railway companies, fire brigades, police etc.)
- timetable compilation and route planning
- the completion of a trial operational period in order to be able to practise all of the new organisational procedures under conditions close to reality
- the completion of a total of approx. 10,000 test and efficiency-raising runs along the new route*

*partially under the responsibility of BLS AlpTransit AG

Full commercial operation along the new base line will commence and coincide with the timetable changeover on 9 December 2007.

Operation management

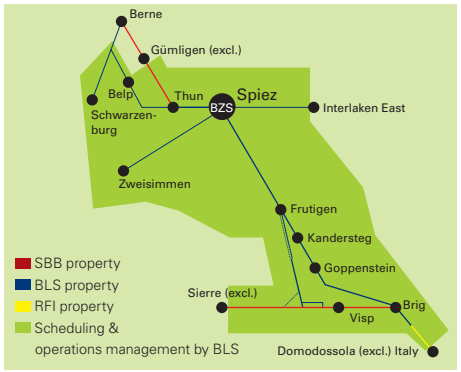
Positions and tasks
Over the past years, BLS has successively taken over the operation management along the entire Lötschberg-Simplon axis between Gümligen (exclusive) and Domodossola (exclusive), as well as in the Upper Valais from Sierre (exclusive) to Brig. This transfer of responsibility stems from the basic agreement with the SBB dating from 2001.

The key tasks of operation management are to ensure that train traffic and shunting operations occur in a safe and punctual manner. This takes place centrally from the BLS operations control centre in Spiez where various specialists control and monitor traffic along the Lötschberg axis:

- Dispatchers monitor the current operational state, analyse any deviations from the scheduled timetable and initiate corrective measures accordingly.
- Train traffic operators set and monitor the railway tracks and operate the train protection systems.
- Tunnel operators monitor and control the tunnel technology (lighting, doors, ventilation, video surveillance etc.)
- Traction power operators regulate and control catenary switching and ensure traction power is always present.
- Customer service assistants provide travellers on the station with information on the current operational state.

Timetable compilation and route management
Working in partnership with SBB, BLS operation management compiles the timetable for the Lötschberg axis and plans the resulting available routes. When selling routes, it ensures discrimination-free network access for all authorised rail traffic companies.

The long, single-track section without any crossings in the Lötschberg base tunnel presents a special challenge. In order to maximise track capacity in this 21-kilometre-long ‚needle tube', several trains running one after another in the same direction are directed through the single track section wherever possible. In addition, a type of ‚slot system', comparable with that used for air traffic, is used for traffic along the Lötschberg base line. Every train is allotted a scheduled time window in which to enter the single track section. If a delayed trains misses its window, it will either need to be diverted over the mountain route or wait for the next available free ‚slot'. Only by using such an operating concept can the unusually high capacity utilisation of 96% for rail traffic be implemented.



ETCS
The new ETCS Level 2 train protection system will be used in the base tunnel in order to achieve the high speeds (up to 250 km/h) and short headways necessary to implement the intended timetable. In this standardised European system, travel commands are no longer given by external visual signals, but are transmitted directly to a display in the driver's cab using the GSM-R digital radio network.

Maximum speeds with ETCS

Wengi-Ey junction	120 km/h
In the tunnel	250 km/h
Junction in the Rhone valley line	160 km/h

The tunnel ‚caretaker'

Duties
BLS has created a separate organisational unit to supervise and attend to the technical systems along the Lötschberg base line. It can be imagined as a kind of ‚caretaker' of the base tunnel. A total of 30 employees ensure that tunnel operations remain hitch-free round the clock:

- Maintenance coordinators plan and coordinate the maintenance of the line in conjunction with the operation management.
- Engineers and electricians attend to the maintenance of the technical equipment in the tunnel.

- Master well-builders are responsible for the water supply and the environmentally-friendly drainage of water within the tunnel areas. A functioning supply of fresh water is essential for controlling temperatures within the tunnel and, consequently, for the operation of the technical systems.
- Tunnel operators monitor and control technical equipment such as ventilation, air-conditioning systems, doors, video systems. This takes place via a tunnel control system which is controlled remotely from the BLS operations control centre in Spiez.

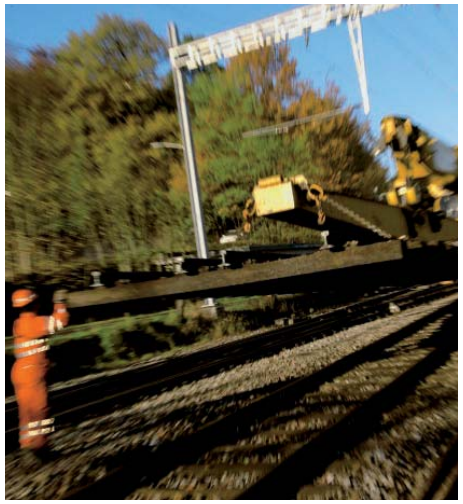
Tunnel operation

The control and monitoring of technical equipment in the base tunnel is undertaken by specially trained tunnel operators, who control the tunnel's systems remotely via a tunnel control system from the BLS operations control centre in Spiez. These systems include, in particular:

- Ventilation systems for fresh and exhaust air
- An air-conditioning system in the containers and cabinets
- Sluices, doors, sliding doors, railway tunnel doors
- Water supply and removal (fire, cooling, service and waste water)
- Fire alarm system (fire, flood and gas detection, fire extinguishing systems)
- Communication systems (landline telephones, mobile radio, radio, loudspeaker systems)
- Lighting, light signalling system in the service tunnel
- Video system and access control system
- Power supply (excluding rail power) and emergency power groups
- Data lines

Track maintenance in the base tunnel

Track maintenance in the Lötschberg base tunnel is carried out by the regular BLS maintenance services (trackway, train protection systems, rail power, telecommunication, civil engineering). The objective is to be able to maintain the systems with minimal effort and without impacting on operational availability to any great extent. To this end, the entire tunnel is closed every Sunday night, with a single track of the southern section also closed on Monday night. Additional maintenance intervals are used during a four-week period in the summer.



Such restricted work periods and the remoteness of work sites place high demands on employees and materials. BLS has therefore purchased a series of new vehicles for special use in tunnel maintenance. These vehicles will be stationed at the new Frutigen maintenance and interven-

tion centre. The vehicles include three diesel locomotives, two self-propelling malfunction intervention vehicles and 12 self-propelling maintenance vehicles with modular superstructures and 6 transport containers (team containers and mobile workshops).

Intervention and rescue

If an unforeseen incident takes place on the Lötschberg base line (e.g. in the event of a fire), the affected train will, if possible, attempt to reach the emergency stopping point or the intervention points outside of the tunnel. If this is not possible, passengers and the train crew can escape through the transverse tunnels to one of the protected areas along the parallel tubes and await assistance there. On the southern side between St. German and Ferden, an evacuation can then take place along the second railway, on the northern side between Frutigen and Ferden by bus.

The incident services must reach the damage site within 45 minutes in order to commence rescue and damage abatement operations. BLS' new fire-fighting and rescue train forms the centrepiece of intervention operations. This special train comprises a fire-fighting car, an equipment car and rescue cars to evacuate the affected passengers and crew. It is stationed at BLS' newly built maintenance and intervention centre in Frutigen. An additional intervention centre which is operated by the SBB is located in Brig, on the southern side of the base tunnel.

The intervention personnel consist of the railway fire brigades of the BLS and SBB, the two rail companies, which are supported by local fire brigades. In total, 150 fire-fighting crew and 20 members of the police, ambulance and other essential services of the canton have been trained for intervention in the Lötschberg base tunnel. This number is supplemented by 90 bus drivers from PostAuto AG in Upper Valais who can also be deployed in the event of a passenger evacuation.

The new range of transportation services

Entire Lötschberg axis system

The Lötschberg NRLA forms a complete system comprising the new base tunnel and the existing high-elevation tunnel. The following types of train will operate on this system as from 9 December 2007:

Long-distance passenger traffic

SBB InterCity trains from Basle/Zurich to Brig and return (stopping in Thun, Spiez and Visp) will operate hourly on the base line. These will be augmented by 6 daily Cisalpino return connections from Basle to Milan.

Regional traffic

Regional access to the high-elevation route between Berne/Thun/Spiez and Brig is provided by BLS hourly RegioExpress trains (see page 48).

Freight traffic

It is expected that an average of 110 freight transportation services will operate per day. Of these, around two thirds will be directed through the base tunnel and around one third across the mountain route. On the Lötschberg axis, three principal types of goods train exist:

- Trains providing conventional wagon load transportation
- Trains providing unaccompanied combined transportation (piggyback containers)
- Trains providing accompanied combined transportation (Freiburg i.B. – Novara rolling highway)

Presently, the heaviest trains using the Lötschberg base line have a hauled load of 3250 tonnes and a length of 750 metres.

Piggyback trains

The BLS car transportation piggyback service will continue to remain on the mountain route and operate between Kandersteg and Goppenstein (Iselle). The service frequency will continue to be determined by demand: at least one train in every direction every 30 minutes; at peak times every 7.5 minutes. The maximum capacity is 180 trains per day. In addition, piggyback trains will operate directly between Kandersteg and Iselle from April until October.

Travel times (examples)

Route	2007	2008	Time saving
Berne – Visp	1:59	0:55	1:04
Berne – Brig	1:36	1:04	0:32
Lucerne – Visp	3:11	2:06	1:05
Zurich – Sion	3:19	2:32	0:47
Zurich – Zermatt	4:24	3:12	1:12
Basle – Milan	4:35	approx. 4:00	approx. 0:35

Mountain line

No. trains/day	Speed	
37	125 km/h	
72–180	110 km/h	
40	100 km/h	

Base line

No. trains/day	Speed	
70–80	100 km/h	
30	200 km/h	
12	250 km/h	

New RegioExpress trains (RE) for the Lötschberg mountain line

To coincide with the timetable changeover, BLS will commence operating hourly RegioExpress train (RE) services as from 9 December 2007. This will provide the Kandertal, the Lötschental and the ‚Lötschberg-Südrampe' (Lötschberg South Ramp) with a swift and convenient connection to the national and international railway network.

The Lötschberg RE will operate hourly via the mountain line – with a rapid IC/EC connection in Spiez to and from Berne. During weekdays, three RegioExpress trains each morning and evening, and on Saturdays four such trains will be ‚extended' directly to Berne. In addition, services between Spiez and Frutigen will operate every 30 minutes at peak times during the morning and evening. On Sunday, all 16 Lötschberg RE return services will operate to and from Berne. After the infrastructure has been further extended, it is expected that all Lötschberg RE trains will operate to and from Berne as from 2011.

BLS is purchasing 13 new, four-car train sets for use on the mountain line. These will be based on the proven low-floor ‚S-Bahn' EMU trains. The new trains are fully air-conditioned and will have an increased starting tractive effort for operation on the mountain. They will be supplied as from the spring/summer of 2008. During the transitional phase until the commissioning of these trainsets, the BLS will deploy locomotive-hauled commuter trains between Berne and Brig.

In the new trains, BLS in collaboration with UNESCO plans to offer travellers an unforgettable cultural and historical journey for the senses through the region.

Stops for the new Lötschberg RE:

- Berne*
- Münsingen*
- Thun*
- Spiez
- Mülenen (Niesen)
- Reichenbach (Kiental)
- Frutigen (Adelboden)
- Kandersteg
- Goppenstein (Lötschental)
- Hohtenn
- Ausserberg
- Eggerberg
- Lalden
- Brig

* between 2008-2011, some of the Lötschberg RE trains will operate from Spiez

Possible extension stages

The Lötschberg NRLA project originally envisaged the complete construction of a dual-tube tunnel with a branch line to Steg. For cost reasons, the Federal Council decided in 1996 that only the eastern tube was to be completed to an operational state along its entire length. Consequently, the western tube of the base tunnel has to date only been excavated between Raron and Mitholz, and equipped for rail operation between Raron and Ferden. In addition, the tunnel branch to Steg, as well as one track of the Engstlige tunnel remain in a carcass-only state.

The practically 22-kilometre, single-track section which remains today will result in considerable operational restrictions. The shorter this single-track section is, the higher the operational flexibility and consequently the timetable stability along the entire Lötschberg-Simplon axis will become. Route maintenance planning and rescue and intervention processes would be greatly simplified by the presence of a continuous second rail track. In addition, scope for further capacity increases along the entire axis would come into being. In order to fully exploit the enormous potential of the new base line, a twin-track full completion is indispensable in the medium term.