

Switzerland's underground. Part 2, Road and rail transport : in the beginning...

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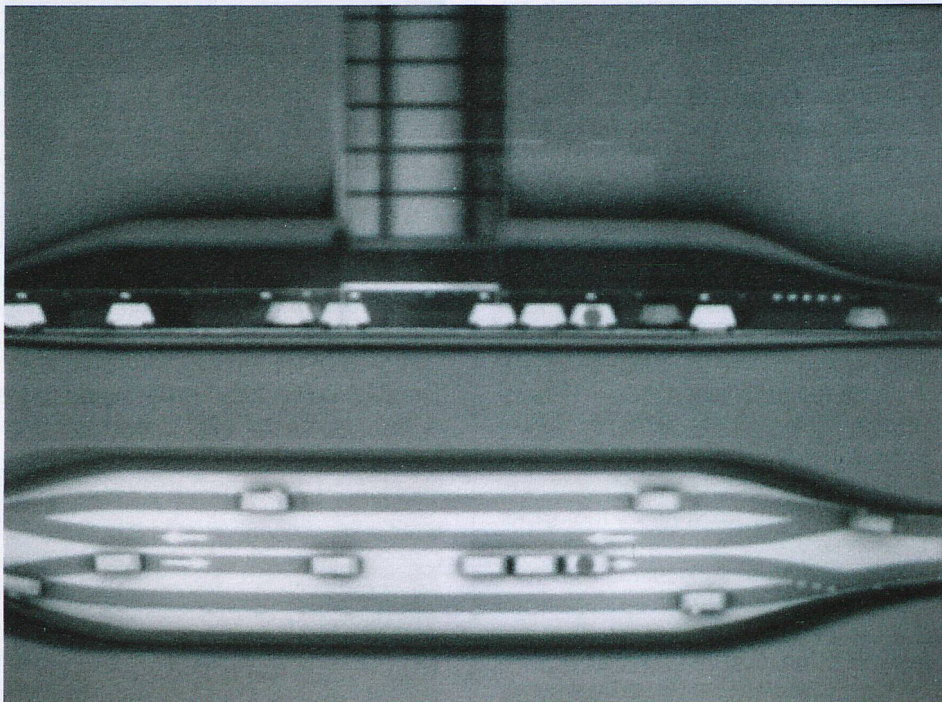
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Tunnels

Group seeks \$3.4 billion for underground cargo system



A group called Cargo Sous Terrain (CST) is seeking financing to build tunnels for the underground transport of goods, initially in the Zurich area, but eventually elsewhere in Switzerland.

CST (French for underground cargo) announced a plan to build a 70-kilometre tube to haul goods from Härkingen-Niederbipp in the canton of Solothurn to Zurich using automated electrically powered vehicles travelling at 30 kilometres an hour.

The underground cargo tunnels are planned as part of a transport logistics system while reducing the need for storage space, as well as helping the environment by cutting carbon dioxide emissions.

CST said that estimates show that the volume of goods transported by road in Switzerland will rise in 2030 by 45 percent from levels in 2010.

The transport system will not be able to handle such an increase without

bottlenecks in the road and rail system, the group said.

The aim is to have the 3.5-billion-franc tunnel, 50 metres under the ground and linking a dozen "hubs", operating by 2030, the group said in a news release. The decision to go ahead follows a feasibility study conducted in 2014-15, with support from the federal office of transport.

The group said it has received support from major retailers such as Coop and Migros, as well as SBB Cargo and SwissPost.

It is seeking investors with contributions ranging from 10,000 francs to 300,000 francs and above, according to its website.

"The project has met with great interest — even with insurance and pension groups," Daniel Wiener, in charge of investor relations for CST, told Tages Anzeiger newspaper.

The backers foresee even the possibility of exporting the innovation abroad, he said.



Source: swissinfo.ch

Switzerland's Underground – Part Two - Road and Rail Transport

In the beginning...

Despite being born in a tiny settlement high above the Maggia valley in Canton Tessin, Pietro Morettini soon became a man of the world. Amongst other things, he worked as head Engineer and fortification builder in the service of King Louis XIV of France. Newly married and rich in experience, Morettini eventually returned home to Locarno. In 1707, aged 47, he was contracted to build an opening into the Gotthard mountain. This was to replace the current treacherous route used to cross the gorge, the "Twaarrenbruecke" — a 'board track' bridge hanging on chains, without so much as side railings, strung up along the edge of the Kilchberg cliff-side along the Reuss River. It took eleven

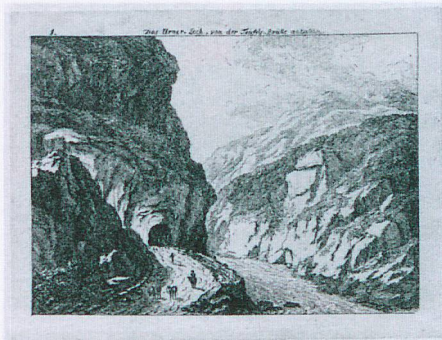


A depiction of the Twaarrenbruecke, the treacherous cliff-side board-track used to cross the gorge

months, using only picks and black gunpowder, to create a 64 meter long hole through the often cumbersome rock — resulting in the first of today's many transport tunnels through the Alps — the now legendary "Urnerloch", which is still in use as a railway tunnel to this day. But it didn't all run smoothly for Morettini, because his tunnel ended up costing twice as much as budgeted — a flaw which, to this day, has become the symbolic norm for tunnel construction. The common saying is that: from the outside, it is impossible to know what barriers await when the inner peace of a mountain is disturbed!

But the creation of the Urnerloch had a profound effect — tunnel fever very quickly gripped the whole of Switzerland, as it

Tunnels



The Schoellenenschlucht (gorge) and Urnerloch, Switzerland's first alpine tunnel, drawn by Salomon Gessner, 1781

became a much safer and easier way to reach destinations crossing alpine terrain. For many years tunnel building was achieved using only explosives and physical labour to cut through the rock and earth, but in more recent decades, tunnel boring machines have taken over, chewing their way ever faster through a multitude of hills and mountains. If averaged out, over the past 300 years, Switzerland has built around 11 meters of tunnel per day - although most of this has taken place only over the past century or so. To date, a total of about 814 km of road tunnels, and 424 km of rail tunnels have been constructed.

Many of the older rail tunnels have had a second tunnel built alongside, including the recently opened second Gotthard line, which now measures a total of 152 km (57 km per tunnel, as well as a total of 38 km of emergency galleries, spaced every 330m throughout). But as opposed to Pietro Morettini from over 300 years earlier, this newest alpine transversal came in on budget, and was opened a whole year ahead of schedule.

Due to the Gotthard, as well as the Monte Ceneri tunnels, there is practically no more elevation for freight trains to climb between Basel and Milan - the highest point inside the Gotthard tunnel is 550m above sea level. This has resulted in taking 30 km and 60 minutes off the total journey, as well as a 10% reduction in electricity use.

Although we hear much about the huge achievements of the big tunnel projects, it also has to be acknowledged that there are many other smaller tunnels which have greatly enhanced both road and rail routes throughout Switzerland. At the other end of the scale, the two shortest rail tunnels - Moutier (BE) and Molino (TI) - are both only seven meters long!

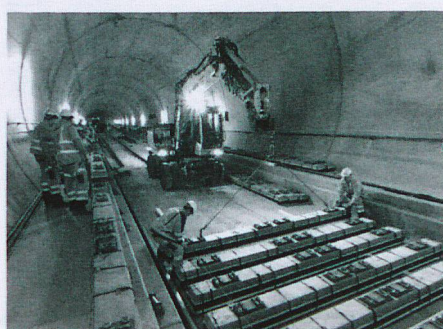
In February 2016, Swiss voters agreed to hollow out the Gotthard once again -

this time for a second road tunnel, as the current two-lane tunnel, which opened in 1980, regularly experiences 10 km plus traffic jams, particularly during weekends and holiday periods. Other projects are also either in the planning or building phase, such as Roveredo (TI), Gubrist (ZH) and Belchen (BL), as well as numerous emergency escape tunnels running parallel to existing road tunnels. Although very small in number, recent tragic accidents have resulted in the general population being in favour of this emergency system, despite both the minute possibility of such an event occurring, or the huge expense.

Currently also in the planning stage is a 22 km tunnel through the Grimsel, between Innertkirchen (BE) and Oberwald (VS), which will bring with it further advantages. Firstly, the cables for the new high-voltage power line from Mettlen (LU) to Ulrichen (Obergoms, VS) will be able to be laid hidden in the tunnel, avoiding the need to construct visibly obtrusive pylons through the Alps. Secondly, the new tunnel will be able to connect the current narrow gauge railway tracks between picture-book tourist destinations of Luzern, Montreux, Zermatt and St. Moritz. Once completed, the estimated 400,000 tourists annually can then travel from Luzern directly to Zermatt without having to change trains any longer. It is expected this tunnel should be ready by 2025.

For the future, a dead straight 28 km tunnel is anticipated between Aarau and Zurich to take the pressure off the current Bern-Zurich line, cutting travel time between these two main cities to only 45 minutes. In Basel, they are waiting for a tunnel to be constructed under the Rhine, to finally allow the railway systems of the 'three state triangle' to be technically compatible. It is no longer a matter of if, but only when, as currently Switzerland cannot keep up with the demand of new tunnels yet to be built.

Source: Wikipedia and Schweizer Familie Magazin



Laying the railway inside the Gotthard Basis Tunnel

Älplerchilbi

4 March 2017 at the Swiss Residence

The Swiss Residence once again opened its gates, this time to celebrate the traditional Swiss autumn festival Älplerchilbi. Reminiscent of the Morgarten event in 2015, it was again a Swiss celebration brought to life by the efforts of the Swiss Embassy, the New Zealand Swiss clubs as well as numerous volunteers.

The sunny weather certainly added to the joyful day for the many guests, as did the continuous children's rides in the carts of the beautiful Swiss dogs, the yodel and alphorn renditions by the Swiss Kiwi Yodlers from Auckland and the accordion music by the musicians from Taranaki. For the hungry, there was plenty of Raclette, potato salad and Swiss sausages made by Peter Koller, a young butcher from Appenzell freshly established in Blenheim, as well as Swiss cakes. For the thirsty, the bar offered craft beer from New Zealand and cider as well as Swiss wine from Ticino and from the Vaud vineyard of our Minister of Defence, Federal Councillor Guy Parmelin. There was also plenty of fun to be had with the air gun shooting competition, the Swiss bowling as well as the kids' corner. For young people who had recently come of age, there was also a young citizen's ceremony.

Just after 4.30pm, the "Schwingen" started, attracting a large crowd of spectators. Many men and boys competed against each other on the sawdust and were rewarded with Swiss Army knives. By the time the official part started, everyone was in a celebratory mood and listened to the addresses by the Attorney-General of New Zealand, Hon. Christopher Finlayson, as well as by Ambassador David Vogelsanger. The celebratory mood continued well after the speeches and national anthems had ended. The celebration of the 60th anniversary of the Wellington Swiss club saw a speech by president Roland Schütz thanking the founding members of the club followed by sumptuous anniversary cake. As the evening progressed and people sat together around the freedom fire, one could hear many traditional songs accompanied by the accordion musicians.

Overall, it was truly another great Swiss day, one that will remain in the memories of many.

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Academic Intern

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