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**SUSTAINABLE ROADS –
PART OF THE TRANSPORT CHAIN
IN A GLOBALISED WORLD**

Rahel GALLIKER
Swiss Federal Roads Office
www.astra.admin.ch

NORTH-SOUTH AXIS TRAFFIC MANAGEMENT

1. INTRODUCTION

Managing the north-south traffic stream through Switzerland is a major challenge at the beginning of the 21st century. Setting the goals to protect the Alps against the nuisances caused by traffic and to improve safety in the long tunnels, where security is a critical issue, has led to adopt measures focusing on goods traffic.

These measures apply first of all to the roads – and in particular to the St Gotthard and St Bernardino road tunnels through the Alps. Limiting the freight traffic going through the tunnels, in order to ensure users safety, was a result of a strategic decision. This strategy is supplemented by another policy that shifts freight transport from the road onto the railways. To achieve this, tremendous investments have been granted to make rail goods transport across the Alps more competitive, leading to the construction of two very important railway tunnels.

2. ROADS

2.1. Main crossing routes

There are four main Swiss roads crossing the Alps:

- the Grand St-Bernard tunnel, between Switzerland (Valais canton) and Italy
- the Simplon pass also linking Switzerland (Valais canton) to Italy
- the Gotthard tunnel route between Uri and Ticino cantons
- the San Bernardino tunnel in the Graubünden canton.

Graphik: Hauptübergänge (Quelle: www.astra.admin.ch)



In 2005, 1,2 million heavy goods vehicles have used these routes across or through the Alps.

During the first quarter 2006, some 600 000 heavy goods vehicles have used these four crossing routes.

2.2. Interval traffic-feed system in the Gotthard road tunnel

Following the fire that burst out on Oct. 24th, 2001 in the Gotthard road tunnel, the tunnel remained closed until Dec. 21st, 2001. Heavy goods vehicles traffic was then managed on an alternated one-way basis until the interval traffic-feed system was put in place on Sept. 30th, 2002. Since then, only 1000 cars per hour are permitted to pass through the Gotthard road tunnel. One heavy goods vehicle is equivalent to three cars. With this procedure, heavy goods vehicles are carefully fed one by one into the tunnel through both portals. The number of HGV allowed into the tunnel – between 60 and 150 per hour each way – depends on the number of cars. Since this system was implemented, the traffic has improved both in terms of fluidity and security. As a matter of fact, it reduces the risks of accidents by limiting the number HGV passing each other inside the tunnel.

When traffic capacity has reached its maximum limit at the tunnel portals, the exceeding number of heavy vehicles is held in designated waiting areas or holding zones. Only vehicles known as part of the “S-Traffic” are authorized to drive beyond this parking point. However, these vehicles may only do so in compliance with the interval traffic-feed system.

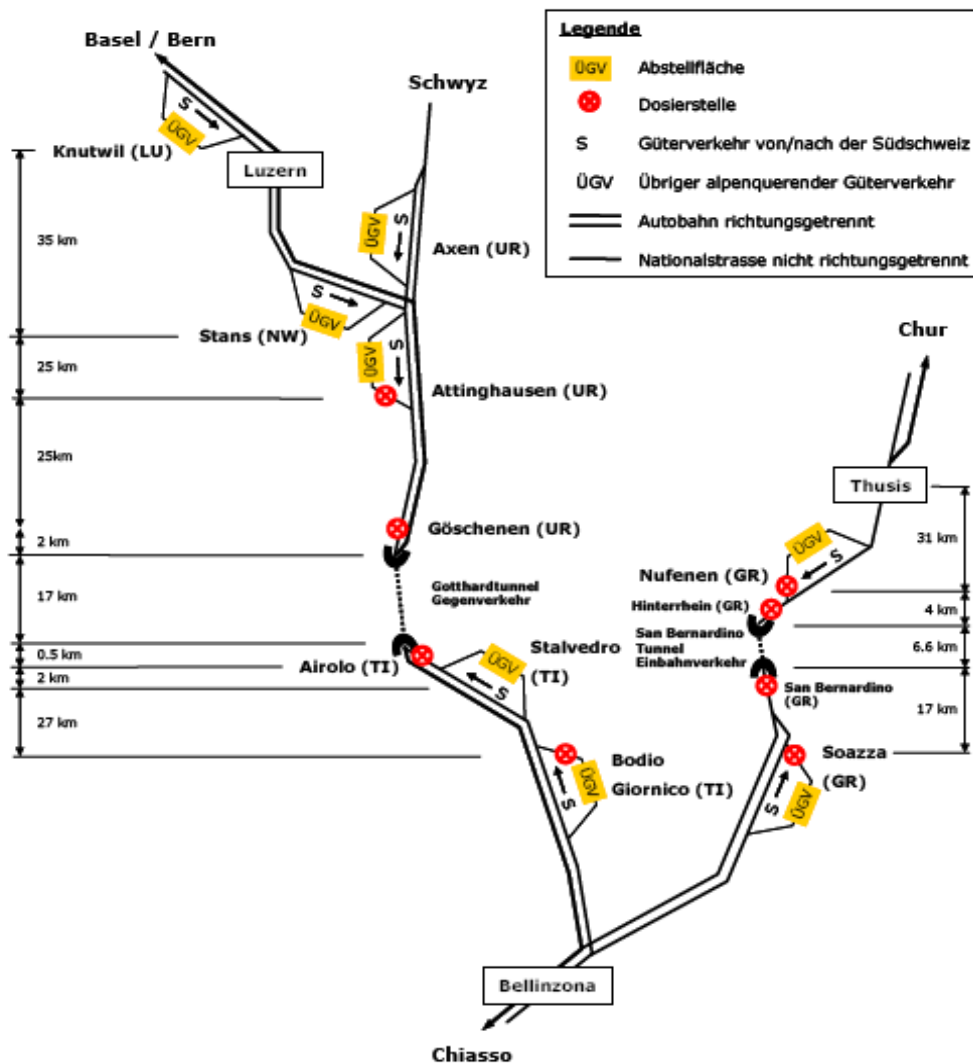
- « S-Traffic »: domestic goods transport across the Alps, but not across national borders, where both the starting point and destination remain within neighbouring local cantons. This traffic is deemed important for the economy of southern Switzerland.

If it appears that heavy goods traffic cannot be allowed into the Gotthard tunnel before 10 pm – night time limit – possibly because the maximum number of vehicles stopped in the parking area has been reached, officials may claim the so-called “Red Phase”.

- « Red Phase»: transiting heavy goods vehicles are notified by the relevant customs authorities that Switzerland cannot be driven across during a certain period of time, through the A2 (Luzern-Gotthard-Chiasso) or the A13 (Chur-Bellinzona). HGV already in Switzerland and internal traffic is not affected by the « Red Phase».

2.3. Traffic limitation system in the San Bernardino tunnel – alternated traffic

At the San Bernardino tunnel, alternated traffic is applied to heavy goods vehicles. This prevents HGVs to cross each other inside the tunnel. This limitation measure means stopping the trucks before the south entrance of the tunnel while HGVs are driving from north to south, and reversely.



2.4. Funds to support the alpine transit

Presently, a system called “Alpine transit fund” is being tested and implemented. It is a tool that helps managing the reduced traffic capacity across the Alps or the number of travels across the Alps, using marketing methods. There are two basic models:

- « The Slot Management » is a toll system set up on a voluntary basis, allowing drivers to use a specific trail (or “slot”) at a given time. As reservations are bought at the price of the market, this option speeds up urgent goods transportation when traffic is overloaded. Vehicles without reservation then need to wait.
- « Ceiling and Commerce » is a compulsory toll system for crossing the Alps. This allows to efficiently managing the limitation of heavy trucks crossing the Alps. Tolls are either granted for free, sold at a fixed price, or by auction. After their first acquisition, they are licensed to be sold.

3. TRAFFIC SHIFTING POLICY

3.1. Reason for shifting

Shifting as much heavy goods traffic as possible from road to rail across the Alps is one of the main objectives of the Swiss Transport policy. Means to achieve this goal include the performance-related Heavy-Vehicle Fee (HVF), modernizing the railway basic equipment and increased competitiveness of the rail through the railway legal reform. In order to strengthen and accelerate the shifting process, the federal law aiming to shift the heavy goods traffic across the Alps, Traffic Transfer Act, has been applied since Jan. 1st, 2001. In its first article, the objectives are worded as follows:

1st Article of the Traffic Transfer Act:

¹ In order to protect the Alps area, the Confederation strives, together with the cantons, the Railways and its European partners, to progressively shift the heavy goods traffic on the rail across the Alps.

² The plan is to shift approx. 650 000 heavy goods travels yearly from road to rail across the Alps; this goal must be achieved as soon as possible, at the latest two years after the opening of the new Lötschberg tunnel.

³ Should the target formulated in above paragraphs 1 and 2 not be achievable as planned, the Federal Government will set fixed milestones for the shifting and will take necessary measures or make proposals to the Federal Assembly. If needed, the Government will propose additional measures in compliance with the provisions applying to an executable law as described in art. 84 of the Federal Constitution.

3.2. Supporting measures

The following tools have been introduced as accompanying measures to reach the objectives of the traffic shifting :

- rational application of the prescriptions concerning heavy goods road traffic,
- improvement of the framework conditions that regulate the goods transport on rail and improvement of the railway productivity.

The financial resources to fund the supporting measures (compensations and reduction of the toll fees) amount to 2,83 billion CHF for 2000–2010.

4. RAILWAY

4.1. Main crossing railways

In Switzerland, there are two main railways across the Alps:

- the Gotthard tunnel linking the Uri canton to Ticino canton
- the Lötschberg railway tunnel linking Bern canton to Valais canton and the railway Simplon tunnel linking Switzerland (Valais canton) to Italy.

4.2. Combined Traffic

In addition to the traditional loading of cars/trucks on the train, Railway goods transportation is promoted through what is known as “combined traffic”. This means that

goods elements such as container trailers, semi-trailers and trucks are loaded upon the train for long distance travels. Detail local distribution is then carried out through the road.

1. Container/Wechselaufbauten (unbegleiteter kombinierter Verkehr)



2. Sattelaufleger (unbegleiteter kombinierter Verkehr)



3. Begleiteter kombinierter Verkehr (Rollende Landstrasse)

