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The "twinning" of Le Shuttle and Swiss locomotives

by Peter Marriott, George Hoekstra & Les Heath

Peter Marriott provides a brief overview of the Channel Tunnel and its Le Shuttle locomotives to celebrate the naming of four locos after Swiss tunnels.

As already reported in Swiss Express to recognise the close co-operation of Swiss railway engineers to the builders of the Channel Tunnel, four of the Tri Bo 7500 hp Le Shuttle locos are being named after famous Swiss railway tunnels.

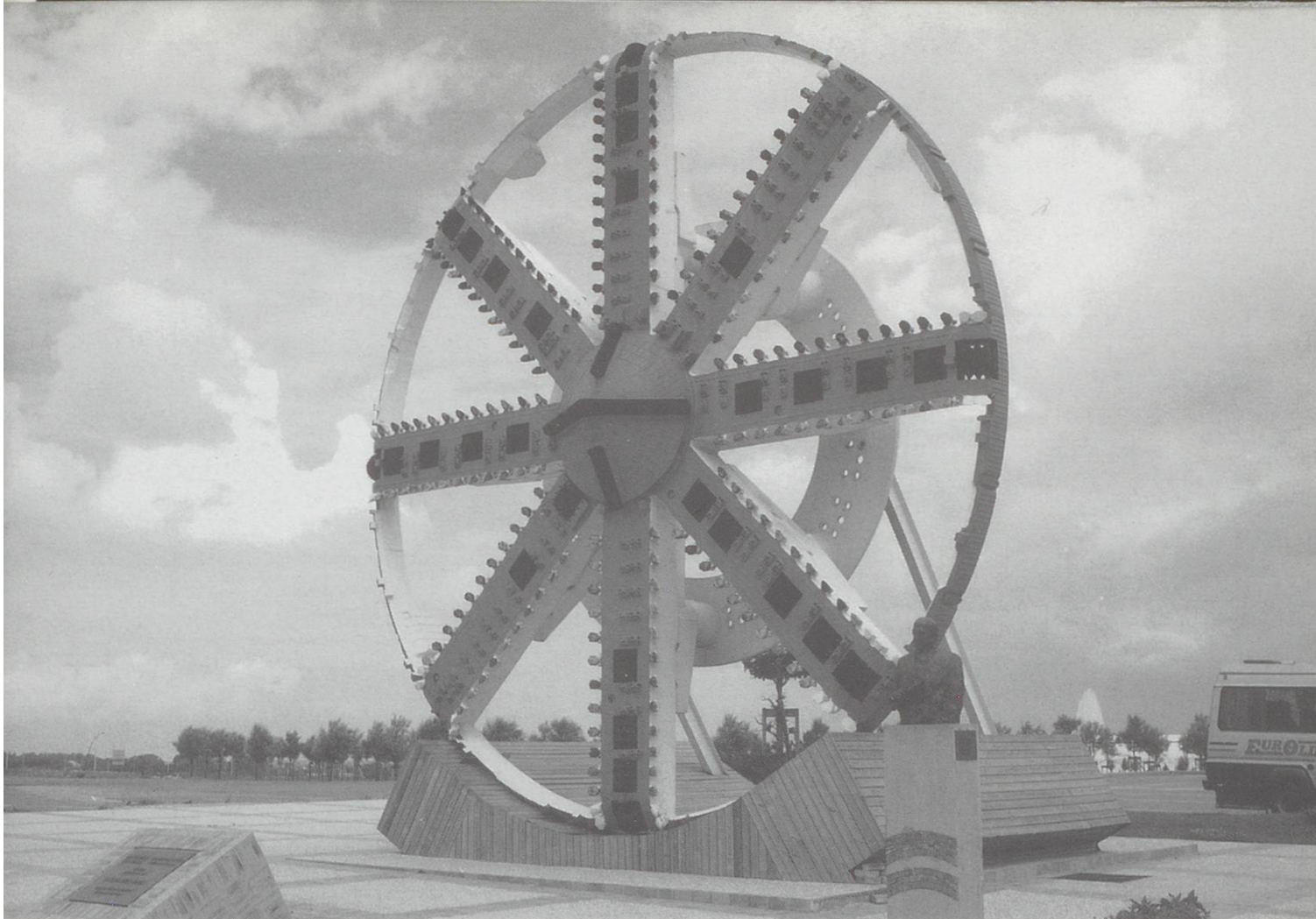
Reciprocally, four Swiss locomotives are to be named after the Channel Tunnel. The first naming ceremony of a Le Shuttle loco took place at Folkestone on 8 April 1997 when locomotive number 9024 received the nameplate "Gotthard". The second naming took place on 2 July 1997 when locomotive 9015 was named "Lotschberg" by Mrs Josi, the wife of Mr. Martin Josi the Managing Director of the Bern Lotschberg Simplon (BLS). The remaining names to be applied during 1997 are "Furkabisistunnel" and "Jungfrauoch". The names being given to the Swiss locos are "Chunnel", "Eurotunnel",

"Channel Tunnel" and "Aermelkanaltunnel".

The Channel Tunnel

The first serious proposal to build a tunnel under the English Channel was put forward in 1802 when Albert Mathieu-Favier proposed that horse drawn carriages should carry passengers in a submarine tunnel using iron chimneys at regular intervals for ventilation. Various subsequent projects gained favour in periods of peace and good relations between France and Great Britain but these soon lost favour in times of war! Around 1880 tunnels were started on both sides of the Channel but the patience of the builders soon evaporated and the digging stopped. A resurrection of interest and excavations took place in the 1920's but once more little headway was achieved. More recently, in 1974, the project was restarted but financial difficulties once more caused the burrowing to cease.

The building of the Channel Tunnel (Tunnel sous la Manche) commenced on 1 December



Opposite page: On the platform at Cheriton, from the left Sir Robert Malpas and Mr & Mrs M. Josi, with the shuttle loco "Lötschberg", after the naming by Mrs Josi.
Photo: Les Heath

Above: The cutting face of one of the boring machines used to cut the main Channel Tunnels on display outside the visitor centre at Coquelles.
Photo: Les Heath

1987 and the two rail tunnels met in May & June 1991. It is the world's longest underwater rail tunnel being 50.45km in length of which 38km is under sea. The average depth beneath the seabed is 45m with a maximum depth of 75m beneath the sea floor. The Channel Tunnel is actually three tunnels - two for the railway (the northern tunnel has the line carrying the traffic travelling from Britain to France) with a smaller service tunnel.

The official opening took place on 6 May 1994. Freight services began on 1 June 1994, Eurostar commenced on 14 Nov 1994 with Le Shuttle public services beginning on 22 December 1994.

Le Shuttle locomotives

The motive power for the Le Shuttle tourist and freight trains is the Bo Bo Bo (tri-Bo) electric locomotives - one at the front and rear of each train. The 38 locomotives, which each weigh 132 tonnes, were built by Brush Traction at Loughborough from 1992 utilising electrical

equipment by ASEA Brown Boveri. Each locomotive is 22 metres long, 4.2 metres height above rail and 2.97 metres in width.

The locomotives are built to Berne gauge and deliver 7500 horse power. One loco is capable of pulling a full train under its own power in the event of a failure by the other locomotive. The power supply is overhead catenary utilising 25kV taken from both sides of the Channel. The locomotives have a maximum speed of 160 km/h (100 mph) with a normal operating speed of 140 km/h (87 mph). Each loco has three two axle bogies - all six axles are powered. Both friction braking and electrical regeneration braking systems are used.

Whilst the Tri-Bo wheel arrangement is not generally found on either British or French railway systems it has been extensively utilised on the Italian network. Six axles were considered necessary to provide sufficient adhesion (some gradients are as steep as 1 in 90) and reduce wear on the curves on the reversing loops at



Above: The service tunnel boring machine has just been set up on a roundabout near to the terminal at Coquelles.

Photo: Les Heath

Folkestone and Coquelles.

The driver sits in the cab of the leading locomotive with the train captain based in the cab of the rear locomotive. The captain is also trained to drive a Shuttle (either half or the whole of the train) in emergency situations up to speeds of 80 km/h. The rear of each locomotive has a small driving cab for use in light running. One half of the fleet faces east to west and the other half in the opposite direction. They are all allocated to the Coquelles depot within the Eurotunnel terminal in France. The loco numbers run from 9001 to 9038. Additional locomotives have been ordered.

Naming Ceremony Kandersteg station

On the 11th June BLS 465-012 was named "Eurotunnel". At 11am precisely, two representatives from the International Scout Centre in Kandersteg pulled down a cover sheet decorated with the flags of France, Great Britain and Switzerland.

Using the Tunnel

For those of you that have not already experienced using 'Le Shuttle' as the car carrying train service is known it is a very simple matter of

driving to a toll booth presenting your ticket and then driving into a motorway service area with the difference that at this service area you can buy duty free goods as well as food and drinks.

After you have bought your duty free, fed and watered everyone it is a simple matter of driving through the French passport control and into a holding area where the cars wait for the next shuttle train. With up to four shuttles an hour you do not have to wait long. You drive down onto a platform and into the side loading door of the train. Each coach is self contained and pressurised, the journey takes about 35 minutes. Once the shuttle arrives on the other side, the unloading is as simple as loading, by driving on through the train and out of another side loading door at the front of the train. Within five minutes you are out onto the French road system including access to the 'Peage' (Toll motorway) for your onward journey to Switzerland.

If you are not sure, why not take a day trip to try it out.



Above: The two members of the International Scout group remove the cover on Re465 012.

Below: From left to right: P. Nydegger chairman of the BLS board; M. Lehner, Goppenstein Stationmaster; Chr. Hulse, British Ambassador, Bern; Uibeke Schellerup from Denmark and Ian Caunt from Gt. Britain, the scouts who performed the ceremony; E. Gurtner, Stationmaster, Kandersteg; James Evans, Director Railway Business Eurotunnel; M. Josi, Director BLS.

