INTERNATIONAL SCIENTIFIC CONFERENCE
CIBv 2010
12 – 13 November 2010, Braşov

TRANSFĂGĂRĂŞAN - THE MOST SPECTACULAR ROMANIAN ROAD

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Abstract: In September 2009 the cast and crew of the British television show Top Gear were seen filming along the Transfăgărăşan road [1]. The segment appeared in first episode of Series 14 which first aired November 15, 2009 [1]. Host Jeremy Clarkson claimed he made a mistake in naming the Stelvio Pass as the best road in the world and instead Transfăgărăşan should have this title [1]. Perhaps this is not true, but Transfăgărăşan is certainly the most spectacular road in Romania. The paper presents the main technical elements of this road, and some historical landmarks.

Key words: alpine road, tunnels, road works

1. BRIEF HISTORY

In 1969, Brasov Forest Trust Building for the Ministry of Forestry runs a forestry road to solve the transport of wood from the basin Balea of Fagaras mountains. In that year, Sibiu County Office of Tourism, the tourist huts household Balea Lake and Balea waterfall cottages and assure transport of food and materials with 20-30 asses, intervened for the design and implementation of forest road to the cottage Balea waterfall.

Ministry of Forestry through the National Institute of Wood as a designer and Forestry Building Trust in Brasov as builders run since 1960 hundreds of miles of forest roads for timber transport and have become like a real touristic interest.

Auto Road Transfagarasan began as forest road up to the Cabana Balea (Balea pelvis) Waterfall, then OJT (county office of tourism) Sibiu has completed execution to Cabana Balea Cascada.

In these years, 1969-1974, together with army engineers from Regiments of Alba Iulia and Ramnicu Valcea and the design and execution of HCM116/1970 established dual band road to DN1 - Balea Lac 35.1 km, tunnel under the Paltin Ridge 878m at an altitude of 2042m, at Balea Lac-Vidraru Lake border lake shore 25 km 30 km left to the Vidraru dam, 91km total.

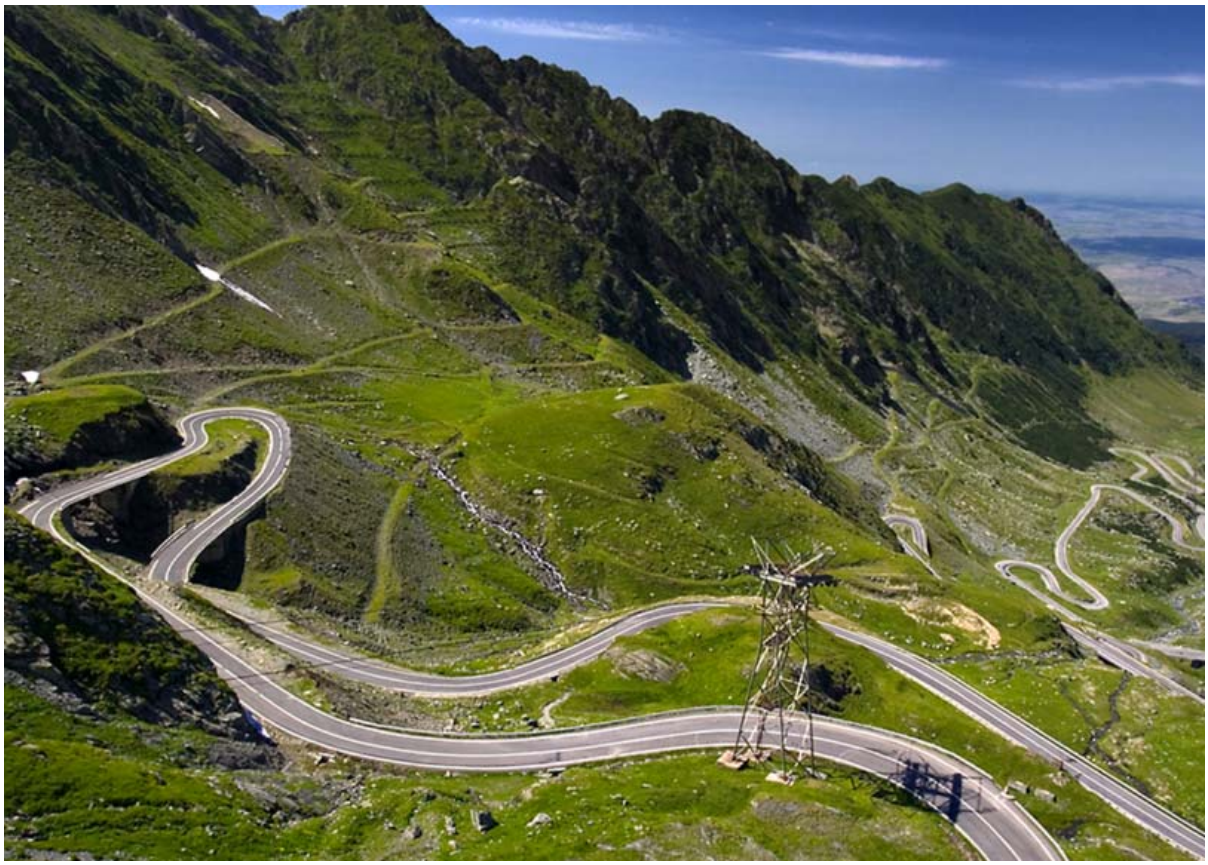

Fig. 1 Road view

The way building was made simultaneously with the design being employed by the decision of council of Ministers following ministries:
-Ministry of Forestry-slope design and execution of road Arpas -Balea Lac 35.1 km and Balea Lac-Vidraru Lac 25.0 km.
-Ministry of National Defense-execution-digging and earthmoving, pavement by stone, retaining walls, provide unskilled labor to culverts, bridges, viaducts and awnings.
-Ministry of Electricity 0.9 km tunnel
-Ministry of Mines-Balea Cascada -Balea Lac cable.
-Ministry of Transport, road on border of Lake Vidraru 30 km.

2. GEOMETRY OF THE ROAD AND VOLUMES OF WORKS EXECUTED AND DESIGNED

Geometry of the road and volumes of works executed and designed are:
-Length of 91km of which on 40 km earth embankments, on 21km rock embankments, widening of forest road on 30km.
-Carriageway width of 6m in alignments with 2m verges.
Minimum radius of 40m and 15m in coil curves, with clothoides.
-Gradient 8% (exceptionally 8.6% on short sections in alignment).
-The entire route was run over 3.8 million cubic meters of earth and rock excavation, over 290,000 cubic meters walls, 27 bridges and viaducts, 550 culverts, 80 km safety railings, 878 m tunnel.

Fig. 2 Military Engineering Gate, km 25+320, Bâlea Cascadă – Cascada Bâlea road sector

On the northern slope of 35.1 km were designed and executed volumes with average 32mc/ml, with areas over 100mc/ml blasting rock, 40,000 cubic meters of raw stone masonry mortar, 15 bridges and viaducts.

The road was put into operation in 1974, with 60,1 km crushed stone pavement (Arpaş - Vidraru lake), 30 km asphalt pavement on lake Vidraru contour and 0.9 km tunnel, Balea Cascade cable - Balea Lac.

Subsequently the Ministry of Transport has paved the entire route, and the Ministry of Forestry in Brasov Trust was made covers and avalanche control works on aisle Paltinu - Creasta Balea.

The Transfăgărăşan or DN7C is the most dramatic and second-highest paved road in Romania.

The road turns run north to south across the tallest sections of the Southern Carpathians, between the highest peak in the country, Moldoveanu, and the second highest, Negoiu.

The road connects the historic regions of Transylvania and Wallachia, and the cities of Sibiu and Piteşti.

The road climbs to 2034 metres altitude. The most spectacular route is from the North. It is a winding road, dotted with steep hairpin turns, long S-curves, and sharp descents.

Due to the topography, the average speed is around 40 km/h.

3. **OTHER ELEMENTS**

The earth and rock embankments have been opened by one buldozerist of site, the military bulldozer, after which massive volumes of earth and rock, including rock-blasting engineers have been made by the regiments mentioned.

The massive blasting where cross sections were made up to 280 square holes were made T-shaped mine that were loaded with explosive calculated to achieve the deployment of the rock without being thrown in the air.

Fig. 3 Ciuta I Viaduct, km 20+600

To create multiple work fronts have been dismantled and bulldozers compressors that were transported by military helicopter over the waterfall (1650 m altitude) and the heliport at Balea Lac (2050 m altitude) where they have to replace by be put into service.

The road pavement structure was upgrading between 1976 and 1980 with 10cm broken stone, 4cm asphalt binder layer and 4 cm asphalt surface course and widening of road to 7 m.

In 1995 the National Road Administration approves the operating rules of the road DN7C "Transfăgărăşan" by AND 524/95.

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Received September 20, 2010