

GUEST EDITORIAL

The request of Dr. Goel, Editor of the Journal to write a Guest Editorial, was both tempting and challenging.

Tempting, because I have been associated with the journal for quite sometime, but never had an occasion to write a Guest editorial. The task is challenging, because I want to share something with the tunnelling fraternity. I therefore tried to have a look at the world scenario with the help of internet and what struck most interesting to me to share with you now is the unique railway tunnel design of the 1940s which in 21st century is getting transformed into a road and railway tunnel in USA through which one can now travel to **Whittier** through this well known **Anton Anderson Memorial Tunnel**. It will be a single automobile traffic to drive directly over the railway track – a new design that has resulted in saving of tens of million of dollars. In fact the design of construction is one of the most challenging project in the **United States**.

The work involved removal of the existing railroad tract and the underlying crushed rock and replacing by 1800 pre-concrete panels of 7.5 ft. long and 8 ft. wide through out the tunnel. The concrete was so poured that it gave an 11.5 ft. wide driving surface within the tunnel.

Equally important feat of the tunnelling was the blasting of rock in the existing 1941-42 constructed tunnel to make way for tunnel-ventilation fans and ‘**safe houses**’ at 1600 ft. intervals for emergency use.

Another feature of this tunnel design is that it has a two-tired drainage system, a total of 10 miles of pipeline below the concrete surface to remove water in rush, of 250 gallons per minute during peak periods, and 90-60 gallons per minute during the rest of the year.

The tunnel walls are mostly natural rock walls with some steel and mesh at weak places. The tunnel is located in snow bound area and is exposed to avalanches, the design of portal roof has been constructed to take a force of 2000 pounds per square ft. with the help of 14 inch thick concrete panels on **Whittier** side, and 220 pounds per square ft. on the **Beer Valley** side which is equivalent to 11ft. of new snow.

Can we not take advantage of these tunnel technologies in India and make effective use of rail road tunnels for automobiles whenever possible and economically feasible. This is a question, which needs to be debated by our tunnel experts both from design and construction point of view.

Prof. B. B. Dhar
Director (Research)
Association of Indian Universities
New Delhi – 110 002