

A brief history of transport infrastructure in South Africa up to the end of the 20<sup>th</sup> century

# Chapter 1: Setting the scene

Herewith the first chapter of a new series comprising nine or ten chapters, which will appear in *Civil Engineering* over the next few months. This résumé of the development of transport infrastructure in South Africa is not intended to be a comprehensive one, but by airing the subject readers might be encouraged to participate and add additional value to an understanding of this facet of our history.

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## PREFACE

For a country to prosper, effective means of moving people and goods are essential. The adequacy or otherwise of a country's transport infrastructure plays a significant role in its social and economic development; there are some who suggest that efficient transport is second only to education as a catalyst for a country's growth. The role of good transport in a country's growth is especially important in South Africa where the nearest port is some 600 km away from the industrial heartland, where there are no navigable rivers, and where the vast part of the interior of the country is situated on a plateau some 1 000 metres above its ports.

Throughout the centuries the progress of any community has been dependent on the provision of cheap and efficient transport of people and goods. For transport to function effectively, however, adequate supporting infrastructure is a necessity.

In order to chart the future, an understanding of the past is necessary. This résumé of the development of transport infrastructure in South Africa covers the period up to the end of the 20<sup>th</sup> century and is broadly divided into two separate eras, namely the "early days", up to the middle of the 20<sup>th</sup> century, and the "modern era", which covers the last fifty or so years of the

20<sup>th</sup> century. This series of around nine or ten chapters (to be published in *Civil Engineering* over the next few months) is by no means a comprehensive one. However, it is hoped that by airing the subject others will be encouraged to participate and add additional value to an understanding of this facet of our history. Also, it is unfortunate that records have only been found regarding the transport system of the “white settlers” in South Africa in the early part of this period. Perhaps this deficiency might be rectified.

## SETTING THE SCENE

There is evidence that trade was conducted in the subcontinent in early times amongst the indigenous inhabitants, i.e. the Bantu in the eastern, and the Khoikhoi in the western parts. Cattle and sheep, iron and copper, implements and ornaments, and according to Professor TRH Davenport (1989), “dagga” were among the commodities that were traded. There are, however, no records of the trade routes used in those days to facilitate this interaction.

At the time the predominant form of local and long-distance transport was portage. In some places an indigenous technology of sledge transport was also developed. However, largely as a result of environmental constraints and political instability, the volume of regional trade in pre-colonial southern Africa never reached the proportions which would have necessitated the establishment of a formalised network of trade routes and infrastructure on the scale that occurred in other parts of the African continent.

Borrowing from OH Muller (circa 1985) and Professor TRH Davenport (1989) in this scene setting, “the very discovery of the shores of southern Africa by European mariners is linked to a transport event, indeed to one of the great transport calamities of all time”. When the Turks conquered the Byzantine Empire, culminating in the fall of Constantinople in 1453, they cut the trade routes along which caravans had moved since time immemorial to supply the people of Europe with the treasured goods of the East, notably spices. A race started in earnest to find an alternative route for this lucrative trade. The Portuguese were particularly enterprising and sent their mariners out in search of such a route. In 1487/8 Vasco da Gama discovered the passage around the southern part of Africa, thus securing for his country the treasured prizes of the East.

Once regular shipping was established, there was an obvious need for resting points along the route of the gruelling eighteen month voyage. The Portuguese and the Dutch established such places along the shores of southern Africa. The best known of these is Cape Town, which was founded in 1652, right at the southern tip of the continent. The sole reason for its coming into being, and its principal purpose for at least the first two centuries, was to serve as a halfway station between the West and the East. For many decades after being established, the settlement at the Cape retained its original character as a trading post for serving the passing ships, and there was little need to develop trading routes into the hinterland.

The earliest reference to transport infrastructure in South Africa is found in the diary of Jan van Riebeeck, the first governor of the Cape. On 4 August 1653 he wrote: “The bookkeeper Verburgh was (today) sent to the forest with 13 men, to make a good road for the wagon to transport wood.” In fact, no road was built; Verburgh and his 13 men merely marked out a route, thus setting the road building pattern for the next 150 years – the ox wagons of the time merely following the footpaths and game trails over the mountains.

During the period from 1652 to 1806 the Cape was considered valuable only as a service station for its owners’ East Indian trade. Apart from a small length of street work in Cape Town, no roads were built. Making the sands of the Cape Flats and the mountain barriers beyond passable for road transport was altogether beyond the financial ability or the needs of the settlement. Tracks of a sort led to Van Rhynsdorp, Tulbagh, Uitenhage and Graaf-Reinet, but these were not used by vehicles if pack animals or riding horses would do.

On the other hand, extensive exploratory journeys were undertaken or fostered by the Company and the country was explored as far afield as Keetmanshoop, Kuraman, Bethulie and Butterworth, chiefly by Van Haerwarden, Potter, Danekaert, Van Meerhof, Cruythoff, Croes, Bergh, Van der Stel, Schryver, Beutler, Hop, Coertse, Gorden, Plettenberg, Williams and Janssens.

The exploration of the hinterland was, as mentioned earlier, greatly handicapped by the adverse geographic and topographic conditions. Unlike North America, which was “opened up” at about the same time, and where “a thousand rivers” facilitated deep penetration into the hinterland, the southern African coastline is singularly compact and unfriendly. There are virtually no natural harbours, no navigable rivers or waterways permitting access to the interior and the oceans are whipped up by frequent gales, to which the many hundreds of ships wrecked along the South African coast since the days of Vasco da Gama bear witness.

Having been established at Cape Town, the settlers’ land transport chances looked as bleak as those encountered by the mariners. The hinterland consists of a plateau of circa 1 000 metre altitude, barred from the coastal regions by virtually insurmountable ranges of mountains, some of which extend all the way to the coast. As a result, expansion was very slow and development severely hampered.

For the first 150 years, until the early 1800s, geography confined most early settlers in southern Africa to the fertile coastal regions, with the principal obstacles to inland movement being, as mentioned above, the escarpment, the deserts and the lack of navigable rivers. Where transport was possible, the wagon and “transport-riding” became the dominant form of transport right up to the mid-19<sup>th</sup> century

By way of exception, however, in the early years of the 18<sup>th</sup> century when the crop farmers of the Cape peninsula and Stellenbosch were running into harder times, the *trekboer* was starting to emerge as the Cape’s first white frontiersman. The advance of stock farmers east across the Hottentots Holland Mountains into the Overberg region began at the start of the 18<sup>th</sup> century. The people who had first settled at Table Bay under the flag of the Dutch East India Company brought with them two revolutionary means of land transport—the horse and the wagon—which gave them transport opportunities in terms of speed, range and capacity far superior to anything ever seen before in this part of the world.

The principal means of travel was by ox wagon, an ingeniously conceived vehicle, robust and flexible at the same time, much smaller and lighter than the big, rumbling affairs which could still be seen on the dusty roads of the highveld as recently as the mid-20<sup>th</sup> century. It was drawn by ten or twelve oxen and could negotiate unbelievably tough terrain. Although more efficient than portage, especially for heavy bulk transport, the ox wagon and the oxen were slow and vulnerable to floods, droughts and annual disease. As such it proved incapable of satisfying the

growing transport demands of the 19<sup>th</sup> century local economy. Its high cost and vulnerability were such that the first major ore deposits discovered in the Cape in the 1670s were not exploited because of the prohibitive cost of ox wagon transport.

Muller (circa 1985) quotes the Reverend CI Latrobe as reporting from his travels during the early 1900s that, "It was not so much the steepness which rendered the pass so dangerous, as the extreme unevenness of the road, if road it may be called, where, as yet, art had not assisted nature, and the traveller may pass over rocks. In steps of one or two feet perpendicular height, the wagons bouncing down, reeling from side to side, and but for the management of Hottentots accustomed to such service, in continual danger of over-setting. They support the wagon, by thongs fastened to each side, pulling with all their weight, either to the right or left, as otherwise, in several places, the wagons, with all their contents, and the poor beasts staggering before them, would be precipitated into the abyss below. Less serious accidents occurred quite frequently." Thomas Bains, well-known traveller/explorer, painted no fewer than 25 pictures showing ox wagons capsized or broken down.

The next phase in the development of transport infrastructure in South Africa was the period from 1806 to 1895 during which South Africa was gradually opened up as the permanent home of a large and rapidly increasing settler population. Under various governments, ambitious and expensive road schemes for that time were undertaken, linking all parts of the country. During the early part of this period the exploratory journeys continued until the general topography and nature of the whole country and its surroundings were fairly well known. These explorations were followed by the Great Trek, as a result of which the whole country became populated by settlers, and a system of routes was established throughout.

The discovery of diamonds at Hopetown in 1867, and gold in the Murchison range in 1870, and on the Witwatersrand during 1880, gave rise to the transport riders' roads linking the mines to the principal ports. These were subsequently used by the stagecoach services. The roads were rough at best, but they were developed in a very short time, they carried an immense amount of traffic for the time, and they established the basic route system for the then Transvaal, Orange Free State, Northern Natal and Northern Cape, which prevails to this day.

In 1805 Cape Ordinance for the Administration of Country Districts number 264 stated: "One of the most effectual means to promote internal trade and civilisation is a regular and safe inland communication; the Field Cornets shall take particular care, therefore, to establish this."

Throughout this period (1806–1895) formal, permanent road construction was carried out vigorously in the Cape. In the Western Cape, Tulbagh Kloof (1807), Fransch Hoek (1831), Hex River Pass, the successful Cape Flats "Hardepad", Bainskloof, Mitchell's Pass (1840–1855), and the first Orange River Bridge (1877) were built primarily for economic trade reasons.

Graham Ross (2002) quotes Sir Lowry Cole, in his dispatch in 1830 to the Secretary of State for the Colonies, Viscount Goderich, justifying having constructed Sir Lowry's Pass without having obtained prior approval, as writing, "The Colony is miserably poor, with a population separated from the more civilised parts by mountains over which there are few passes. Being cut off from a market for their produce there is no stimulus for industry and the inhabitants must ever remain in their present state of poverty and semi-barbarism until these passes are made passable."

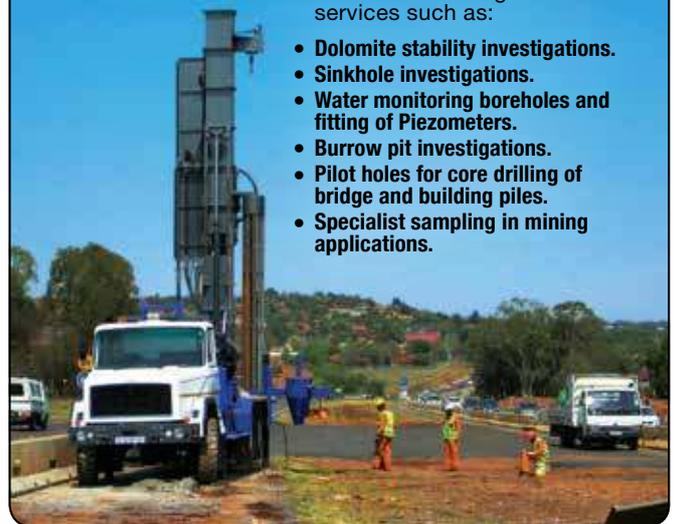
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In the Eastern Cape there was even greater activity to provide military roads for the "Border Wars", but, also incidentally for the benefit of the settlers and farmers. These included Port Elizabeth to Grahamstown (1820–1830), Graaf-Reinet to Van Rynveld's Pass over the Oudeberg, Grahamstown to Fort Beaufort over the Katberg Pass, and Grahamstown (bridging the Great Fish River) to King Williams Town.

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1843 onwards by bridging some of the rivers and constructing the Montagu Pass over the Outeniqua Mountains, so that by 1849 this 600-mile journey was done regularly in three days by post cart. The route was later further improved, notably in 1892 by bridging the Gouritz River with a steel arch, which was for many years the longest and highest span in Africa. The credit for most of this work must be given to John Montagu, Colonial Secretary of the Cape, for initiating it, and Mitchell, Andrew Geddes and his son, as well as the surveyor John Stanger for carrying it out.

The activity in the Cape was not paralleled in the then Transvaal or the Orange Free State Republics, however. In the Orange Free State the country is easy, the soils are generally good, and there were no large concentrations of populations, so that there was neither the need nor the money for a large road programme, as the existing track satisfied the local farmers, and the transport riders had only to start a new track alongside the old one when it was worn out. In the Transvaal, much the same situation prevailed, except that the Drakensberg Mountains which parallel the eastern border, involving heavy passes, were climbed by in-spanning two or three spans to each wagon in turn. In addition, there was and still is, a good deal of very poor soil. In 1875 the government levied a road tax and built a military road into Sekukuniland, which was subsequently extended to Lydenburg, Pilgrims Rest and Barberton, to serve these gold-fields. A number of badly needed bridges were built near the end of this period on the main roads between the principal towns.

Serious work only started in Natal in 1847 when William Stanger, transferred from the Cape, began the Durban to Pietermaritzburg road.

By 1875, there were 500, and by 1893, 2 750 miles of made road, and 34 bridges in the country.

Unfortunately the same economic development that produced this remarkable growth in road transport brought about its virtual extinction in the period between 1895 and 1920, when the large-scale construction of railways was started, which deprived the transport rider, stagecoaches and wagons of their custom and soon destroyed them altogether. The construction of road infrastructure was held in abeyance in favour of this new form of transport, the steam locomotive.

However, with the advent of the internal combustion engine leading to road motor vehicles, the construction of a rudimentary road network commenced in earnest during the first half of the 20<sup>th</sup> century. This formed the foundation of the current 21<sup>st</sup> century country-wide South African road network, which will be explored in the next chapter of this history of transport infrastructure in South Africa.

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## BIBLIOGRAPHY

- Davenport, T R H 1989. *South Africa, A Modern History*. Second edition. Southern Book Publishers: Bergville.
- Department of Transport, Notes on Departmental File, E18/62 by Col F Vincent: Pretoria.
- Muller, O H circa 1985. *Transportation in South Africa – a Historical Sketch*. Informal document, exact date unknown.
- Personal discussions, by M F Mitchell with the late P A de Villiers, B Slabbert and E B Cloete during the period 1960 to 1965.
- Ross, G 2002. *The Romance of Cape Mountain Passes*. David Phillip Publishers: Cape Town. □