Chapter-2

INSIGHT INTO ROAD TRANSPORTATION

- **Introduction**
- **General Overview (World wide)**
- **Road Transportation In India**
- **Gujarat State Road Transport Corporation**

2.1 INTRODUCTION

Road transport is a transport on roads that is the most popular means of transportation on land, which doesn't mean the rail transportation. In the wide sense, it includes every kind of transportation, which occurs on road.

In India, the road transport is a dominant mode of transport in the movement of goods and passengers. It is sole mechanized means of surface transport to serve the hilly, rural and backward areas not connected by railways. The freight traffic is generally owned and operated by private sector whereas both the private and public sectors share the passenger services.

2.2 GENERAL OVERVIEW (WORLD WIDE)

The History of Transportation covers the entire history of man. Early Paleolithic and Neolithic man walked through his world on his own legs, and couldn't transport more than he was able to carry on his back. In the late Neolithic, Beasts of Burden began to be used after animal's domestication, but even then they could only carry what could be loaded or tied to animal's backs. After some times early man wanted to move large stones or other heavy objects and invented the log roller for this task. There is evidence that many cultures in many geographic areas used simple log roller technology, but dating this is difficult and extensively used log rollers eventually inspired the development of the wheel. A lot of the early information is theoretical and undocumentable for History as such, and is really more in the domain of Archeology or Anthropology, but is the preface to the History of Transportation.

The history of road transport started with the development of tracks by humans and their beasts of burden. Animal-drawn wheeled vehicles probably developed in the time of Sumer. The chronological development of transport can be classified in the following manner:

The Sledge: 7000-4000 BC

From the beginning of human history people have dragged any load too heavy to be carried. But large objects are often of awkward shape and

texture, hence difficult to drag on rough ground. The natural solution is to move them on a platform with smooth runners known as a sledge.

Wooden sledges are first known by at least 7000 BC, among communities living by hunting and fishing in northern Europe, on the fringes of the Arctic. The domestication of cattle and more particularly the ox makes it possible that humans can transport heavier loads than before. This is done at first on sledges, which slither adequately over the dry grassland of southern Russia and on the dry earth of Mesopotamia. In both regions ox-drawn sledges are in use by the 4th millennium BC.

The Wagon: 3000 BC

A wagon is used more than 5000 years ago, near what is now Zurich. It has two pairs of solid wooden wheels, each attached to an axle, which turns with them. The wagon is extremely heavy and if once it stuck in mud, it stays where it is. It is now one of the earliest known examples of wheeled transport.

Whether first developed as ‘an invention' in one place, or re-invented in several wheels seem to have evolved as a natural solution to the problem of transport in areas where both oxen and wood are available. By 2000 BC heavy wheeled transport is in use in a region stretching from northern Europe to western Persia and Mesopotamia. For even greater glamour, and far greater speed, two new elements are needed - the horse and a spoke wheel.

Horse and Chariot: From 2000 BC

The horse is available in Mesopotamia by about 2000 BC. Not much later a two-wheeled chariot is developed. Its superstructure is made of a lightwood, and its wheels are not solid; their rims are of bent wood, held in place by spokes. A horse can pull a chariot at a trot at up to 8 miles an hour - and at a gallop twice as fast.

In subsequent centuries, up to relatively recent times, travel improvements are mainly limited to transport on the sea. They are the result of larger ships and of better methods of navigation.

On land one large new beast of burden is domesticated - the camel. But the main improvement in classical times derives from the construction of roads, first in the Persian and then in the Roman Empire.

The Great Canal Of Darius I: 6th Century BC

The cutting of canals for irrigation has been an essential part of the civilization of Mesopotamia, controlling the water of the Euphrates and the Tigris. Several canals link the two rivers, and small boats use these waterways. But the world's first canal created purely for water transport is an incomparably more ambitious affair.

Between about 520 and 510 BC the Persian emperor, Darius I, invests heavily in the economy of his newly conquered province of Egypt. He builds a canal linking the Nile and the Red Sea. Its access to the sea is close to modern Ismailia, which much later becomes the terminus of another great waterway, the Suez Canal.

Roman Roads: 2nd Century BC – 2nd Century AD

The great network of Roman roads was the arterial system of the then empire. It is constructed largely by the soldiers of the legions, often with the assistance of prisoners of war or slave labor. As the amount of labor involved is vast, these highways are elaborate technological undertakings.

One of the important purposes of the Roman roads was speedy communication; there were post houses with fresh horses every 10 miles along the route and lodgings for travelers every 25 miles. By the 2nd century AD the network spreads all round the Mediterranean and throughout Europe up to the Danube, the Rhine and northern England, amounting in all to some 50,000 miles. However, even though the very impressive achievement of the Persian roads, travelers on foot or horseback have rarely been so well provided for.

For transport purposes these roads are less satisfactory, because of the straight-line results in some very steep hills. Anyone with a wagon and horse would prefer an attitude less severe than that of the Roman road engineer.

The Grand Canal: 3rd Century BC – 13th Century AD

The Chinese, the greatest early builders of canals, undertake several major projects from the 3rd century BC onwards. These waterways combine the functions of irrigation and transport. Over the centuries more and more such canals are constructed. Finally, in the Sui dynasty (7th century AD), vast armies of laborers are marshaled for the task of joining many existing waterways into the famous Grand Canal. Barges can now travels all the way from the Yangtze to the Yellow River, and then on up the Wei to the western capital at Xi'an.

From the 13th century there is a new northern capital. Kublai Khan establishes himself at Beijing, which becomes the capital of the Mongol or Yüan dynasty. The Mongols extend the Grand Canal all the way north to join Beijing's river at T'ien-ching.

Junks and Caravels: 12th – 15th Century Ad

In both east and west the centuries known in Europe as the late Middle Ages and early Renaissance, see vast improvements in long-distance travel by sea. China is the pioneer. While Europeans are making ocean journeys in long narrow ships with a single square sail, the Chinese are improving the design of the junk.

From the 12th century junks grow in size, strengthened now by bulkheads. Soon they are steered and stabilized by an important innovation, the sternpost rudder. And they begin to be powered by sails on multiple masts.

The Portuguese successes depend, like the Chinese, on improvements in the design and construction of ships. The caravel is much smaller than the junk,

but it is better suited to sailing in violent oceans. With the caravel, travel becomes possible to any coast in the world other than the frozen Arctic and Antarctic. A caravel takes Magellan's crew on the first circumnavigation of the globe in 1519-1922.

Inca Roads: 15th Century AD

The Inca roads, the arteries of an empire, amount in all to more than 14,000 miles. Neither they are paved in the way of Roman roads, nor much flattened. Hence, this empire contains no wheeled vehicle or any horses.

The Incas rule over massively varied land, made up of large areas of jungle, desert and rugged highlands. Their roads are in fact paths, kept clear in these difficult conditions. Suspension bridges span small ravine (narrow valley), enabling runners to hurry unimpeded with a message - or caravans of llamas to make slower but steady progress with bales of raw materials and precious fabrics.

European Canals: 12th - 17th Century AD

In one area of Europe, the Netherlands, canal building is an integral part of economic development. The primary purpose is drainage; an efficient transport network is a welcome bonus. But in Italy, in the late 12th century, an ambitious canal is constructed without any subsidiary motive of drainage or even irrigation. The potential of canals is self-evident. It falls to Britain, in the next century, to construct the first integrated system of waterborne traffic.

Carriages: 17th Century AD

Throughout the Middle Ages, when Europe's roads are little more than tracks, wheeled vehicles are used only for the laborious process of carting goods from place to place. When going on a journey, the able-bodied ride; the infirm are carried in a litter.

These changes in the 17th century, when there is some improvement in the paving of roads. Carriages are available for hire in the streets of London from 1605. By the second half of the century there are traffic jams. Samuel Pepys,

conscious of rising in the world, considers it embarrassing in 1667 to be seen in London in a common hackney carriage, which anyone can hire. The next year he happily acquires a coach and a liveried coachman of his own.

Bridgewater Canal: AD 1759-1761

In 1759 a young self-taught engineer, James Brindley, is invited to visit the duke of Bridgewater. The duke is interested in improving the market for the coal from a local mine, which he owns. He believes his coal will find customers if he can get it more cheaply into Manchester. He wants Brindley to build him a canal with a series of locks to get barges down to the river Irwell, about three miles from the mine.

Brindley proposes a much bolder scheme, declared by some to be impossible but accepted by the duke. He will construct a more level canal, with less need for time-wasting locks. He will carry it on an aqueduct over the Irwell on a straight line to the heart of Manchester, ten miles away.

The Bridgewater canal is the first in Britain to run its entire length independently of any river. It is the start of the country's inland waterway system, for which Brindley himself will construct another 300 miles of canals.

Tracks and Trails: AD 1775

In 1775 the first major effort is made by British colonists to build a road west through the Appalachians, so as to enable settlement of the land won from France (but not from its Indian inhabitants) in the French and Indian War. Until this time the only way of traveling in the interior of the continent is either along rivers or on the narrow trails used by the Indians. These are adequate for horsemen and fur-trappers, but not for the wagons required if a settlement is to have a chance of becoming permanent.

The Wilderness Road is the first example of American settlers blazing a trail (a blaze being a mark cut in the bark of a tree to show the way). The Sante Fe Trail and the Oregon Trail will be famous 19th-century examples but, they are preceded by the National Road.

The Balloon - Hot Air: AD 1783

Although hydrogen has been isolated by Cavendish in the 1760s, and shown to be fourteen times lighter than air, it is not until the early 1780s that Europe's inventors are suddenly gripped with a feverish interest in using the concept to achieve a form of flight. In 1781-2 scientists in both England and Switzerland fill soap bubbles with hydrogen and see them rise rapidly to the ceiling, but similar experiments with animal bladders prove disappointing.

Full-fledged balloons were ready and required four hands to stoke the fire with bundles of straw. Pilâtre is joined by a fellow passenger, the marquis d'Arlandes.

The Balloon - Hydrogen: AD 1783

Just as the hydrogen balloon is behind the hot-air version in the first ascent of any kind, so it is in the first manned ascent - but only by a very small margin. On December 1, ten days after the achievement of Pilâtre de Rozier, Charles and a colleague rise into the air from the circular pond in front of the Tuileries. After a trouble-free journey of more than two hours, the aeronauts land about twenty-seven miles from Paris.

The hydrogen balloon soon prevails over the hot-air variety, because of its greater sophistication in an age when heat depends on burning bales of straw. Magnificent feats are achieved, beginning with a flight in 1785 across the English Channel by Jean Pierre Blanchard and an American doctor, John Jeffries. They throw out every loose item in the gondola, including their own clothes, to stay aloft long enough to arrive naked in France.

Though these adventures are impressive, the basic problem remains that there is no way of guiding a balloon.

Mail Coach: AD 1784 - 1797

The first mail coach runs from Bristol to London in 1784. It is so successful that by the autumn of the following year Palmer has launched services to sixteen other towns including Liverpool, Manchester, Leeds, Norwich, Dover,

Portsmouth, Hereford, Swansea and Holyhead. Edinburgh is added in 1786. By 1797 there are forty-two routes in operation.

The Roads of Telford and Mc Adam: AD 1803-1815

In Britain, with the introduction of the mail coach in 1784, Improvement in the speed of coaches has been seen and is accompanied by similar advances in road technology. Travel in horse-drawn vehicles becomes increasingly sophisticated during a period of about fifty years, until the success of the railways, results once again in roads being neglected. The early decades of the 19th century are the great days of coaching, commemorated in many paintings and prints.

When tar is added to bind the top layer, later in the 19th century, the result is the tar macadam road - and eventually the trade name 'tarmac'.

The National Road: AD 1811-1852

The settlement of the Ohio valley, and the admission of Ohio to the Union in 1803, prompts the construction of the USA's first great federal road project. In 1802 the government undertakes to link the Ohio valley with the Atlantic. Construction begins in 1811 at Cumberland in Maryland, which is already reached by a state road from Baltimore.

Built with a compacted stone surface, to the new standards pioneered in Britain by Mc Adam, the National Road has an immediate effect on the economy of the frontier regions.

When the road reaches Wheeling transportation times betweens the Ohio River and the eastern seaboard are halve, Grain, hemp and wool from the west, now easily rich to the eastern states where they find a ready market.

Transport in the 19th Century

In the mid 19th century travel was revolutionized by railways. They made travel much faster and also removed the danger of highwaymen. The Stockton and Darlington railway opened in 1825. However the first major

railway was opened in 1930 from Liverpool to Manchester. In the 1840s there was a huge boom in building railways and most towns in Britain were connected. In the late 19th century many branch lines were built connecting many villages.

The first underground railway in Britain was built in London in 1863. Steam locomotives pulled the carriages. The first electric underground trains began running in London in 1890.

From 1829 horse drawn omnibuses began running in London. They soon followed in other towns. In the 1860s and 1870s horse drawn trams began running in many towns.

Karl Benz and Gottlieb Daimler made the first cars in 1885 and 1986.

Meanwhile at sea travel was revolutionized by the steam ship. By 1815 steamships were crossing the English Channel. Furthermore it used to take several weeks to cross the Atlantic. Then in 1838 a steam ship called the Sirius made the journey in 19 days. However steam did not completely replace sail until 1897 when Charles Parsons invented the steam turbine.

Transport in the 20th Century

Although the first cars appeared at the end of the 19th century, after the First World War they became cheaper and more common. However in 1940 only about one in 10 families owned a car. They increased in number after World War II. By 1959 32% of households owned a car. Yet cars only became really common in the 1960s. By the 1970s the majority of families owned one.

In 1903 a speed limit of 20 MPH was introduced. It was abolished in 1930. However in 1934 a speed limit of 30 MPH in built-up areas was introduced. Meanwhile in 1926 the first traffic lights were installed in London. A driving test was introduced in 1934. Also in 1934 Percy Shaw invented the cat's eye.

The parking meter was invented by Carlton Magee. The first one was installed in the USA in 1935. In 1983 wearing a seat belt was made compulsory.

Meanwhile in 1936 Belisha Beacons were introduced to make road crossing safer. The first zebra crossing was introduced in 1951.

In 1931 an American called Rolla N. Harger invented the first breathalyser. It was first used in Indianapolis USA in 1939.

A Swede named Nils Bohlin developed the three-point seat belt in 1959.

Meanwhile in the late 19th century horse drawn trams ran in many towns. At the beginning of the 20th century they were electrified. However in most towns trams were phased out in the 1930s. They gave way to buses, either motorbuses or trolley buses, which ran on overhead wires. The trolleybuses, in turn were phased out in the 1950s. Ironically at the end of the 20th century some cities re-introduced light railways.

In the mid-20th century there was a large network of branch railways. However in 1963 a minister called Dr. Beeching closed many of them.

The first hovercraft was launched in 1959. The first hovercraft passenger service began in 1962.

In 1919 aeroplanes began carrying passengers between London and Paris. Jet passenger aircraft were introduced in 1949.

However in the early 20th century flight was a luxury few people could afford. Furthermore only a small minority could afford foreign travel. Foreign holidays only became common in the 1960s.

The Boeing 747, the first 'Jumbo jet' was introduced in 1970.

The Channel Tunnel opened in 1994.

Table 2.1

Timeline of Transportation Technology

Before 18th Century	
Year	**Particulars**
3500 BC	Wheeled cars are invented
3500 BC	River boats are invented
1200 BC	Horses are tamed and used for transport
1662	Pascal invents a horse-drawn public bus which has a regular route, schedule and fare system
1672	Ferdinand Verbiest built what may have been the first steam powered car
18th Century	
1740	Jacques he Vaucanson debuted his clockwork powered carriage
1769	Nicolas-Joseph Cugnot demonstrates his “steam weagon”, an early functional automobile
1783	Joshef Montgolfier and Etienne Montgolfier launch the first hot air balloons
1784	William Murdoch built a working model of a steam carriage in Redruth, England
19th Century	
1801	Richard Trevithick ran a full sized steam wagon on the road in Camborne, England
1803	Richard Trevithick built his 10-seater London steam carriage

Year	Particulars
1804	Richard Trevithick built a prototype steam powered railroad locomotive. Oliver Evans demonstrated a steam
1807	Issac de Rivas made a hydrogen gas powered vehicle
1814	George Stephenson built the first practical steam powered railroad locomotive
1816	The most likely originator of the bicycle is German Baron Karl von Drais, who road his 1816 machine while
1853	Sir George Cayley built and demonstrated the first heavier-then-air aircraft (a glider)
1862	Jean Lenoir made a gasoline-engine automobile
1868	George Westinghouse invented the compressed Air brake (rail) for railway trains.
20th Century	
1900	Ferdinand von Zeppelin builds the first successful airship
1903	Orville Wright and Wilbur Wright fly the first motor-driven airplane
1903	Small Diesel engine tested in a canal Boat by Rudolph Diesel, Aderin Bochet and Frederic Dyckhoff
1908	Henry Ford develops the assembly line method of automobile manufacturing
1911	Selandia launched, the first oceangoing, diesel engine driven ship
1926	Robert Goddard launches the first liquid-fluded rocket
1942	V2 rocket covers a distance of 200 km
1947	First supersonic flight

Year	Particular
1957	Sputnic 1, the first man-made satelolite to be launched into orbit
1961	Vostok 1, the first manned space mission, made 2 orbits around the earth.
1969	First manned Moon landing
1976	Concorde made the world's first commercial passenger supersonic flight
1981	First flight of the space shuttle
21st Century	
2003	Concorde made the world's last passenger carrying supersonic flight
2004	Space Ship One first commercial manned space flight.

2.3 ROAD TRANSPORT IN INDIA

Roadways in India have come a long way. Starting from the pug dandies (a small path created naturally due to frequent walks) of earlier times to the present-day Rajpath of Delhi, the country has crossed many spheres of road travel. The 'thread that binds the nation together' is truly a deserving metaphor for a road network that is one of the largest in the world. Its grand system of national highways, state highways and the roads that run endlessly within cities are marvelous.

India has its well-connected transport network since the time people started keeping records. The great Indian epics the Ramayana and the Mahabharata mention chariots and carts embellished with various gems and precious metals. The Pushpak Vimana or the bejeweled chariot, which was in Lanka, the kingdom of Ravana, is described in detail in the Ramayana. Horses, asses, and mules were used to draw these carts.

Some 2,500-10,000 years ago, our ancestors traveled through woods on hunting sprees and left traces of their mud tracks known as pug dandies, the most ancient trace of roads. Harappan and Mohenjodaro civilization, which dates back circa fourth millennium BC, provides ample understanding of roads.

In the Atharva Veda, we find references to road construction and information on precautions to be taken. There is mention in Kautilya's Arthasashtra about mechanism of roads for chariots and stresses upon the traffic rules and road safety. From the 6th century to 4th century BC, there was development of small independent states in several parts of India. With the development of culture and trade, cities like Vaishali, Sravasti, Rajagriha, Kurukshetra, and Ujjaini had roads to facilitate socio-economic intermingling. Ujjaini, capital of Avanti, was an important trade center and connected with northern trunk routes to modern Bharuch, an important seaport.

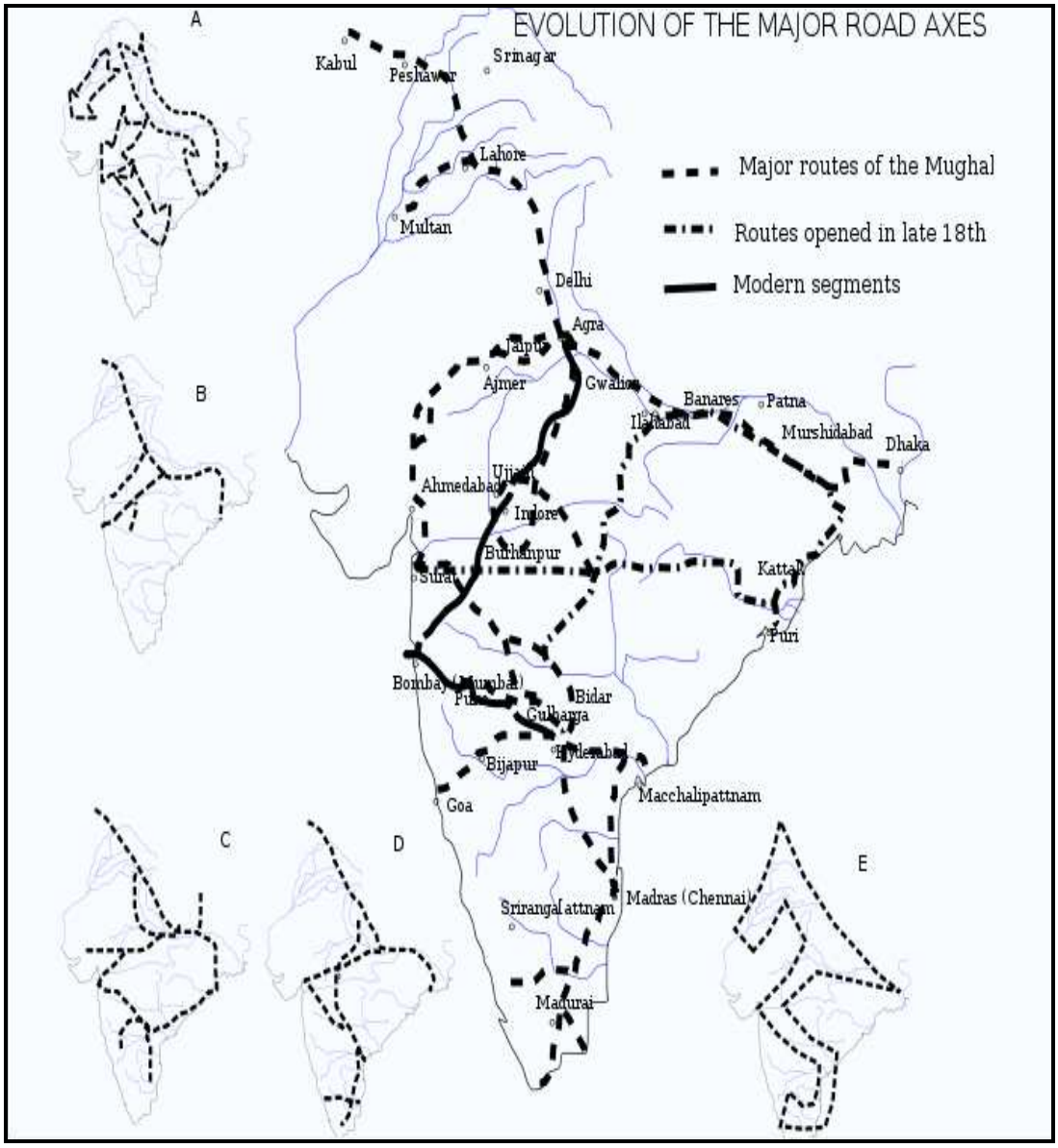
Development of roads took a new turn during Mauryan rule in the 4th century. The administration constructed Rajpath (high roads) and Banikpaths (merchant roads).

This tradition continued and Chandragupta's grandson, Ashoka, who was a great and compassionate ruler, strengthened the system immensely. In Mauryan day's, roads played a key role in military operations to keep the vast country united.

Records reveal that during the Gupta era there was also a road connection with South India. There were three major routes-one was a connection with Northeast India via Didisa, the other connected to the seaport of the Western coast and the third connected to Pratisthana, the capital of Satvahana Empire. There are also evidences of a route facilitating trade with Iran and China.

The Mughal era was the golden era for roads as the whole of India was effectively connected to control the vast empire. With the advent of the British, a new awakening dawned upon India. The East India Company revived ancient routes and renovation was initiated. The technology of the West came into play and linkages were well established which provided the British the inroad to rule India for over two hundred years. Thus, one can see that since ancient times roads were stressed upon.

History



Evolution of Indian road network, the main map shows the routes since the Mughal times; Inset A shows the major cultural currents of the prehistorical period, B shows pre Mauryan Indian routes, C shows the Mauryan network, D shows the trade routes at the beginning of the Cristian era, and E shows the Indian 'Z'.

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[5] Sorce: Road Network in India

Historical Background of Road Transport Initiated by Govt. or Ruler

The scheme of nationalization of passenger transport services was started as early as in 1932 by the then Nizam government in Hyderabad. The Marathwada State Transport, with headquarters at Aurangabad, came into existence as a result of the trifurcation of the erstwhile Hyderabad State, which was one of the pioneers in the field of public road transport, first in collaboration with the railways and then as a separate government department. After the reorganization of States in November 1956, the operations in Marathwada were looked after by a separate department under the erstwhile Government of Bombay, called the "Transfer red Road Transport Undertakings Department". With effect from 1st July 1961, the T. R. T. U. Department was abolished and the Marathwada State Transport, along with the State Transport Services in the Vidarbha region, was amalgamated with the Bombay State Road Transport Corporation and the reorganized corporation was named as Maharashtra State Road Transport Corporation.

Road transport in India has a large and extensive transportation system. The country has one of the world's largest railway and roadway transporting millions of people every year. However, vast sections of the country’s transportation network remain underdeveloped.

The beginning of public transport in India:

Mechanized Road Transport in India really started with the commencement of the present century. The first motor vehicle was imported here in 1898. In the early years of this century, motor vehicles were few and their use and operation was governed by the then provincial enactments which were concerned with registration only.

Motor Vehicles Act, 1914 and growth of passenger transport: The (Indian) Motor Vehicle Act, 1914 was the first all India enactment dealing with control over operation of motor vehicles. Phenomenal growth of road

transport began in the early 1920's as result of the diversion of surplus army vehicles to civilian market after World War I. this also led to unhealthy competition and even a war of route cutting amongst operators. The motor Vehicle Act, 1914 had therefore to be supplemented in post war years by provincial act in order to introduce some measures for regulation and control. In the late 1920's the problem of unhealthy competition become still more acute and shrinkage pf traffic, accentuated by the world wide depreciation (and India was no exception), brought forth the need for regulation of this industry.

History and Development of State Road Transport Corporations in India

Passenger transport services were regulated by the District level police authorities, prior to the coming in to force of the Motor Vehicles Act, 1939, by issue of permits, known as free permits, enabling bus operators to ply their vehicles in different directions in the District in a day wherever passenger roads were available.

This situation led to severe competition among owners leading to unruly scenes and untoward incidents. With the passing of the Motor Vehicles Act, 1939, passenger transport was sought to be controlled and regulated by various provisions of the Act and the rules made there under. Routes and areas were identified.

Permits were granted by the Regional Transport Authorities, imposing many conditions, the breach of which will entail penalties and even cancellation of permit.

During this period of 1952, the Fuel (Petrol) was in short supply and to be rationed. To obviate the difficulty, gas plant was invented by indigenous expertise - by M/s Simpson and Co. and T.V.Sundaram Iyengar and Sons. It was used as motive power.

With the ushering in of diesel engines in India, in the early 50's passenger

transport scene acquired a new dimension, with heavy vehicles of larger capacity coupled with permitted higher level of speed crisis crossing the Country.

Motor Vehicles Act, 1939 and growth of passenger transport

On the basis of recommendations of the early Wedge Wood Committee Report in 1937, a comprehensive Motor Vehicle Act, 1939 was formulated to ensure the growth of road transport on the basis of healthy competition within the industry itself and with the Railways.

Corporate bodies and a few individuals were able to offer reliable, punctual and economical services in their area of operation. In the context of political awareness, Government issued guidelines to Transport Authorities to grant permits to new entrants and small operators. This has been vehemently resisted by the existing operators having recourse to the provisions of the Motor Vehicles Act, 1939. In the result it was found that the Act was restrictive in nature impeding growth of bus services and its expansion was not equal with the measure of demand for the service.

Nationalization

As the existing services were found inadequate and few of them ill organized, Government considered nationalization of bus transport services as a means to ensure efficient, economical, adequate and properly co-ordinated services.

With these objectives in view, the Road Transport Corporation Act was passed in 1950.

In a number of major states of the Indian Union most of the stage carriage operations is in the public sector. With the growing requirement of Passenger Road Transport Services and the inability of the State owned Corporation to fulfill the need adequately, satisfactorily and economically, even after the lapse of 25 years after inception, a reassessment as to whether the policy of nationalization will meet the needs of the people, was necessitated.

Road Transport Corporation Act, 1950

"The Road Transport Corporation Act, 1948(XXXII of 1948), was enacted with a view to enable the Provincial Governments, who may so desire, to establish Road Transport Corporation. This Act has been found defective because the provisions of sections 3(2), 4 and 5 of the Act, insofar as they require certain provisions to be made by a Provincial law, are ultra virus of the Government of India Act1935, as adapted. Under the latter Act, the power to legislate in respect of trade and commerce is given to the provincial Legislature and the power to legislate for the incorporation of trading corporations is given to the Central legislature.

The creation of statutory transport corporations has been held as amounting to incorporation of trading corporations and such, ultra virus of the Provincial Legislature. In order to remove the above mentioned legal flaw, it is proposed to replace the existing Act, by a comprehensive Act, enabling such of the Provincial Government, who may so desire, to set up Transport Corporation, with the object of providing efficient, adequate, economical and properly coordinated system to road transport services." – Gaz. Of India, 1949. Pt. V.P. 559

Amending Act 63 of 1982

The Road Transport Corporation Act, 1950 was enacted to enable State Governments to set up Transport Corporations with the object of providing efficient, adequate, economical and properly co-coordinated system of road transport services. In the light of the changed circumstances, the suggestions that have been received from the State Governments, different Ministries of the Central Government and other agencies concerned, it is proposed to make certain amendment in the said Act with a view primarily to secure the better functioning of the Road Transport Corporation under the Act. The Act has been brought into force in the States mentioned below with effect from the dates noted against them:

Table 2.2

Commencement of State Road Transportation in State/Union Territories

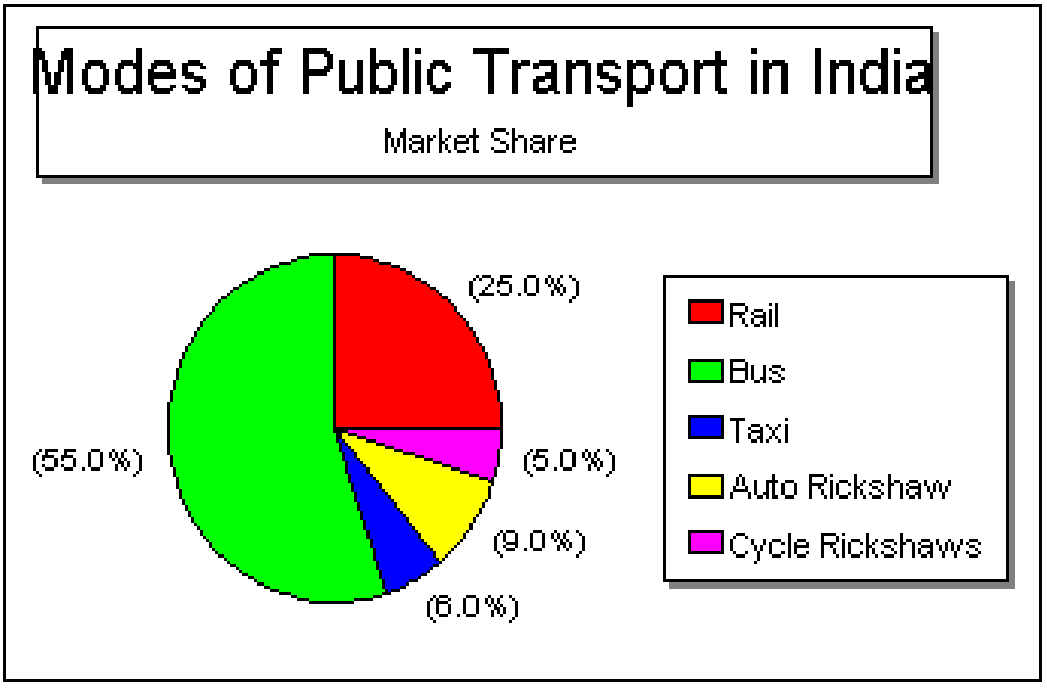
SR. NO.	STATE /UNION TERRITORY	DATE OF COMMENCEMENT
1	Bombay (Gujarat and Maharashtra)	06-12-1950
2	Bihar	01-09-1952
3	West Bengal	02-03-1953
4	Punjab (Haryana & Chandigarh)	10-08-1954
5	Orissa	01-06-1956
6	Andhra Pradesh	01-12-1957
7	Himachal Pradesh	28-03-1958
8	Mysore	01-08-1958
9	Tripura	01-03-1961
10	Madhaya Pradesh	01-04-1961
11	Rajasthan	05-09-1964
12	Kerala	01-01-1965
13	Assam	10-03-1970
14	Delhi	03-11-1971
15	Uttar Pradesh	01-04-1972
16	Jammu and Kashmir	01-04-1976

Today, India has a huge network of roads comprising of National Highways. India has a large and extensive transportation system. The country has one of the world's largest railway and roadway networks, transporting millions of people every year. However, vast sections of the country's transportation network remain underdeveloped. Highways, Major District Roads and Village and other roads .In fact, it is the third largest road network in the world covering a total length of 33, 00,000 km.

In India, where only 250,000 cars were sold in 1996, the vast majority of the urban population depends on public transport. Buses account for a majority of all passenger trips, and trains for a quarter. Taxis and rickshaws take a fifth of all passengers, providing employment and relieving the severely overcrowded buses and trains. See the following figure:[6]

Chart 2.1

Relative Share of Different Modes of Public Transport in India



[6] Source: Farokh Umrigar, Prabeer Sikdar, and Sudarshan Khanna. PRTC Education and Research Services, Urban Transport in Developing Countries.

Table 2.3

Operations of Road Transport in India from the Year 1950 To 2004

No.	Particular/Year	1950-51	1960-61	1970-71	1980-81	1990-91	1995-96	1999-00	2000-01	2002-03	2003-04*
1	**Length of roads** (Thousand km)**										
	Total	400.0	524.5	915.0	1485.4	1998.2	2302.5	2416.1	2446.7	N.A.	N.A.
	Surfaced	157.0	263.0	398.0	684.0	1024.4	1263.4	1390.6	1414.6	N.A.	N.A.
2	**Length of national highways (Thousand km)**										
	Total	22.2	23.8	24.0	31.7	33.7	34.5	52.0	57.7	58.1	65.6
	Surfaced	19.8	21.0	23.3	31.5	33.4	34.3	52.0	57.7	58.0	N.A.
3	**Length of state highways (Thousand km)**										
	Total	N.A.	N.A.	56.8	94.4	127.3	135.2	132.8	132.1	N.A.	N.A.
	Surfaced	N.A.	N.A.	51.7	90.2	124.8	132.9	130.6	129.9	N.A.	N.A.
4	**Number of registered vehicles (Thousand)**										
	All vehicles	306.0	665.0	1865.0	5391.0	21374.0	33786.0	48857.8	54991.0	67007.0	72718.0
	Goods vehicles	82.0	168.0	343.0	554.0	1356.0	2031.0	2715.0	2948.0	3492.0	3748.0
	Buses	34.0	57.0	94.0	162.0	331.0	449.0	562.0***	634.0	721.0	768.0
5	**Revenue from road transport (Rs. Crore)**										
	Central	34.8	111.7	451.8	930.9	4596.0	8032.7	20952.5	23861.0	31132.4	35133.8
	States	12.6	55.2	231.4	750.4	3035.2	5834.0	12980.6	12901.7	17116.3	19295.6

* Provisional
** Excluding around 9 lakhs km of Rural Roads reported under JRY as on 31.3.1996.
***Includes omni buses.
N.A.: Not Available.
Source: Computed from the annual reports and accounts of the GSRTC, Ahmedabad

2.4 GUJARAT STATE ROAD TRANSPORT CORPORATION

Introduction

The history of passenger transport in the Vidarbha region dates back to the year 1942 when M/s. Mechanical Transport Ltd. started transport of passengers. This company sponsored the Nagpur Omnibus Company in 1945 under its managing agency. In the subsequent years the name of the company was changed to the Provincial Transport Company Ltd. and M/s. Mechanical Transport continued to be the managing agent. However the Government assumed the managing agency rights of the M/s. Mechanical Transport and reorganized the Hoard of Directors. Up to 1955 the company functioned as a joint-stock company when the Government brought the same under its control and named it as "the Provincial Transport Services". In order to co-ordinate the activities of the three organizations viz., the Bombay State Road "Transport Corporation, the Marathwada State Transport and the Provincial Transport Services were merged in 1961, into a single corporation *viz* the Maharashtra State Road Transport Corporation, Bombay.

For administrative convenience of operating the services the erstwhile Bombay State was originally divided into 16 viable units called divisions. After the Reorganization of the States in 1956, three units were transferred to Mysore State leaving 13 divisions. With the bifurcation of the bilingual Bombay State on May 1, I960, five northern divisions were transferred to the Gujarat State leaving 8 divisions in the residual corporation in Maharashtra.

The Evolution of Gujarat State Road Transport Corporation

At the time of evolution of Gujarat State Road Transport Corporation, private buses were providing transportation services to the public. The arrival and departure time for such buses was not fixed. They would start when they would be full. In addition, the route followed by the private bus service vendor was just the main route between two stations. Hence, those people who wanted to reach to the rural areas, the bus service available then was not

ample. Due to lack of competition, the quality of service was quite poor. The seating arrangement was on the wooden seats, and letter on coir (string or rope made of coconut fibers).

The Road Transport Corporation Act, 1950 was initially brought into force in Bombay (Gujarat and Maharashtra) on 6th December 1950. After the separation of Gujarat state and the Maharashtra state, Gujarat State Road Transport Corporation was brought into effect for the area of Gujarat state.

Gujarat State Road Transport Corporation (GSRTC) is a passenger transport corporation, providing bus services / public transits in Gujarat and neighborhood states of Rajasthan, Madhya Pradesh and Maharashtra. It also runs buses to the Union Territories of Daman & Diu. When it came into existence on 1st May 1960, it had 7 divisions, 76 depots and 7 divisional workshops and a fleet of 1767 buses.

The objective of GSRTC is **"One village one bus."** Over last 40 years of its existence, it has proved to be a dependable mode of transportation in every nook and corner of the state. It provides services in almost all the areas of the state including rural areas. The corporation has completed 100% nationalization of passenger road transport services in Gujarat state since November 1969. It has covered up around 95.93% of villages and 99.33 % of population. It transports around 8502 lakhs (as on 31st March 2008) passengers daily by traveling over 318287 lakhs K.M. per day. Gujarat State Road Transport Corporation has played a pivotal role in the economic growth of the state by operating an extensive passenger transport network and reaching out to villages. Over last 40 years of its existence it has grown up into a huge organization, consisting 16 divisions, 132 depots, 7 tire retreading plants. It is now Asia's biggest central workshop. It provides direct employment to approximately 44557 (as on 31st March 2008) people in the state.

Table 2.4

Divisions, Depots, and Schedules of GSRTC as on 31/03/2006

Sr.No.	Division	Date of Establishment	Depots in the Division	Schedules of the Division
1	Palanpur	27/11/1975	7	568
2	Mahesana	01/08/1954	11	648
3	Himatnagar	01/04/1967	10	564
4	Ahmedabad	01/03/1949	10	537
5	Nadiad	15/03/1945	12	706
6	Vadodara	01/10/1953	9	427
7	Godhara	01/11/1973	7	401
8	Bharuch	26/02/1989	5	241
9	Surat	01/02/1953	6	445
10	Valsad	01/10/1973	6	394
11	Rajkot	01/04/1956	9	466
12	Jamnagar	01/02/1997	5	205
13	Bhavnagar	01/11/1964	8	285
14	Amreli	10/10/1976	7	316
15	Junagadh	01/09/1962	9	473
16	Bhuj	01/12/1954	8	216
TOTAL			**129**	**6892**

Source: Annual Reports of GSRTC, Ahmedabad

ROADNETWORK IN GUJARAT

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[7] Mapsofindia.doc

Table 2.5

Growth of Passenger Road Transport in Gujarat

Year	No. of Schs. Operated as on last day of March	Index	No. of Vehicles as on last day of March	Index	No. of Pass. (in lacs)	Index	Pass.kms. Travelled by GSRTC buses (in lacs)	Index
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
1960-61	1334	100.00	1797	100.00	1517.14	100.00	22338	100.00
1970-71	3157	236.66	4057	225.77	5064.66	333.83	87738	392.77
1980-81	5074	380.36	6678	371.62	13344.65	879.59	254252	1138.20
1990-91	6770	507.49	8244	458.76	13123.73	865.03	316369	1416.28
2000-01	8473	635.16	10048	559.15	13134.81	865.76	370867	1660.25
2001-02	6777	508.80	9531	530.38	11885.33	783.40	327929	1468.03
2002-03	7835	587.73	9209	512.46	11235.11	740.45	310319	1389.20
2003-04	7422	556.37	8820	490.82	9966.91	656.95	293364	1313.30
2004-05	6898	517.09	8164	454.31	8341.54	549.82	272604	1222.36
2005-06	6892	516.64	8277	460.60	7897.56	520.56	265439	1054.56
Compound rate of increase per year (in %)		3.81		3.53		3.82		5.5

Source: Annual Reports and Accounts of GSRTC, Ahmedabad

Profile of Gujarat State Road Transport Corporation

The GSRTC was awarded PCRA (Diesel Conservation) Trophy for the highest diesel K.M.P.L. achievement amongst STUs of the Country since last 21 consecutive years from 1981-82. The corporation grants concession in bus fares to students, competitors participating in sports, tournaments sponsored by the Government. It provides a variety of services as described below.

Mofussil Services: Connecting major cities, smaller towns and villages within Gujarat.

Intercity bus services: Connecting major cities - Ahmedabad, Vadodara (Baroda) and Rajkot.

Interstate bus services: Connecting various cities of Gujarat to the neighbouring states of Madhya Pradesh, Maharashtra and Rajasthan.

City services: Provides city bus services at Surat, Baroda, Rajkot, Gandhinagar-Ahmedabad within the state of Gujarat.

Parcel Services: For transporting goods.

Over and above these bus route services GSRTC also provides special bus route services for Festivals, Industrial zones, schools and colleges, pilgrim places. GSRTC buses are available to the public through contractual agreements special occasions. GSRTC also offers educational trips to the students. Bus service also has the **"Raise your hand and take a ride"** facility for so many routes