The interest of the geographer in transport and communications is no less than that of the economist. For the geographer, means of communication are the arteries of the cultural landscape; they influence the growth of settlements and man's economic activities. The significance of communications in a study of agricultural economy may not be readily apparent but they are very important for agriculture as for manufacturing. In fact, the Royal Commission laid great stress on the improvement of communications as a factor in rural progress, for "good communications and efficient marketing arrangements enable produce to be moved cheaply and quickly to places where the demand for it is active...."

In the area under study, roads and railways are equally important. These roads and railways have played a big part in the economic development of Central Gujarat, not only for the movement of agricultural produce but also for forest produce in which the area is richly endowed by Nature.

RAILWAYS

Central Gujarat is well served by railways. Out of 21 talukas and two mahals of the area, 19 talukas are served either by the Broad Gauge or the Narrow Gauge railways. Tilakwada, Jambughoda, Santrampur, and Jhalod have no railway facilities. There are 123 places in the area which have railway station of which 25 are on the Broad Gauge and 98 are on the Narrow Gauge lines. (Fig. 65).
There are eleven lines running through this area and they are:

I. BROAD GAUGE:
(a) Main Lines
   i) Bombay- Delhi
   ii) Bombay- Ahmedabad (this line bifurcates at Baroda)

(b) Branch Line
   i) Godhra- Ahmedabad

II. NARROW GAUGE:
   i) Jambusar- Chhota Udepur
   ii) Chandod- Timba Road
   iii) Chandod - Moti Karol Via Choranda Junction
   iv) Chandod- Malsar Via Choranda Junction
   v) Chhuchhapur- Tankhala
   vi) Champaner- Pani Mines
   vii) Godhra- Lunawada
   viii) Piplod- Devgadh Baria

The total length of the railway lines in the two districts is 488.83 miles (784 km) and this works out to 1 mile of railway line for every 13 square miles of land.
I- BROAD GAUGE

(a) The Main Lines:

These two main lines are (i) Bombay-Delhi and (ii) Bombay-Ahmedabad which are the most important of the lines mentioned above. The Bombay-Delhi line was opened in 1867. Prior to this the district had no railway communications at all. In 1870, the Baroda City was connected with Bombay by the (then), B.B. & C.I. Railway. The entire line is now operated by the Western Railway. Baroda is thus directly connected with the two largest cities of India; this is a vital point to be remembered in any appraisal of the trade and transport of the district.

(i) The Main Line (Bombay-Delhi) runs right through the Baroda and Panchmahals district, approximately northeast to southwest, from Anas station in the extreme northeast to Palej station in the southwest. The line passes entirely through Panchmahals and Baroda districts, taking advantages of the lowlands of the Narmada and the tributaries of the Mahi. The gradient of this line is low, being not more than ten feet per mile between Baroda and Godhra; eastwards of Godhra, the land is more undulating and the gradient is several feet per mile. After passing through the railway town of Dohad.

1. Pratapnagar (Baroda) is a Divisional Headquarters of this Railway.
2. Dohad (Do-Had) i.e., two boundaries has a big LOCO WORKSHOP.
the line enters into the boundary of Rajasthan and M.P. and connects Ratlam and other four running stations. There are five important stations on this line. The length of this line within the district is about 107 miles (173 km).

The goods carried along this line include mainly food grains, forest products and minerals. Among food grains, wheat and rice are brought into the districts of Gujarat either from M.P. or Punjab through this main line. Cotton, groundnut, oil pulse etc., are transported beyond the two districts, to as far as Delhi, Hathras, Ratlam, Ujjain, Bhopal and also to the South upto Madras and Beyond. Of the other agricultural crops, groundnut is the most important and is sent to the mills in Uttar Pradesh.

Bamboo, Charcoal, and other forest produce are collected from the various forests of the district and exported to the north and to the east.

This Bombay-Delhi line also brings into this district the local requirement of the people such as sugar and jaggery from the sugar mills of U.P. Punjab, M.P. and wheat from Punjab. Textile and other general goods come from Bombay and Delhi.

It is obvious then that this line is the most important line (within the area under study) and considerably influences the economic development of the Baroda and the Panchmahals districts. Some statistical figures


2. Information collected from the Railway Offices at Baroda and Godhra (1964).
could be given to indicate the importance of this line: Six trains (for passenger traffic) and seven goods trains move each way over this rail per day. More than half a million passengers pass through Baroda and Godhra in a year. In 1864, Baroda station handled about 1,46,000 tons of goods outward and 1,09,000 tons of goods inward; of these grains, oilseeds, timber, glassware, chemicals and military stores were the important items moving outward and sugar, food stuff, lime, cement and iron and steel were the important items moving inward. At Godhra, inward goods in that year totalled nearly 28,000 tons, cement alone was 16,300 tons and the remaining chiefly consisted of coal, kerosene oil and petrol.

(ii) Bombay-Baroda-Ahmedabad Broad Gauge Line:

From Baroda, one broad-gauge line runs in northwest direction to Ahmedabad. This Baroda-Ahmedabad line (of the Western Railway), runs within the area concerned for about 8 miles (12 km) (i.e., upto Ranoli) and afterwards the line enters the Kaira district.

The Baroda-Ahmedabad line was constructed in 1899 by the B.B. & C.I. Railway. This line brought Ahmedabad City nearer to Baroda.

The Baroda-Ahmedabad line is one of the chief lines for coal and kerosene oil to northern Gujarat. Seven goods trains move either way between Baroda and Ahmedabad per day. These usually carry coal from the eastern coal fields of India to the industrial centres in the west; and run empty in the opposite direction. Other articles of importance, moving along this line, include food grains, charcoal and raw-cotton.
This line is also important for passenger traffic, for this connects the Main Line with the Bombay-Ahmedabad-line. Nine passenger services operate each way on the Bombay Ahmedabad route.

(b) **Branch Line:**

The Godhra-Ahmedabad branch line is a broad-gauge line and does not touch the Baroda district at all and goes towards west of Godhra and joins the Main Bombay-Baroda-Ahmadabad line at Anand.

This branch line was constructed in 1905 as a branch of the B.B.& C.I. Railway mainly to tap the forest resources of the Panchmahals district. Only a small length (i.e., 15 miles or 23 km) of this line passes through the Panchmahals district. Tuwa and Timba Road Junction, are the important stations on this line. Timba Road junction has now grown into a large railway settlement and also the Junction of a Narrow Gauge Line which starts from here south to meet Dabhoi—the biggest junction of the Narrow Gauge Lines.

Four passenger services operate each way along this line per day.

**II- NARROW GAUGE:**

**Jambusar-Chhota Udepur:**

The construction of this Railway Line was started in 1879 and was completed in 1917. It has a total length of about 95 miles (151 km). This line runs right through the Baroda District and joins east and western parts from Chhota Udepur to Masar Road for distance of about 89 miles (139 km).

There are 8 other important stations on the line. Namely: Mobha Road, Padra,
Vishwamitri Jn. Pratapnagar (Baroda on the Narrow Gauge), Dabhoi, Chhuchhapura and Bodeli.

This line runs through the Padra Kanham tract of the Baroda District and is, therefore, of considerable local importance. This rail line has helped to exploit the forest resources like timber, lac, bamboo, etc. of this district. The line is, thus, chiefly important for trade in forest produce. Several contractors have of late established large depots and set up saw-mills in Baroda and Sankheda.

Apart from timber, pulses and oilseeds are moved from Padra along the narrow-gauge track to Pratapnagar (another Railway station of Baroda on N.G.).

ROADS:

The map showing the distribution of roads (Fig. 65) indicates large vacant areas in the road net. The Districts of the Central Gujarat are very nicely served by metalled roads in comparison to certain other districts of State, like Surat, Broach, Ahmedabad etc., per square mile of land, the length of all types of roads is a little less than 0.25 miles for Central Gujarat; while, per lakh of population, the length varies from 63 miles for the Baroda district to 47 miles for Panchmahals district.
The distribution of roads shows two patterns radiating out from
(i) Baroda and (ii) Godhra.

BARODA:

There are 848.71 miles of roads in this district. The Road
Map clearly shows the dominating influence of Baroda City which is
well-connected with all the taluka headquarters of the district and
with the headquarters of the surrounding districts. The main roads
branching out from Baroda are as follows:

<table>
<thead>
<tr>
<th>Road</th>
<th>Via</th>
<th>Destination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baroda-Ahmedabad</td>
<td>Via</td>
<td>Ranoli</td>
</tr>
<tr>
<td>Baroda-Bombay</td>
<td>Via</td>
<td>Karjan</td>
</tr>
<tr>
<td>Baroda-Alirajpur</td>
<td>Via</td>
<td>Shrivrajpur and Chhota Udepur</td>
</tr>
<tr>
<td>Baroda-Godhra</td>
<td>Via</td>
<td>Halol</td>
</tr>
<tr>
<td>Baroda-Tajplia</td>
<td>Via</td>
<td>Dabhoi and Chandod</td>
</tr>
<tr>
<td>Baroda-Jambusar</td>
<td>Via</td>
<td>Padra &amp; Masar Road</td>
</tr>
</tbody>
</table>

Of these, the most important is the road to Ahmedabad. This is a
north and with Bombay in the south. This Great Trunk Road
National Highway, connecting Baroda with Ahmedabad in the runs nearly
parallel to the railway and like the latter, is the most important of
all the roads in the district. It is the most heavily traffic-ridden,
not only for passenger traffic but also for goods traffic. It is along
this road that important articles and commodities are received in Baroda.
The most important locally produced goods are, of course, from the farm.
Wheat, rice, gram, pulses etc. are moved in large quantities to the City,
to be consumed there and also to be re-exported outside. From outside the district, various articles move by this road and are imported from Bombay, Ahmedabad, Delhi etc. These articles include cloth, sugar, footwear, cycles, machinery, cars, yarn, cigarettes, medicines, tea, Dalda fruits etc. Baroda city has a big cloth market which is fed by continuous supplies from Bombay-Ahmedabad along this trunk road. Unlike many roads of Central Gujarat, this road has very few grades.

GODHRA:

Like Baroda, Godhra is also well-connected with various places by roads. Of these, the most important road for both passenger and commodity traffic is the Baroda-Godhra road. This is a vital link for Godhra town and for the district of Panchmahals also. It is by this road that the various daily requirements and essential commodities are brought into the district. Thus cloth, grocery, cotton, wool, kerosene oil, diesel oil, petrol, dalda, sugar, jaggery etc., are imported from Ahmedabad, Bombay and other places and routed through Baroda to Godhra by this road. In the opposite direction, grains, oilseeds and ghee which pour into Godhra town from the Countryside are exported and move along this road to Baroda and elsewhere. Many of the articles received

1. Information collected from the Octroi Posts, Baroda City.
2. Information collected from the Octroi Posts, Godhra.
distribution in the market villages. This road is also important for the in Godhra from outside are also sent inside the district for the transport of forest produce from Godhra to Baroda. Several contractors who have their depots both at Godhra and at Baroda avoid the inconvenience of rail transport and prefer to use their own trucks.

This all-weather state Highway road is about 80 miles long. Just before entering the Godhra district the road crosses the River Goma (a tributary of the River Mahi) over an all-weather bridge.

(iii) Northward from Dabhoi (apart from the Baroda road) is the new P.W.D. Class I road up to Prayagpur and from there one seasonal road goes to Kherwadi, Rustampur, Morkhala and Totar Mata. This road brings to Dabhoi cotton, rice, jowar, groundnuts etc., Kherwadi is also connected with Waghodia and Baroda on the west and Goraj in the north via Gogalpur. Kherwadi, a small village is a sort of bus-junction, as the Bus Frequency Map (Fig.66) clearly shows.

OTHER ROADS:

The following are the roads running from Baroda:

(i) Baroda-Alirajpur via Shivrajpur and Chhota Udepur. This connects Baroda with the taluka headquarter of Halol, Jambughoda, Jabugam and Chhota Udepur and passes through the eastern medium-black soil tract of Chhota Udepur taluka and then enters into the boundary of M.P. near Pherkui. The road passes beyond Chhota Udepur, crosses the River Organg over a High bridge and then goes straight and reaches Alirajpur. (M.P.)
(ii) Baroda-Rajpipla via Dabhoi Road: This road connects Baroda with Rajpipla. Uchad being the only important point on it from where the road takes a turn and reaches the right bank of Narmada. The passengers alone are ferried across to continue their journey. This road does not have a heavy traffic but brings in grains, fuel, timber, sandstone flags, cloth, ghee, charcoal etc. The importance of this road has increased because Rajpipla by road is nearer than the train route.

(iii) Baroda-Jambusar via Padra and Masar Road: From Baroda there runs a class I road, 60 miles (96 km.) upto Jambusar, passing through the taluka Headquarters of Padra. At Padra the road is joined by the two roads (i) Miyagam (Karjan), Gayaj and (ii) Miyagam-Sadhi. Both are seasonal roads. The Padra road has now been considerably improved and bridges have been constructed across several 'Nalas'. Of the roads from Baroda, this road is extremely important so far as goods traffic is concerned. The articles coming along this road to Baroda are chiefly Tur (arhar) and pulses from Padra. Grains and vegetables are also brought into the city, by this road. The greater importance of this road is naturally due to the fact that it passes through one of the most fertile tracts of Central Gujarat.

Baroda is connected with Bhilapur, Mandala (Baripur), and Karmal; the road beyond Bhilapur is only seasonal being used in fair weather. The Miyagam-Karjan-Dabhoi fair weather road passes through the large villages of Karvan and Baripur.
From Dabhoi also, several roads branch out in various directions. The more important of these are as follows:

(i) Dabhoi-Segwa: This road about 9 miles (13 km) in length, first passes through the fertile Kanham Dabhoi. From Segwa three seasonal roads branch out—one to Malsar, second to Sinor and third to Barkal. All these three villages are on the right bank of the river Narmada. Through these roads agricultural commodities and ghee are brought into Dabhoi town while from Dabhoi, grocery, sugar etc. move out.

(ii) Dabhoi-Tilakwada: On the south side, Dabhoi is connected with Tilakwada—taluka Headquarters. From Tilakwada one can take a circular route to Dabhoi via Jetpur, Gangadia, Agar, Vajaria and Limpara villages. This road brings to Dabhoi raw cotton, rice, jowar and bajri. The importance of this road will be understood when it is realised that it passes through the cotton tract—of the district. From Gangadia, on the east, the road goes to Naswadi (again a taluka headquarter and also a place of local importance), and Gadboriad which is the terminus of this road. Between Naswadi and Gadboriad, the road passes through teak forest and forest produce is, therefore, an important article carried by this road.

Apart from the roads described above, there are a number of other metalled roads, chiefly of local importance. These connect large market villages with one another or with the towns. These may be all-weather roads or fair-weather road. Examples of such roads are Godhra-Lunawada,
Village Roads:

Besides the various metalled and unmattled roads described above, we have the cart-tracks that connect the different villages. The cart-track is the universal route for the villager, and the bullock-cart, his universal means of transport.

In the sticky, clayey soils of Baroda the cart-tracks become extremely muddy in the rainy season and are closed for traffic so that the villages in the interior become inaccessible. It is only after the rains are over, that post-monsoon repairs are done over the "nalas" and elsewhere and the carts start moving.

At the other, extreme, in many parts of the Panchmahals district, no cart-track can move and villagers move on horseback. Over the rugged forested slopes (in eastern Devagadh Baria), there are practically no means of transport.

Bus-Frequency Map:

One method of studying the importance of roads is to find out the frequency of bus services playing on them. The map (Fig. 66) includes State Transport bus services. There are no private buses in W Gujarat State as a whole.
Four centres stand out prominently:
(a) Baroda  (b) Dabhoi  (c) Godhra  (d) Dohad

Baroda is important in itself as industrial centre. It also happened to lie on a National Highway. We, therefore, have local services from Baroda to Godhra and also through services operating beyond Godhra. Through service buses operate beyond Baroda, up to Ahmedabad, Lunawada, Dohad and Alirajpur. On the south side, Baroda is connected by bus-service with Jambusar. This route, is, therefore, most heavily traffic-ridden road.

Being the headquarters of a Commissioner's Division, Baroda is well-served by buses connecting this City with Ahmedabad. Express services between Baroda Ahmedabad are regularly run.

The other bus routes are mostly of local importance. The most important of these are the Baroda-Godhra; Baroda-Padra, the Godhra-Santrampur and Dohad-Jhalod services. Because of the favourable topography, the buses take a much lesser time to cover these routes in spite of comparatively more halts. For instance, the distance of about 80 miles (128 km.) between Baroda and Santrampur may be covered in as many as four hours; while from Godhra to Dohad a distance of about 40 miles (64 kms.) it may take 2 hours. The Devgadh Baria-Chhota Udepur; and Chhota-Udepur-Baroda routes are also well served by buses.

In the interior of the Panchmahals district, the services operate only in the 'open' or dry season, i.e., from December to June and there may be but a couple of services per day. The buses usually bring the
from a small village (e.g. Kundawada) to a taluka headquarter (e.g., Devgadh Baria); the passengers usually visit the latter for shopping, litigation or other work and return to the villages by the evening service. The transport is quick and the services are reliable, because of the efficient management by the State Transport Corporation Officers.

Development Work:

The importance of roads in an area poorly served by railways has been well realised by those in charge of planning and several items have been included in the Five Year Plans for the repair of roads, construction of bridges, etc. For instance, the following items were envisaged for the year 1964-65.

(i) Construction of a Bridge over River Dhadhar on the Baroda-Dabhoi Road—Estimated cost Rs. 20,000.00.

(ii) Dabhoi-Miyagam (Karjan) metalled road viz., Mandala Estimated cost—Rs. 65,000.00.

(iii) Improvement of the Santrampur—Dohad Road. Estimated cost Rs. 25,000.00

An ambitious project was to improve the old Chhota-Udepur—Devgadh Baria Road at an estimated cost of Rs. one Lakh. Another two and a half lakh rupees were allotted in the next year for this work. Large amounts were also allocated for the repair of important roads like the Baroda-Ahmedabad Road.

River Transport:

The River Narmada is navigable but is not used for floating rafts of timber, bamboos and firewood. At many places like Chandod, Malsar and Barkal, a ferry service operates in the rainy season, to cross the river from one bank to the other.