CHAPTER 2

DEVELOPMENT AND RELATIVE ROLE OF ALTERNATIVE MODES OF TRANSPORT IN ASSAM: A COMPARATIVE STUDY

River Transport

From very early times Assam's trade with the neighbouring provinces was mainly carried by river transport, the main route to Bengal, Bihar and Orissa being the Brahmaputra and the Ganges. The three overland routes to Assam as described by M'Cosh were not convenient. Basically, the problem was how to connect the interior places with the main rivers and the main rivers with Bengal or Calcutta, the principal trade centre near Assam. In 1834 when the steamer service was introduced on the Ganges, transport and communication to and from Assam were undeveloped. The journey downstream from Goalpara to Calcutta took twenty-five to thirty days and in the upward direction about eight days more, making it more tedious. At the time of British advent in Assam the difficulty of transport was the most serious obstacle to her development. The rates were high and a ticket from Calcutta to Gauhati would cost not less than Rs. 150. Freight on ordinary stores was charged at the rate of Re. 1 per cubic

1 M'Cosh: Topography of Assam, pp. 8-9
foot between Calcutta and Gauhati. The tea planters could not despatch tea by steamer and were compelled to keep their country boats.

As early as in 1839 when the Assam Company was formed, the Company started its own fleet of country boats; and although a steamer was purchased at the cost of £13,000 it was unsuccessfully tried on the Brahmaputra in 1842. In 1844 the river journey from Gauhati to Sadiya by country boats took six weeks and that from Goalundo (english) took three months or more. It was natural that the Assam Company faced difficulty in importing labour upto Gauhati by steamer and then by boat. Moreover, the Company's tea had to be exported from Nazira (in Upper Assam) to Gauhati in wooden country boats which, though not costly, could bring down only 150 chests of tea at a time. The steamer service in the Brahmaputra between Calcutta and Gauhati (960 kilometres) was established by the Government in 1847. Yet as it was irregular tea chests had to wait a long time at Gauhati for export. But the steamer service was profitable: the receipt always exceeded the expenses in sixtyfive trips since 1847 and the average earnings per trip were over Rs. 5,000. However, the main problem was shortage of steamer which prevented the Government of Bengal from maintaining the services with due regularity and in emergency these were even suspended or withdrawn altogether. Upto 1853 carts and carriages were unknown and the roads were few and bad and the nascent tea industry was at the mercy of the Government steamers. The Assam Company had to buy iron boats in which tea was 'tracked down' either to Gauhati for transhipment or to Calcutta if no steamers were available.

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2 Allen, B.C.: Assam District Gazetteer (1905), volume iv, pp.174-175
3 Guha, A.: Colonization of Assam: Second Phase 1840-1859, Indian Economic and Social History Review, December 1967, p.290
4 Shakespeare, Col. L.W.: History of the Assam Rifles (1929), pp.3-4
5 Barpujari, H.K.: Assam in the Days of Company (1963), p.252
6 Ibid., p.254
In 1856 the Government steamer service was extended from Gauhati to Dibrugarh. Four years later the Indian General Steam Navigation Company, being faced with competition from the East India Railways in the area parallel to the Ganges route, entered into a contract to run a pair of vessels every six weeks from Calcutta to Dibrugarh. So the emergence of organised enterprise in river transport to Assam was in a way the result of railway extension to Patna and competition between steamer companies in the Ganges route. In 1860 Assam was the most backward area having no direct route to any place of importance; its density of population was low and had no towns of any size. In 1861 Colonel Hopkins, the Commissioner, drew a gloomy picture of the isolation of Assam. To quote him:

"... not a single road fit for wheeled carriage, or ever passable at all for a great portion of the year ... there is such an absence of the full tide of life running through Assam, such a want of intercourse between man and man, ... a terrible sense of isolation, by which enterprise is chilled and capital and adventurers scared away ... the capitalist is not always to be found, who will venture his money in a country to which access is so difficult as it is to Assam, through which his correspondence travels at the rate of a mile and a half an hour and in which it may take a month to accomplish a journey of two or three hundred miles ..." 7

It was the cultivation of tea which turned the course of history.

In 1861 the I.G.S.N. Company started regular traffic on the Brahmaputra with arrangements for the carriage of labour into Assam. In 1862 seven trips were made from Assam and back and in 1863 there was one trip per month. There were complaints of irregularity and defective accommodation. In 1862 the River Steam Navigation Company also started operation with three steamers and three flats. By 1863 the I.G.S.N. Company was more attracted to Cachar areas as compared

7 Allen, B.C.: Assam District Gazetteer, Kamrup (1905), volume IV, p. 176
to the Ganges trade. This Company began to expand and by 1869 it had 16 steamers, 32 flats and 5 barges. In 1864 when the Eastern Bengal Railway was extended to Khustia (160 kilometres north of Calcutta) the R.S.N. Company entered into an agreement with the railway for traffic to Assam being transported by rail to Khustia and then by steamer to Assam and vice-versa. We get another example of river-rail coordination (as reflected by through booking) when we find that in 1869 the I.G.S.N. Company and the railways entered into a similar agreement which was supposed to be an advantage to avoid the dangerous navigation of the Sunderbans. But these agreements of the R.S.N. Company and the I.G.S.N. Company were discontinued in 1871 and steamers again plied to Assam from Calcutta. A similar experiment was tried in relation to steamers for Dacca and Cachar when the Port Canning was connected to Calcutta by the railways, but this was also abandoned later on. It was in 1869 that the R.S.N. Company made a two-year agreement with the Jorhat Tea Company for carriage of its tea and stores at reduced rates in consideration of the whole of its goods being reserved for this Company.

When in 1873 the Eastern Bengal Railway was extended to Goalundo passengers from Calcutta to Assam boarded the steamer at Goalundo, but goods traffic followed the all-river route. By 1875 there was a weekly steamer service to Assam and a fortnightly one to Cachar in addition to other improvements like introduction to feeder services from the Brahmaputra to gardens, increase in number of flats of the I.G.S.N. Company and the R.S.N. Company and introduction of more efficient engines. During these years tea industry showed tremendous promise of development as the acreage under tea and yield in Assam were already the maximum in the whole of India. In 1878 the R.S.N.

Company was running a regular service in competition with the I.G.S.N. Company. It was natural that the I.G.S.N. and R.S.N. Companies thought it better to enter into agreement with the tea industry so that the exporters could send their goods by the steamers of any Company at a considerable reduction over ordinary rates. In 1879 when the Eastern Bengal Railway introduced their services, both of passenger and goods traffic, between Serajganj, Narayanganj, Dacca and Cachar stations on through railway tickets and documents, the I.G.S.N. and R.S.N. Companies faced rail competition. The I.G.S.N. Company, therefore, negotiated with the Eastern Bengal Railway for carriage of goods between certain river-cum-railway junctions by the vessels of the I.G.S.N. Company under 'through railway documents'. And by 1882 the R. S. N. Company entered into an agreement with the Assam Government for running a daily service (called the Assam Mail Service) between Dhubri and Dibrugarh. In the same year the 'combined cargo service' was introduced by the I.G.S.N. Company for carrying goods between Serajganj and Goalundo and then shipment by rail to Calcutta. This arrangement was extended to Narayanganj and Dacca in 1883. With the steam flotilla of the Eastern Bengal Railway a lower freight rate would have benefited the tea industry. But as these two Companies opposed the Government decided that railways subsidised by the State should not compete with private enterprise and the I.G.S.N. Company chartered the railway flotilla.

The Assam Administrative Report of 1880-81 shows that there were various government ships and vessels (such as Koladyne, Jabona, Sunamukhi, Condor, Konai, Gogra, Hawk) which were employed in Assam. 10 At this time there were as many as 275 ferries (in the six districts of the Assam Valley) worked by private or Public Works Department for

intrastate traffic movement. Around this time a reduction of fares by the steamer companies plying on the Brahmaputra resulted in more and more people moving to tea districts by steamer with lesser transit time and as such the boat traffic declined in both directions. The Report on the river-borne trade of Assam during the same year states that on an average eight steamers, loaded with goods of every description, left Calcutta for Dibrugarh every month. Almost the entire quantity of cotton-piece goods, woollen-piece goods, liquors, drugs, rice, pulses, iron and other metal (worth Rs. 39.10 lakhs) moved into Assam by steamer. The country boats monopolised in salt, timber, lime and limestone whereas in export of tea (worth Rs. 4.6 lakhs) and silk, steamer played the leading role. The export of timber provided employment for about 600 boats, which belonged to Bengal.

It is interesting to note that around 1882 river transport helped the railway construction in Assam in a big way. The steamers of the Assam Railways and Trading Company carried almost all materials and stores required for the construction of railway line from Dibrugarh to Makum and Sadiya. The steamer service of the Assam Railways and Trading Company (with 5 steamers and 16 flats in total) speeded up the construction of the railways and collieries and helped to some extent development of markets for coal. The pattern of development was significant: first, river transport helped railway development, second, with railway development coal production became possible and third, with coal production in the area of the A.R. & T. Company more space in the steamer became available for carrying cargo to Assam as no coal was required to be imported from Bengal.

Up to 1882 the steamer companies carrying cargo and towing flats handled passenger traffic and it took 18 days to reach Dibrugarh from Goalundo. After 1882, with the development of railway enterprise, the mainline steamers became towing steamers only and stopped carrying passenger. In 1883 the two Companies (I.G.S.N. and R.S.N.), aided by a Government subsidy, established a daily service steamer on the Brahmaputra which could reach Dibrugarh from Goalundo within a week. This was a speedier and regular service of small passenger steamer which carried mails also. In 1887 such service was introduced in the Surma river, between Goalundo and Silchar during rainy season and between Goalundo and Fenchuganj in the cold weather.

So far as the steamer traffic on the Megna was concerned, at this time it was entirely carried by the I.G.S.N. Company. With the beginning of the 'despatch service' in October 1886, goods were sent by rail from Calcutta to Goalundo and then by despatch steamers to the Assam Valley districts. The despatch steamers' size, speed and capacity to handle goods and passenger traffic advanced gradually from 145 feet in length with 60 tons and 400 passengers in 1883 to 240 feet in length with 470 tons and about 2,000 passengers in 1902. It is interesting to compare the traffic of the Brahmaputra Valley with that of the Surma Valley around 1883-84. The traffic figures indicate that the former consumed 3 times the quantity of European cotton goods, 5 times the amount of ganja, 10 times the supply of mineral oils, 2 times as much as sugar and 4 times as much as tobacco and more salt, gram and pulse than was required by the latter. Amongst imports, the Brahmaputra Valley took 12 times as much potatoes, 4 times as much opium, 7 times as much

12 Playne, S.: Bengal, Assam, Behar and Orissa (1917), p.718
husked rice, 4 times as much coal and coke. The picture changed in subsequent decades.

It is important to record here that by 1889-90 Calcutta already gained supremacy as the origin and destination of Assam traffic. The total value of trade of Assam with Calcutta was about 71 per cent of the whole trade of the province. Dacca ranked second. Steamers as usual practically monopolised the whole trade with Calcutta clock, 94 per cent of the inward and 95 per cent of the outward traffic being carried by them. Of this trade, the Brahmaputra Valley took 64 per cent of the total imports and supplied 63 per cent of the exports. The following Table gives an idea of the direction of trade and mode of river transport in the closing years (1894-95) of the nineteenth century.

Table 2.1: Proportion of Total Trade Carried by Boat and Steamer in the Brahmaputra and the Surma Valley

<table>
<thead>
<tr>
<th>Blocks</th>
<th>Imports</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>by Boat</td>
<td>by Steamer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calcutta</td>
<td>5.43</td>
<td>94.57</td>
<td>3.35</td>
<td>96.65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dacca</td>
<td>97.56</td>
<td>2.44</td>
<td>98.42</td>
<td>1.58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Bengal</td>
<td>58.99</td>
<td>41.01</td>
<td>76.01</td>
<td>23.99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern Bengal</td>
<td>53.26</td>
<td>46.74</td>
<td>49.43</td>
<td>50.57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bihar</td>
<td>48.49</td>
<td>51.51</td>
<td>1.31</td>
<td>98.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patna city</td>
<td>100.00</td>
<td>-</td>
<td>98.51</td>
<td>1.49</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Western Bengal</td>
<td>22.62</td>
<td>77.38</td>
<td>99.07</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Thus, when the railways had just touched the soil of Assam

14 G.O.A.: Report on the River-borne Trade 1889-90, p.4
steamers played a crucial role in facilitating trade with Calcutta, whereas for trade with Dacca block and Patna city boat was inevitable. If we remember that the first survey in connection with the Assam Bengal Railway took place in 1890's it was but natural that in 1896 apart from necessary consumer goods important capital goods like locomotive engines, steel rails, fish plates, sleepers and keys of steel and cast iron and other sorts of materials for construction were imported to both the Brahmaputra Valley as well as the Surma Valley from Calcutta alone.

Appendix I reveals that towards the close of the nineteenth century boat transport dominated trade to and from Sylhet and Lower Assam block whereas steamer's direction of trade was more to and from the Upper Assam block.

In the Brahmaputra Valley steamer played a more important role than boat transport both in imports and exports: imports by steamer increased from Rs. 62.20 lakhs to Rs. 226.80 lakhs and exports increased from Rs. 201.56 lakhs to Rs. 316.10 lakhs from 1880-81 to 1896-97. And during the same period the value of imports by boat declined from Rs. 17.34 lakhs to Rs. 14.52 lakhs, but exports by boat from the Brahmaputra Valley increased from Rs. 28.23 lakhs to Rs. 34.70 lakhs. However, by the end of the nineteenth century (1898-99) we record some reverses as the value of inward traffic by steamer declined to Rs. 185.59 lakhs as against increased value of traffic (about Rs. 20.89 lakhs) by boats. But in case of exports the value of traffic both by steamer (Rs. 243.48 lakhs) and boat (Rs. 46.46 lakhs) showed a declining tendency. On the whole, about 90 per cent of the value of imports and 84 per cent of the value of exports were handled by steamers in the Brahmaputra Valley. In export trade boat transport

played a more important part handling about double the value of import trade.

In the Surma Valley, on the other hand, boats predominated in regard to both inward and outward movement as the area was less navigable by steamers as compared to the Brahmaputra Valley. Moreover, export markets like Dacca, Narayanganj, Mymensingh, Tipperah were nearer the production centres so that boat transportation was economical. In terms of value, outward movement by boats trebled from Rs. 24.80 lakhs in 1881-82 to Rs. 72.38 lakhs in 1898-99 as against fall in its value by steamer from Rs. 111.85 lakhs to Rs. 82.31 lakhs and as such the share of boat rose from 18 per cent to 47 per cent. Imports by boat rose from 56 per cent (Rs. 53.51 lakhs) in 1881-82 to more than 65 per cent (Rs. 127.32 lakhs) in 1887-88 but declined to about 51 per cent (Rs. 68.80 lakhs) by the close of the last century (1898-99). Considering both exports and imports, the share of boat in the Surma Valley stood at about 49 per cent during this period.

The main imports by boat were salt, grain, oil, sugar (unrefined), tobacco, piecegoods, metal, wheat, kerosene, and the main exports by boat were jute, paddy, potatoes, orange, lime, hides, dry fish, bamboo, oil seeds, mats. Imports by steamers, on the other hand, were cotton piece goods, metals, liquor, opium, salt, coal and coke and exports were tea, tea seed and similar items which were valuable in proportion to their bulk. In terms of weight boats monopolised the export traffic.

The low reliance on boat transport in the Brahmaputra Valley may be explained by the fact that the upward journey by boat was long and tedious and the market centres like Calcutta and Goalundo were widely dispersed: boats had to travel for days without passing a

17 G.O.A.: Assam Administration Reports
18 Ibid.
village. The main imports by boat were kerosene, sugar (unrefined), tobacco, dry fish, stone, lime, rice. Generally, the more bulky and less valuable commodities like paddy, raw cotton, mustard, timber, jute, hides, brass, til, shell, lac etc. were exported by boat owing to lesser transport cost. The more valuable items like opium, liquor, coal, cotton piece goods, pulses, rice, metal (except copper and zinc), leather, blankets, brass and iron ware, railway plants etc. were imported by steamer. Exports such as ivory, tea, wax, rubber and raw silk from the Brahmaputra Valley were handled by the steamer.

The following Table presents a vivid picture of river-borne imports and exports of Assam as compared to those of railways during the closing years of the nineteenth century.

Table 2.2: Rail and River-borne Imports and Exports of Assam

<table>
<thead>
<tr>
<th>Years</th>
<th>Imports into Assam</th>
<th>Exports from Assam</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>by rail</td>
<td>by river</td>
</tr>
<tr>
<td></td>
<td>Quantity</td>
<td>Value</td>
</tr>
<tr>
<td>1896-97</td>
<td>1.03</td>
<td>8.84</td>
</tr>
<tr>
<td>1897-98</td>
<td>2.86</td>
<td>19.66</td>
</tr>
<tr>
<td>1898-99</td>
<td>6.84</td>
<td>33.00</td>
</tr>
<tr>
<td>1899-00</td>
<td>4.54</td>
<td>24.76</td>
</tr>
<tr>
<td>Average</td>
<td>3.82</td>
<td>21.57</td>
</tr>
</tbody>
</table>

It transpires from the foregoing Table that river-borne trade averaged to more than 142 lakh maunds, worth Rs. 914 lakhs as against average traffic by rail transport to the order of a little more than the closing years of the nineteenth century.

19 G.O.A.: Reports on the Rail and River-borne Trade of Assam
5 lakh maunds, worth less than Rs. 64 lakhs. Thus, the share of railways in Assam's trade stood at about 3.4 per cent and 6.5 per cent in terms of quantum and value respectively. In view of the fact that the value of tea constituted more than 70 per cent (Rs. 2.67 crees for 5.34 lakh maunds) of the value of the whole export trade of Assam in 1883-84, it may be noted that the river transport enabled the tea industry to take root in Assam more than half a century before the advent of long-distance railway communications.

Despite extension of the A.B. Railway from Lumding to Guwhati in 1901, in the Assam Valley 98 per cent of the weight of the trade was carried by river during 1901-02. In the Surma Valley, however, 22 per cent of the total weight of the trade went by rail as against 11 per cent in the preceding year. The railways obtained 62 per cent of tea trade in Sylhet due to their easy accessibility to tea gardens as against only 12 per cent in Cachar. However, the share of rail transport in import trade of these two districts stood at 32 and 72 per cent respectively. In the beginning of this century, in 1902-03 railways carried only 18 per cent of imports and 9 per cent of exports to and from the district of Sylhet. But the railway (the A.R. railway) carried 92 per cent of coal and coke, 10 per cent of salt, 25 per cent of kerosene oil, and 87 per cent of husked rice to the Surma Valley.

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21 By 1901 there were three alternative routes from Calcutta to Cachar and Sylhet by river for goods traffic - Sunderbuns Daily Despatch, bi-weekly goods service to Chandpur, in connection with the A.B. Railway, and the weekly cargo, or direct service from Hintolaha and Jaggernath Ghats. Goods or direct service rates, were about 20 per cent lower than despatch rates. (James, P.: Routes To Cachar and Sylhet : 1901, pp.2-3)
22 G.O.A.: Assam Administration Report 1901-02, p.197
23 Assam District Gazetteer, volume II, p.194
24 G.C.A.: Assam Administration Report 1902-03
Thus, the river transport played a more important role in export, and during the initial stage railway's contribution was more in import of essential items mentioned above.

In 1904 with the introduction of the Assam Sunderbans Despatch Service to bring tea direct from Assam to Calcutta without transhipment at Goalundo and the agreement with the E.B.Railway to an arrangement conferring equal rates for tea from the Dooars, that helped the I.S. Companies to obtain a share of tea traffic via Dhubri, the impact of river transport became more perceptible. Despite certain limitations in the system of registration it may be noted that during 1906-07 54 per cent of the registered imports and about the same proportion of the exports of the province of Assam was carried entirely by river. Even in trade with Calcutta in which railways enjoyed immense advantages over river transport and especially over country boats, 57 per cent of the imports and 48 per cent of the exports were carried by river only. The impact of river transport was also conspicuous when the export trade (in jute and tea) was considerably handicapped by the insufficiency of railway wagons in addition to the defective arrangements between the steamer companies and the A.R.Railway (for the traffic from Narayanganj via Chandpur to Chittagong). In 1908-09 the river-borne traffic equalled 50 per cent of total exports and 41 per cent of imports and thus the impact of railways was more conspicuous only in imports to Assam.

25 Report on Trade Carried by Rail and River in the Province of Eastern Bengal and Assam during the year 1906-07, p.4
26 The system of registration in vogue was to count trade carried partly by rail and partly by river as trade carried entirely by rail. (Report on Trade Carried by Rail and River in the Province of Eastern Bengal and Assam during the year 1906-07, p.4). On the contrary in the Lokur Report we find that traffic moving partly by rail and partly by river was generally termed 'by the river route' as distinct from the 'all-rail route'. (G.C.I.: Report - Ganga-Meghna. Water Transport Board : 1954 : p.70)
27 Report on the Administration of Eastern Bengal and Assam 1906-07, p. ix and p.47
In 1905 daily steamer service was started between Dhubri and Gauhati in both directions as a natural consequence of the extension of the E.B. (State) Railway to Dhubri in 1902. However, river services for passenger traffic even for intrastate journeys were found to be tedious.

Immediately after the Great Depression of 1930 the Mitchell and Kirkness Committee rightly found out that the steamer routes in the Assam (Brahmaputra) Valley totalled about 700 miles and in the Surma Valley nearly 300 miles. The steamer routes alone were, therefore, more extensive than the system of metalled roads and were in total length only slightly exceeded by the railways.

With the Second World War the steamer ghats experienced congestion owing to huge volume of inward traffic. During 1941-42 the government aimed particularly at diverting traffic to river route so that the strain on railways could be reduced. The normal trade and commerce suffered when Aningaon-Kokilamukh and Dhubri-Goalpara services were closed and Bordutti (Badati) Feeder Service was converted from daily to alternate day service to meet military and other State requirements.

After the partition of 1947 the R.S.N. and I.G.S.F. Companies obtained virtual monopoly of traffic (especially of tea and jute) between Calcutta and Assam as they could offer direct transport between these places which the railways could not. The steamer

28 The service which carried the mails was supposed to complete the up journey in 20 hours and the down in 11. The other service was run between Goalundo and Dibrugarh and called at different ghats. (Allen, B.C.: Assam District Gazetteers, volume IV, Kamrup, 1905, pp. 176-177)

29 N.A.I.: Selections from Vernacular Newspapers in Eastern Bengal and Assam for week-ending February 8, 1911

30 G.C.I.: Mitchell and Kirkness - Report on the Present State of Road and Railway Competition and the possibilities of their Future Coordination and Development 1933

31 In addition to steamers there were about 500 flat-bottomed boats each with capacity between 200 and 1,000 maunds in Dhubri port area alone which carried mainly timber between Bengal and Assam.
companies' rates were also not subject to the control of the newly set up Rates Tribunal. It was apprehended that the river transport would be a formidable river to the railways in future. But river transport had also occasional and unforeseen troubles as in December 1949 when barges, laid with Assam jute, on their way to Calcutta were held up in Pakistan territory. Then the river companies had to purchase coal from the railways at higher price owing to the operation of a system of coal-price equalization. Further, there was increase in freight with effect from June 1951 owing to the introduction of customs-examination charge of 6 pies per maund for each border crossing by the steamer companies. In addition to these, there was loss of time in eight check-posts on the Calcutta-Assam-Calcutta trip. The total detention (about 4 hours in each place), being about 10 per cent of the total time taken for the voyage, appeared to be excessive from international standard. Perhaps all these factors, despite traffic potentialities, led to loss incurred by the R.S.N. Company from 1947 to 1953 and the I.G.S.N. Company in 1947 and 1949.

Before the completion of the Assam Rail Link in 1949 the river services (taking all the companies including the J.S. Companies) had their most busy years. The J.S. Companies, the most prominent amongst the private companies, continued to carry about 80 per cent of tea, 90 per cent of jute and large volume of petroleum products from Assam to Calcutta till 1963-64 and also moved in large volume of imports. However, even after the construction of the Rail Link when

32 Vakil, C.N.: Economic Consequences of Divided India (1950), p.424
35 The J.S. Companies had two main lines, four feeder and one passenger service.
the railways connected internal markets with other states, the importance of waterways did not decline. For example, in January 1950 when the Assam Link breached for two months at the Tista river, the steamer companies played a crucial role and while appreciating it the Indian Tea Association, in its Annual Report for 1950 mentioned that "it is of the utmost importance to ensure that the steamer routes are maintained in use." 37

The earthquake of 1950, which changed the regime of the rivers, was the biggest blow to the river services of Assam. As a result of navigational difficulties the main line service was terminated 70 kilometres downstream of Dibrugarh, the main tea producing region, and only feeder services were operated to Dibrugarh. In December 1961 the main line service was further restricted only up to Neamati. Between 1953 and 1956 the following services of the J.S.Companies were closed one by one: Amingaon-Gauhati, Tezpur-Neamati, Dhubri-Goalpara, Desangmukh-Dibrugarh, Badati Feeder Service, Badarpur-Looba Feeder Service (in Cachar).

The impact of river transport on the economy of Assam is, broadly speaking, the impact of the J.S.Companies. Out of 510 registered steam vessels operating in Calcutta-Assam region in 1953 about less than 200 belonged to the seven steamer companies and these seven steamer companies handled exports and imports of about 20 million maunds a year. In addition to these, some jute mills and other industries had their own vessels. According to a Study Group on Transport Planning about 40 per cent of the total river traffic was handled by

Moreover, security and delivery arrangements of the J.S. Companies were found to be better than many small Indian companies. During 1951-54 the annual average traffic of the J.S. Companies to Calcutta from the Brahmaputra Valley was to the order of about 3 lakh tons and from Cachar area 0.4 lakh ton. Thus, total exports of the J.S. Companies were about 3.5 lakhs tons. Similarly, traffic from Calcutta to the Brahmaputra Valley stood at about 3 lakh tons, to Cachar about 0.5 lakh ton, to Tripura about 0.1 lakh ton, bringing the total import to Assam area to the order of about 3.7 lakh tons. Moreover, there was intermediate traffic (Assam internal, Ganges internal, Ganges to Assam, Assam to Ganges) of the order of about 1.5 lakh tons. In 1953, on the whole, over 60 per cent of the traffic between Assam and West Bengal moved through river routes.

After the partition of 1947 the river transport had a special role in movement of traffic to and from Cachar district. It was the Cachar district which served as origin and destination of a large bordering area comprising Tripura and the Mizo Hills district of Assam. Cachar, which had three lines of communication before partition, namely, the rail-river-rail route via Chandpur, the all-rail route via Santahar, Mymensingh and Akhaura and the rail route from Chittagong, began to have a circuitous and uncertain rail route after partition and hence dependence of Cachar on river route increased several times. By 1954 traffic from Calcutta to Cachar rose to 11 lakh maunds as against 4 lakh maunds in 1946. Similarly, river-borne exports to Calcutta rose to about 9 lakh maunds in 1954 as against about 4 lakh maunds in 1946. On the contrary, the volume of traffic by the Ganges

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39 Ibid.
Feeder Services to and from Cachar declined after independence from about 1 lakh maund in 1938 to about 0.5 lakh maund in 1954. This was partly because of the diversion of traffic to rail transport owing to shorter distance and quicker transit by rail with stations in the Ganges Feeder Service route and avoidance of formalities of customs.

During the post-independence era the transport requirement of Cachar was much more than the capacity of river services. In 1954 the R.S.N. Company informed the Karimganj Merchants Association that cargo from Calcutta was restricted to 21,000 maunds per week of which 6,000 maunds per week was for stations above Karimganj ghat and the balance for Karimganj ghat and via. The booking of perishable cargo (such as onions) was wholly restricted for fear of deterioration in transit. The shortage of capacity of the river services to and from Cachar area was conspicuous when the R.S.N. Company advised the Karimganj Merchants Association to offer as much of their goods for Karimganj ghat or via Karimganj ghat to upper section stations for onward carriage by rail.

The river service also was not perfect. The correspondence between Karimganj Merchants Association and the R.S.N. Company in 1955 shows that movement of both inward and outward cargo during 1954-55 was very slow and consignments took one month to reach Karimganj from Calcutta instead of the normal period of ten days. Apart from bad channel conditions, other reason for such state of affairs was the withdrawal of bigger vessels from the line. At this time about 20,000 maunds of cotton, bamboo goods and other goods were deteriorating in the godowns of the merchants due to non-acceptance.

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of cargo by steamer companies. Moreover, owing to strike by the crew, consumer goods worth about Rs. 25 lakhs were held up between Calcutta and Karimganj which, in turn, led to rise in price.

The J.S.Companies rendered, on the whole, a good service in view of the fact that except partial grant made by the Government of Assam for bandalling work the Companies did not receive subsidy for the development of water transport. Although floods and consequent breach of the rail Link used to cause more strain on the river route the J.S.Companies at one time expressed that they had surplus capacity to the tune of 150 million ton-miles per year in up and down directions (except during August-December in down direction) between Calcutta, Assam and Bihar. That the J.S.Companies played an important part especially in the Assam Valley is evident from the following Table.

Table 2.3: Principal Traffic between Assam and Calcutta by the Joint Steamer Companies

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Year</th>
<th>Despatched from</th>
<th>Despatched to Calcutta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tea</td>
<td>1956</td>
<td>Assam Valley</td>
<td>89,810</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surma Valley</td>
<td>11,504</td>
</tr>
<tr>
<td></td>
<td>1957</td>
<td>Assam Valley</td>
<td>85,619</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surma Valley</td>
<td>8,183</td>
</tr>
<tr>
<td></td>
<td>1958</td>
<td>Assam Valley</td>
<td>10,047</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surma Valley</td>
<td>1,114</td>
</tr>
<tr>
<td>Timber</td>
<td>1956</td>
<td>Assam Valley</td>
<td>2,654</td>
</tr>
<tr>
<td>Wax</td>
<td>1956</td>
<td>Assam Valley</td>
<td>32,663</td>
</tr>
<tr>
<td>Bulk Oil</td>
<td>1956</td>
<td>Assam Valley</td>
<td>9,566</td>
</tr>
<tr>
<td>Jute</td>
<td>1956</td>
<td>Assam Valley</td>
<td>24,769</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surma Valley</td>
<td>416</td>
</tr>
<tr>
<td></td>
<td>1957</td>
<td>Assam Valley</td>
<td>25,844</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surma Valley</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td>1958</td>
<td>Assam Valley</td>
<td>35,880</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Surma Valley</td>
<td>1,114</td>
</tr>
</tbody>
</table>

In fact in the 1960's the volume of traffic between Assam Valley and Calcutta was more than that between Surma Valley and Calcutta even when we take into account of the figures of other important steamer companies.

Table 2.4: Traffic from Assam to Calcutta by Waterways

<table>
<thead>
<tr>
<th>Year</th>
<th>From Assam Valley</th>
<th>From Surma Valley</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1956</td>
<td>170.2</td>
<td>0.4</td>
<td>170.6</td>
</tr>
<tr>
<td>1958</td>
<td>136.0</td>
<td>1.1</td>
<td>137.1</td>
</tr>
<tr>
<td>1960</td>
<td>396.1</td>
<td>39.1</td>
<td>425.2</td>
</tr>
<tr>
<td>1963</td>
<td>232.9 (1,108.5)</td>
<td>N.A.</td>
<td>232.9</td>
</tr>
<tr>
<td>1964</td>
<td>26.4 (8,261.9)</td>
<td>N.A. (9.3)</td>
<td>26.4</td>
</tr>
<tr>
<td>1965</td>
<td>5.6 (2,817.2)</td>
<td>N.A. (8.4)</td>
<td>5.6</td>
</tr>
</tbody>
</table>

(Figures in bracket show imports from Calcutta)

At this point it may be mentioned that after 1957 the imports to Assam by rail was about 140 metre gauge wagons per day, which means about 5 lakh tonnes per year, whereas imports by five steamer companies alone appeared to be much higher as can be seen from Table 2.4. In addition to steamers there were boats which carried agricultural produce from Bihar to Assam averaging about 50,000 to 60,000 maunds per month and on return journey from Assam these boats loaded jute, timber and other products destined for Calcutta. It may be mentioned here that the average total monthly traffic carried by the J.S.Companies in 1957 from Bihar to Assam was equal to about 145 metre gauge wagons at 15 tons per wagon. In 1968 even with the restricted service due to the closure of the Singri-Panchanoi (river) tramway near Tezpur, and of Dibrugarh depot and Palasbari steamer ghat because of technical difficulties, the total

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44 G.O.A.: Regional Transport Survey: North Eastern Region, Shillong, December 1967, volume I, pp.269-355 (Figures mentioned in Table 2.4 include traffic of only five steamer companies).
exports and imports of Assam stood at 106 lakh maunds and 95 lakh maunds respectively. In spite of above restrictions and higher freight rates as compared to rail, tea gardens preferred river transport as the transit time by river to Calcutta was 7 days as against 15 to 20 days by rail. Further, river transport was advantageous for reaching the tea transit sheds and other warehousing establishments at Calcutta. In fact, the services of the steamer companies were especially suited for carrying bulk commodities like machinery, heavy lifts and heavy pipe sections from Calcutta to Dibrugarh, a distance of more than 1,800 kilometres. Each of the flotillas of the J.S Companies normally carried equivalent of 4 metre gauge goods trains or ½ broad gauge goods trains. Besides, inland water transport did not cost much in terms of foreign exchange, as tugs and barges were constructed in India. Moreover, the average life of vessels (tugs and barges) was estimated at about 50 years, which compared favourably with the life of railway rolling stock and was much more than that of road vehicles. The capital and maintenance costs of inland water transport compared favourably with those of the roads or the railways in Assam.

While assessing the role of rail and river the Inland Water Transport Committee (1959) stated:

"at the present moment the railways are handling only about 35 per cent of the total traffic of Assam and notwithstanding the improvements proposed in the Second Plan for strengthening and doubling the railway link in sections, about 50 per cent of the traffic requirements of Assam will still have to be met by Inland Water Transport".

The Committee went on to add that 93 per cent of total tea production (about 400 million pounds) and 90 per cent of jute crop was exported by river transport. The Planning Commission observed that out of the

48 Capital, November 1, 1956, p.574
total traffic between Assam and Calcutta about half was carried by river and the rest half was shared between the railways and other means of transport. Another estimate stated that just before the Chinese aggression of 1962 when there were altogether 13 Companies (including the J.S.Companies) running services between Calcutta and Assam about 60 per cent of the total import-export cargo from and to Assam was carried by inland water transport and 30 per cent of this cargo was carried by the J.S.Companies.

According to the Committee on Transport Policy and Coordination, out of a total annual traffic of 2.5 million tonnes between Assam and Calcutta, water transport accounted for about 1 million tonnes in recent years. It was calculated that even after partition the R.S.I. Company carried about two-thirds of the river-borne traffic of the Brahmaputra Valley, Cachar and Tripura.

The Regional Transport Survey of Assam also tried to estimate the distribution of the quantum of traffic among different modes of transport as follows.

Table 2.5: Annual Traffic between Assam and Calcutta (1963-66) (in lakh tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Mode</th>
<th>To Assam</th>
<th>From Assam</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td>Waterways</td>
<td>17.40(82.1)</td>
<td>3.73(16)</td>
<td>21.13 (47.4)</td>
</tr>
<tr>
<td>1963-64</td>
<td>Railways</td>
<td>2.18(10.4)</td>
<td>18.35(78.4)</td>
<td>20.53 (46.0)</td>
</tr>
<tr>
<td>1966</td>
<td>Roadways</td>
<td>1.59(7.5)</td>
<td>1.32(5.6)</td>
<td>2.91 (6.6)</td>
</tr>
</tbody>
</table>

(Figures in brackets show percentage)

50 G.O.I.; Planning Commission, Third Plan: p.555
51 Lok Sabha Secretariat: Lok Sabha Debates, 3rd Series, volume XLVII, No.2, November 1960
52 G.O.I.: Planning Commission, Committee on Transport Policy and Coordination: Final Report 1966, p.8
53 Ibid., p.145
Thus, according to the Survey in 1963 more than 47 per cent of goods moved between Assam and Calcutta by waterways as against 46 per cent by railways in 1963-64. Like all other traffic estimates, this estimate also is open to criticism, as in regard to railways only six focal points and in respect of river traffic only five steamer companies were taken into account. Similarly, the road traffic figures were worked out on the basis of only one-week survey in 1966 at one entry point of the State.

The fact that the earnings of the J.S. Companies were about Rs. 7 crores per year, almost equal to the goods earnings of the N.F. Railway, proves the important part played by these companies in Assam.

In 1962 Mr. J.M. Parsons, an experienced officer of the Macneill & Barry Ltd., Calcutta took stock of the river transport capacity and commented:

"The Calcutta-Assam route is served by some 52 towing vessels, 64 cargo carrying powered vessels and 388 dumb cargo units (flats and barges) with a combined total capacity of 1,56,000 tons, carrying a total in both directions of 914,000 tons of cargo a year, of which the Joint Steamer Companies carry about two-thirds and some seven other smaller companies balance. The Cachar route is served by 12 towing vessels and 40 dumb cargo units with a total capacity of 7,400 tons and carrying 125,000 tons a year consisting solely of the Joint Steamer Companies service." 55

Parsons estimated a surplus downward capacity from Assam by river of about 2,00,000 tons a year owing to the seasonal and overlapping nature of the tea and jute crops which provided the main export traffic from Assam. In the upward direction, on the contrary, there was a shortage of overall transport capacity, including river and rail, to the tune of 1,20,000 tons a year, largely on account of Assam's development projects and non-availability of basic goods like cement and fertiliser.

in the State. In addition to shortage there were various restrictions on the dimension and weight of traffic to Assam which stood in the way of getting proper type of materials necessary for development projects in Assam. A report of the Directorate of Industries stated:

"... arrangements should be made well in advance for procuring flats. The maximum dimension of package that can be booked by rail-cum-river routes ex-Calcutta is 28' x 6' x 8' and weight is 3½ tons. In local booking to Gauhati Bazar Ghat, a weight up to 12 tons is permissible. Packages of heavier and bigger dimensions have to be booked by all rail route for which the maximum dimension are different for different goods. Maximum overall width for all consignments to be crossed on Pandu-Amingaon ferry is restricted to 5' 1" on either side of the track. As regards weight, it would not be possible to transport any individual package weighing more than 30 tons as the capacity of the biggest crane on the South bank is 35 tons only. As regards length of individual package, it would not exceed 30'."

According to Joint Agent, I.G.N. & R.S.N. Company, Silchar, the maximum dimensions and weight of packages that could be transported by steamer from Calcutta to Cachar was further restricted.

So far as external trade is concerned, 1964 was the last year of the glory of steamer services in Assam as the Indo-Pak hostilities of 1965 led to closure of the river route and river service came to standstill. After the closure of the Indo-Pak river route, about 22 steamers and 40 fleets remained in Assam waters. "River craft numbering 55 belonging to the R.S.N. Company and cargo in transit valued at about Rs.3.19 crores were detained in East Pakistan." That the 1965 trouble greatly affected river traffic became evident when exports by river in case of tea and jute declined from about 93 per cent and 90 per cent in 1959 as estimated by the Inland Water Transport Committee, to 65 per cent and 25 per cent respectively. Imports of foodgrains, sugar, coal, fertilisers, cement, iron and steel, machinery etc. also declined. The J.S. Companies' traffic touched a very low...

57 Lok Sabha Secretariat, Lok Sabha Debates, February 22, 1965, Column 1474
level in 1965 as may be seen from the Table below and the companies were finally wound up in May 1967.

Table 2.6: Goods Traffic Carried by Joint Steamer Companies

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports</th>
<th>Exports</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1962</td>
<td>3,84,391</td>
<td>3,35,739</td>
<td>7,20,130</td>
</tr>
<tr>
<td>1963</td>
<td>4,41,338</td>
<td>3,43,440</td>
<td>7,84,778</td>
</tr>
<tr>
<td>1964</td>
<td>4,26,776</td>
<td>3,41,575</td>
<td>7,68,351</td>
</tr>
<tr>
<td>1965</td>
<td>1,96,919</td>
<td>1,17,313</td>
<td>3,14,232</td>
</tr>
</tbody>
</table>

(Upon to September)

The Regional Transport Survey of Assam also emphasised this abrupt decline of traffic in 1965 by taking into account the traffic of five inland steamer companies as follows.

Table 2.7: Goods Traffic Carried by Five Steamers Companies

<table>
<thead>
<tr>
<th>Year</th>
<th>Imports</th>
<th>Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td>11.08</td>
<td>2.32</td>
</tr>
<tr>
<td>1964</td>
<td>82.71</td>
<td>0.26</td>
</tr>
<tr>
<td>1965</td>
<td>28.25</td>
<td>0.05</td>
</tr>
</tbody>
</table>

(Figures of exports relate to the Brahmaputra Valley only)

Apart from external aggression of 1965, the most important single factor affecting the river transport was the opening of the Brahmaputra bridge in 1962 which led to improvement in the position of road and rail transport in the State. In addition to this there

were some internal problems: the flats of the steamer companies were about 100 years old and there was no improvement in channel, terminal facilities and godowns etc. during the post-independence era.

Despite glorious record of services over long period, public complaints against the river transport, particularly the J.S. Companies, were not lacking. It was alleged that the terms and conditions of carriage laid down by the J.S. Companies, as recorded on the forwarding Notes, were onerous in comparison to the railways. The Companies limited the liability to the period of 24 hours after arrival of the goods at destination and not up to the expiry of the free delivery time allowed. Further, the J.S. Companies did not have proper storage facilities for increasing volume of traffic. It was also alleged that J.S. Companies refused open delivery simply to avoid liability for damages. The loss and theft of cargo while in the custody of the steamer companies was stated to be very high and the merchants were to bear the loss. "The incidence of theft of piece goods was highest and the contents were skilfully pilfered even from mill pressed bales without the hoops being tampered." 60 In case of pilferage merchants were doubly loser: first, merchants lost for short-delivery, secondly, the Customs Department penalised them for short receipt of goods in India on the inference that the goods were unlawfully sold in Pakistan. The Chambers of Commerce complained that the J.S. Companies refused to issue 'short certificate' and did not generally entertain claims for loss of or damage to articles either in transit or while in their custody. The merchants of Cachar alleged that 'agreed parties' got preference and that for imports to Assam foreign firms were favoured, and that cargo with lesser freights were neglected. The J.S. Companies, of course, adopted a system of quota and priority schedule which accorded with railway priority schedule also so that due share was

given to general cargo in addition to tea traffic. The State's economy suffered when the J.S.Companies left out goods tendered at wayside station owing to faulty coordination or management. Some of the Upper Assam merchants very convincingly deposed before the Lokur Committee that they suffered when their lorries were not allowed to unload and load goods at the ghats until all the lorries of the Companies (employed for transporting goods to and from tea gardens) had been disposed off.

It was also alleged that unlike railways steamer receipts were not issued by the J.S.Companies immediately after the goods were handed over to them and, as such, sometimes goods despatched from Calcutta reached Assam earlier than the steamer receipts themselves. There were other complaints like bad approach facilities, inadequacy of staff at ghats, delay in clearance of vessels and flats after their arrival, irregular stowing of cargo (especially sugar, cement, cloth and oil) and refusal to give weighment delivery. A careful analysis shows that the core of the complaints was inadequate carrying capacity. At the time of Lokur Enquiry, the J.S.Companies had six Despatch Steamer Sailings per week and two or three flat sailings per week as per traffic offering in Calcutta-Brahmaputra Valley route. But, inadequate capacity was reflected in the difficulties faced by merchants in the Cachar Valley, especially when there were breaches in the rail Link and consequent diversion of government sponsored cargo like cement, coal and fertiliser from rail to steamer. With reference to shortage of capacity for intrastate traffic Lokur Enquiry revealed that even at Gauhati cargo of 30,000 maunds per month was available for shipment to North Lakhimpur. But as the J.S.Companies could not lift it, the traffic had to take a very circuitous route by

road to Tezpur and then by country boats involving loss of time and wastage by way of handling at transhipment points. In regard to transit time it was found that on an average goods from Calcutta reached Gauhati, Silchar and Karimganj in 9 to 13 days but goods from Patna and other stations on the bank of the Ganges took two months from acceptance to delivery, reflecting the deplorable state of river services after independence.

Intrastate River Traffic

As in the case of interstate trade, in intrastate trade also river transport had natural advantage as evident from the length of navigable rivers.

Table 2.8: Navigable Length of Important Rivers in Assam (1961)

<table>
<thead>
<tr>
<th>States</th>
<th>Rivers</th>
<th>By boat</th>
<th>By steamer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>Brahmaputra</td>
<td>724</td>
<td>637</td>
</tr>
<tr>
<td></td>
<td>Subansiri</td>
<td>143</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>Barak</td>
<td>153</td>
<td>64</td>
</tr>
<tr>
<td>Total Assam</td>
<td></td>
<td>1,020</td>
<td>747</td>
</tr>
<tr>
<td>West Bengal</td>
<td></td>
<td>961</td>
<td>784</td>
</tr>
<tr>
<td>Orissa</td>
<td></td>
<td>438</td>
<td>42</td>
</tr>
</tbody>
</table>

According to the Inland Water Transport Department of the Government of Assam, in 1957 Assam had 44 rivers, the longest being the Brahmaputra (720 kilometres from Dibrugarh to Dhubri). As mentioned earlier, steamers used to ply from Dhubri to Desangmukh

62 Lokur, N.S.: Op. Cit., p.188
63 Central Water and Power Commission, Navigable Waterways of India, New Delhi, October 1961, p.119
(632 kilometres) and feeder steamers from Desangmukh to Dibrugarh (64 kilometres) till 1965. All other rivers except Kullong (Nowgong), Dehing (Lakhimpur now in Dibrugarh) and Katakhal (Cachar) are navigable by country boats for distances less than 160 kilometres and some are navigable only during the rainy season. The Inland Water Transport Department estimated that there were about 25 ferry crossings (about 12 crossings having power-driven boats) in the Brahmaputra river and about 300 ferry crossings in smaller rivers, mainly in the plains area. The most important ferry crossings were the Pandu-Amingaon crossing maintained by the railway administration and Tezpur-Silghat service by the J.S.Companies. Other crossings were managed by the Public Works Department or the Local Board or private parties. But the ferry services over the main rivers were spaced at considerable intervals and had great difficulty in adhering to schedules during monsoon for floods and during dry season for shifting sands.

There are various estimates of intrastate traffic and no accuracy can be claimed for these. In 1957-58, the Department of Economics and Statistics surveyed that about 0.7 crore ton miles of goods traffic were handled by boats in 19 ferry points on the Brahmaputra and ten rivers. The Techno-Economic Survey of Assam summarised the traffic dealt with in 1958 at 30 ghats on the Brahmaputra. It is noted on the basis of these data that Neamati, Bordutti, Gamiri, Bishnath, Tezpur and Dhubri were important for outward traffic while Neamati, Pandu and Gaughati Bazar ghat handled higher volume of inward traffic. The yearly internal traffic by steamer was, on the whole, about 1.3 lakh tons as against external traffic of about 7.5 lakh tons. Thus, the interstate traffic

by steamer stood at about 85 per cent as against intrastate traffic of about 15 per cent. In 1961 the Central Water and Power Commission estimated that "about 70 lakh maunds of different kinds of commodities were carried by boats every year in the waterways of Assam". According to Inland Water Transport Department of the Government of Assam about 27.5 lakh quintals of cargo move district-wise within the Assam Valley by river transport.

In regard to intrastate passenger service the J.S.Companies ran three passenger services, namely, Dhubri-Kholabanda, Guwahati-Tezpur-Neamati and Silghat-Pandu-Tezpur Ferry service. Although the J.S.Companies incurred yearly loss of about Rs. 8 lakhs on these services, the services were popular. During 1952-53, Gauhati-Tezpur-Neamati Express service carried about 1.5 lakh passengers and Dhubri-Kholabanda service carried about 1 lakh passengers. According to the Inland Water Transport Department of the Government of Assam, about 4 lakh passengers move district-wise at major ferry crossings within the Assam Valley by river transport.

The last phase of river transport in Assam may be discussed with reference to the Central Inland Water Transport Corporation which came into existence as a public undertaking, consequent on the winding up of operations of the J.S.Companies in May 1967, with a view to operate cargo services within Assam, between Dibrugarh and Jogighopa, and to Calcutta by river-cum-rail route with transhipment at Jogighopa, which is the terminus of the broad gauge railway line. The original idea was that traffic terminating on the broad gauge line at Jogighopa (such as cement, food-grains, fertilisers, salt etc.) was to be carried further inside the region by waterways and road services. And export traffic such as jute, tea and wax owing to

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different parts of India on the broad gauge railway system was to be carried up to Jogighopa by road and river. But there were many practical difficulties and the Corporation could not secure even cargo moving on Assam Government account. In fact, consignors do not prefer the river-cum-rail or rail-cum-river route as it involves transhipment at Jogighopa and consequent delay. The jute and tea industries and the traders in general have been depending more on the road and rail transport system as against the route via Jogighopa.

There is also allegation of apathy by railway. When with the extension of the broad gauge line the centre of importance shifted to Jogighopa, the railways agreed to accept cargo booked to Upper Assam or Calcutta by rail-cum-river route at this point. Although it was estimated that about 1,000 tonnes of cargo per day would be available at Jogighopa for movement by river route, there is hardly any significant traffic and the expectation that the river route would be an alternative channel for traffic to and from Upper Assam has been belied.

During the Third Plan only Rs.25 lakhs out of Rs.59 lakhs were spent on the development of this port. As reported to be observed by the Managing Director of the C.I.W.T.C., in 1970 the Corporation had 20 steamers and 50 flats with the carrying capacity of about 200 to 700 tons of goods. In addition to poor development of port facilities, there were other difficulties: about twenty flats were lying idle in Cachar which could not be brought to the Brahmaputra or to Calcutta via the erstwhile East Pakistan. Hence, the process of dismantling started and it was reported that in Assam flats and crafts worth Rs.7 crores were dismantled and sold.

The traffic potentiality at Jogighopa appears to be high if we take account of goods moving to river stations on Assam

66 The Dainik Assam (Daily) : January 7, 1970
Government account, cement from Assam Cement Limited, steel from Hindustan Steel Limited, fertiliser from Fertiliser Corporation of India at Namrup and crude oil from the Upper Assam to Bongaigaon. Moreover, if the scheme of 1 million tonnes of low grade iron ore capable of utilisation with non-coking Assam coals is put into effect, the C.I.W.T.C. will have much downward traffic of coal from Dibrugarh and upward traffic of finished iron for the entire 587 kilometres course of the Brahmaputra in Assam. Ultimately, a situation may arise when the C.I.W.T.C. may not be able to handle growing volume of traffic. The success of this route, however, depends to a great extent on the degree of cooperation from the railway administration and the achievement of operational economy through modernisation of fleets. The Committee appointed to study the organisation of river services calculated that the annual running cost of 12 steamers and 36 flats which were suitable for operation by the C.I.W.T.C. amounted to Rs.1 crore whereas the earnings from them were about Rs.8 lakhs only. The performance of the river services in Assam would also depend on port facilities at Jogighopa, construction of a floating dry-dock, setting up of a good marine workshop, acquisition of crane for loading and unloading of heavy cargo at Jogighopa, Pandu and Neamati and improvement of road approaches at main ghats.

It is only in the Third Plan that emphasis was placed on the development of river transport inside the State. We are quite hopeful of the economic viability of the recently proposed three schemes, namely, criss-cross express passenger-cum-cargo service on the Brahmaputra, a regular service between Silchar and Kachurbali (100 kilometres) on the Barak and a passenger-cum-cargo service from

67 The Assam Tribune (Daily): December 16, 1968
Badati to Dhansiri (56 kilometres) on the Subansiri river in view of traffic potentiality.

Road Transport

In the sixteenth and seventeenth centuries good roads (notably Dhodar Ali and Gosain Kamala Ali) throughout many villages in the Upper Assam were built by the Ahom Kings. After the fall of the Ahom power these roads became useless owing to lack of maintenance. As in the case of waterways, it was the tea industry which is greatly responsible for the development of roadways. "As early as 1845, the Assam Company claimed, with some exaggeration, that it had opened or repaired some 1,280 kilometres of public roads, had erected 266 bridges..." 68 It is claimed that for the first two or three decades of its existence the tea industry had to depend on its own efforts for any improvement of roads. The condition in the Surma Valley (Sylhet and Cachar) was even worse than that in the Assam Valley. By 1859, although the Public Works Department was yet to be born, the government started construction of roads in some places and the tea industry could use bullock carts and elephants to carry its traffic over short distances. The first notable work done by the Government was the construction of the Assam Trunk Road in 1866. Hunter stated:

"...the Assam Trunk Road was begun with the design of making it a first-class metalled and embanked highway, twenty-four feet wide, and aligned in a manner that should render it possible at any time to convert it into a railway. The first result of this conception was that more attention was paid to altering and trimming the existing roads to suit a railway alignment than to extending communications on their old bases. Many old roads, which, if they had been maintained and improved, would have answered all practical purposes to the present day were abandoned, and new roads were started on the model of railways". 69

68 Guha, A: Colonisation of Assam: Indian Economic and Social History Review, December 1967, p.290
Later on in 1870 when restriction was imposed on expenditure, the idea of a railway formation for the Trunk Road was given up and the main aim became to "connect the fragmentary portions of made road situated on the through route into a continuous trunk road and to extend it towards the Bengal frontier. However, the road was used only by cattle dealers, elephant catchers, coolies for tea gardens and pilgrims as all goods traffic of Assam was carried by the steamers.

With the establishment of the Public Works Department in 1868, the Government started giving more attention to the main roads. But it was after the establishment of the Local Boards in Assam in 1880 that real progress was made. However, paucity of finance and dearth of labour were the two serious obstacles in the way of good progress. In 1883-84 labour had, therefore, to be imported from Oudh and Rohilakhand for road works in the tea districts. In spite of some development, the roads were so bad in hill areas that people in Garo Hills often travelled "immense distance with loads of 80 to 120 lbs. on their back to the market villages". The Government, therefore, rightly emphasised the need for road building in hills to establish markets and develop trade as "roads and markets ought very speedily to create a social revolution in the hills". And Gauhati-Shillong road, opened for wheeled traffic in 1877, took two days to reach Shillong by a 'tonga'.

Even up to the end of the nineteenth century, complaints

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70 These boards, being entrusted with the responsibility for local construction, were financed by a cess on land as well as grants by the provincial government.
about roads were a regular subject in all the reports of the India Tea Association. In 1892, the Chairman of the Indian Tea Association complained that the district of Cachar could not boast of even a single good road of a mile in length. In fact, in the whole of the Surma Valley, communication by water competed with communication by road during the rainy season and that was why, less outlay was incurred on the roads than it was otherwise necessary.

It is interesting to note that even in these years of bad communication Assam had huge volume of traffic, amounting to about Rs. 13 lakhs, with the non-British territories like Hill Tipperah, Bhutan, Towang, Dafla Hills, Naga and Mishmi Hills, Lushai Hills, Manipur and Khampti Hills. Since 1896 cart traffic played most important role in trade of Assam with Manipur and the neighbouring areas.

In 1911 the Indian Tea Association urged the Government of Assam to give priority to the development of roadways. In 1912 with the re-formation of the Province of Assam, the Chief Commissioner put special emphasis on the development of communications. As a result not less than Rs. 41 lakhs were distributed as special grants for roads and rapid progress followed. Although prior to 1916 there was passenger service on the Gauhati-Shillong route, it was restricted because the Planters' Stores Limited, a foreign company, was mainly interested in goods traffic. Likewise, another attempt made by a Calcutta firm in 1916 to run passenger motor service on the aforesaid

73 G.O.A.: Assam Administration Report 1892-93, p.60
74 Allen, B.C.: Assam District Gazetteers, Naga Hills and Manipur, volume IX (1905), p.112
route met with poor result due to bad roads. It was only in 1922 that the first passenger bus service started between Jorhat and Jhanji in the Upper Assam and since then regular passenger service has been in vogue on this important route. Thus, prior to the introduction of motor service in 1922 mail and passengers to Shillong were carried on by 'tongas', pulled by horses. About 400 to 600 bullock carts (with 15-20 maunds capacity) were used everyday for carrying salt, cloth and other essentials to Shillong. In down trip, these carts carried potato, orange etc. at the rate of about Rs. 12 per cart.

Even in 1927 roads in Assam were in a horrible state; the roads were so bad that even bullock carts were stuck up in mud for many days in rainy season. At this time the most important step towards the rapid and continuous development of roads was the establishment of the Tea Rates Road Fund in 1927, out of the proceeds of an additional rate levied under the Assam local rates regulation on land under tea cultivation.

During the Second World War, road construction was accorded top priority to meet defence needs. Towards the end of 1942 when there was acute shortage of transport capacity owing to requisitioning of vehicles for military operations Assam Transport Organisation, a private enterprise, was set up with a few vehicles under European management and it expanded to a huge concern of about 400 vehicles and 1,100 employees within six months. During the War, about 90 per cent of its fleets were engaged in the Army work and only 10 per cent was available for civil supplies. But after three years of its birth, when the war operations declined, the Assam Transport Organisation

76 The fare was Rs. 18 per head and it took about 14 hours to reach Shillong. After every five miles horses were changed.
77 The Hindu (Daily): April 5, 1970
78 G.O.I.: Indian Road Development Committee 1927-28: Evidence, volume II, Calcutta 1928, p.312
was on the verge of liquidation. It was at this time that the Assam Government set up a Committee to go into its affairs. When this Committee recommended the retention of the Assam Transport Organisation the Government decided to remodel it and named it 'State Transport, Assam' with effect from 1948.

With partition in 1947, interstate and intrastate road transport assumed difficult shape: Garo Hills district was cut off from the southern part of Assam and the Cachar district continued to have a circuitous route to the Assam Valley and rest of India. In March 1948, road kilometreage per 100 square kilometres in Assam was much below the other states as well as the national average of 20 kilometres, as seen from the following Table.

Table 2.9: Road Kilometres per 100 square kilometres (March 1948)

<table>
<thead>
<tr>
<th></th>
<th>West Bengal</th>
<th>Bihar</th>
<th>Madras</th>
<th>India as a whole</th>
<th>Assam</th>
<th>Orissa</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>74.5</td>
<td>43.8</td>
<td>29.6</td>
<td>20.1</td>
<td>14.7</td>
<td>12.3</td>
</tr>
</tbody>
</table>

The position of the roadways in the hills was worse than that of the plains in the State. As early as in 1951, the State Government, therefore, very aptly remarked that the key to the development of the hill areas lies in the immediate opening up of

79 G.O.I.: Ministry of Transport: Basic Road Statistics (1951)

80 As many as 80 per cent villages in the Mizo Hills district were at a distance of more than 5 miles from jeepable road. For as many as 75 per cent villages, the road connecting the villages with the jeepable road was no other than foot-track. (G.O.A.: Department of Economics and Statistics: Report on the Second Round Socio-Economic Survey in Mizo District: 1963, p.14). In the Garo Hills about 90 per cent villages were away from jeepable road. (G.O.A.: Department of Economics and Statistics: Report on the Second Round Socio-Economic Survey in Garo Hills: 1962, p.12).
communications both within the areas and in linking them with important centres in the plains. It was found that the development of natural resources like coal and other mineral deposits in the hill areas, provision of adequate markets for the produce of the Tribal people and the essential supplies, all depended on good communication.

The condition of rural roads in Assam has also not been satisfactory. But from the point of view of length, it was reported that since 1955-56 the best record of growth of rural roads was noticed in Assam along with West Bengal followed by Madras. Apart from the length of rural roads, perhaps the most significant factor from the point of economic development is to note how many villages are away from surfaced roads. With the help of the following Table, we may analyse this factor.

Table 2.10: Percentage of Villages Away from Rural Roads in Assam District-wise (1967)

<table>
<thead>
<tr>
<th>District</th>
<th>Number of villages</th>
<th>Number of villages which are at a distance of 16 kms. or above from the surfaced road</th>
<th>Percentage of column 3 to column 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Goalpara</td>
<td>2,956</td>
<td>632</td>
<td>21.4</td>
</tr>
<tr>
<td>Kamrup</td>
<td>1,999</td>
<td>516</td>
<td>25.8</td>
</tr>
<tr>
<td>Darrang</td>
<td>1,627</td>
<td>102</td>
<td>6.2</td>
</tr>
<tr>
<td>Cachar</td>
<td>1,575</td>
<td>181</td>
<td>11.5</td>
</tr>
<tr>
<td>Khasi &amp; Jaintia</td>
<td>1,456</td>
<td>743</td>
<td>51.0</td>
</tr>
<tr>
<td>Lakhimpur</td>
<td>1,382</td>
<td>112</td>
<td>8.1</td>
</tr>
<tr>
<td>Mikir &amp; North</td>
<td>1,115</td>
<td>378</td>
<td>34.0</td>
</tr>
<tr>
<td>Cachar Hills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sibsagar</td>
<td>1,093</td>
<td>317</td>
<td>29.0</td>
</tr>
<tr>
<td>Garo Hills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morigong</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mizo Hills</td>
<td>133</td>
<td>42</td>
<td>31.6</td>
</tr>
</tbody>
</table>

This Table shows that in many districts between 25 to 50 per cent of villages are away from good roads, reflecting the poor transport condition in rural areas. However, the road kilometreage (including National Highways) in Assam is almost doubled during the last fifteen years from 11,773 kilometres in 1956 to 21,810 kilometres in 1970. The total length comes to about 25,000 kilometres if extra 3,000 kilometres of motorable roads managed by local bodies are included. This implies that about another 10,000 kilometres of road are to be completed within 1981 if all India Road Development Plan target of 35,200 kilometres of road is to be achieved.

Most of the roads in Assam are, however, sub-standard, with narrow way, weak bridges and bad surface which cannot take heavy traffic. In 1970 Assam had 26 per cent of surfaced roads, being equivalent to only 2 per cent of surfaced roads in the country. The surfaced roads per 100 square kilometres came to 4 kilometres in Assam as against 18 kilometres in West Bengal and Mysore, 31 kilometres in Tamilnadu and 50 kilometres in Kerala and 9 kilometres in the country as a whole. Apart from interstate, there have been significant intrastate variations: the length of road kilometreage per 100 square kilometres being 33 in Kamrup as against 9.1 in Jaro Hills, 7.1 in United Khasi and Jaintia Hills and 4.7 in North Cachar Hills, as found by the Regional Transport Survey.

From the point of industrial development the most important road link between Assam and the rest of India is the National Highway No.31, which connects Gauhati (Assam) with Burhi (Bihar) via Siliguri and Cooch Behar. In April 1964 with the opening of four major concrete bridges on the National Highway No.31 ferry crossings were no longer necessary which was a significant step for development of

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84 The Regional Transport Survey (1967) commented that the gross weight of the diesel trucks were about 12-13 tons but most of the bridges were capable of receiving only 9 tons.
road transport. Another road from Bareilly to Amingaon (about 200 kilometres in length) under construction, known as Lateral Road, is expected to provide an alternative link to Assam. Further, the National Highway No. 37 runs (for 680 kilometres) from Panchratna on the south bank of the Brahmaputra (opposite Jogighopa) to Saikhowa-ghat in the eastern-most part of Assam, along the south bank of the Brahmaputra. It touches all tea and oil bearing regions. The National Highway system in the eastern region, in fact, connects all the important towns. Despite all these, the length of the National Highway in Assam is poor (6.7 kilometres per thousand square kilometres) in comparison to many States/Union Territories such as Delhi (48.6 kilometres), Haryana (15.8 kilometres), West Bengal (15.7 kilometres) and Kerala (10.8 kilometres). In addition, to the National highways the five State Highways also touch important towns of Assam.

The outlay on roads in Assam has been about 13 per cent, 12 per cent and 5 per cent of the total Plan expenditure during the First, Second and Third Plans respectively. The importance of good road for an economy like Assam, rich in forest resources, needs emphasis as the transport cost constitutes about 20 to 25 per cent of the value of timber, to mention one product, in the market.

As in other states, private and public sectors have been playing their respective role in various ways in road transport in Assam. With a view to do away with the then existing ill-organised, inefficient and monopolistic road transport in the private sector as well as 'to raise the productivity of transport as earning proposition and as one leading to the industrial and general development of the State', the policy of state-management and ownership of road

85 G.C.I. : Basic Road Statistics
The growth and development of the State Transport, initially set up in 1948 as a departmental undertaking and subsequently as a Corporation in March 1970 may be evident from the following Table.

**Table 2.11: Development of State Road Transport**

<table>
<thead>
<tr>
<th>Year</th>
<th>Length of nationalised route (kilometres)</th>
<th>Gross capital investment (Rs.)</th>
<th>Number of persons employed (millions)</th>
<th>Fleet of vehicles (bus, employed)</th>
<th>Daily average number of goods carried (tons)</th>
<th>Daily average volume of goods carried (quintals)</th>
<th>Net fleet of trucks, cars</th>
<th>Net fleet of goods carried (mills)</th>
<th>Net fleet of passengers (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948</td>
<td>120</td>
<td>Rs. 1.37</td>
<td>701</td>
<td>150</td>
<td>1,064</td>
<td>3,880</td>
<td>Rs. 0.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td>3,195</td>
<td>Rs. 52.30</td>
<td>4,000</td>
<td>* 757</td>
<td>33,000</td>
<td>5,500</td>
<td>** Rs.</td>
<td>(-)</td>
<td>6.7</td>
</tr>
<tr>
<td></td>
<td>(1,203 in Hills)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(* in 1970 there were 712 scheduled services daily covering about 60,000 kilometres; ** in 1970-71)

The first nationalised passenger service started in January 1948 between Gauhati and Nowgong, a distance of 120 kilometres. From this modest beginning, the State Transport has been expanding steadily mainly, catering to the needs of passenger traffic. The longest passenger service is in the Gauhati-Tinsukia route (480 kilometres). In 1968-69 the State Transport carried about 12 millions passengers in the State. Of the goods traffic handled, the most noteworthy was the daily traffic of about 250 tonnes of cement from the Cherra Cement Factory to Gauhati. It also operates services on the Silchar-Aijal road - the only route to the entire Mizo Hills area. The importance of Silchar-Shillong service lies in the fact that it is the only route which connects...
It is claimed that the State Transport opened new services on uneconomic routes, where traffic-offering has been inadequate because of backwardness of the area, and cost of operation has been high owing to bad roads, merely to facilitate economic development of these areas. For example, the Shillong-Silchar-Aijal route involves an annual expenditure of about Rs.4 lakhs against yearly earning of Rs.15,000 only. It is interesting to note that the State Transport Organisation introduced a passenger service between Aijal and Lungleh (208 kilometres) from December 1954 with the help of jeeps. The operation cost of Jowai-Garampani alternate service was also very high. By 1970 (January) about 34 express services in addition to 8 long distance services connected 29 important towns of Assam as evident from the Map 2. Moreover, it is contended that the net profits of the Department amounted to Rs.301.50 lakhs, after adjustment of depreciation and interest, till March 1969. It is further maintained that the Organisation has been contributing about Rs.60 lakhs a year to the State exchequer by way of taxes, duties and interest on capital to finance development projects. This may be considered to be significant in the context of the fact that this Organisation raised the passenger fare only once during the last 22 years up to 1970 and that the rates compared favourably with those of other State Transport undertakings. Again, in the interest of economic development, the State Transport had been carrying the cement of the Assam Cements Limited (a state enterprise) from Cherrapunji factory to Gauhati (156 kilometres) at a nominal rate.

88 The Assam Tribune, January 16, 1970
89 It may be noted here that Haryana's passenger fares were also low - 2.6 paise per passenger-kilometre on metalled roads and 3.2 paise per passenger-kilometre on unmetalled roads (in 1965). (N.C.A.E.R.  Techno-Economic Survey of Haryana 1970, pp.124-125)
of Rs.34 per ton (or less than 22 paise per tonne kilometre) against the government approved rate of Rs.48. Further, concessions have been provided to potato growers in Khasi and Jaintia Hills, coal truck owners of Shillong and students. If we take into account all these factors, the impact of road transport on the economy of the State has been increasingly felt over the period.

The Central Road Transport Corporation, an innovation of the post-Chinese aggression period (November 1962), is to organise and ensure movement of essential commodities to Assam through roadways. During its first year of operation in 1962 the Government of India decided to run about 50 trucks (although about 250 trucks were actually needed) between Siliguri and Dhubri (a distance of about 310 kilometres). The main reason for such provision was that beyond Siliguri the railway found it difficult "to cope with the strain". The intention of the Government was not to disturb the private trucks running between Calcutta and Assam but merely to supplement their services adequately to meet Assam's requirements. In view of the unprecedented situation developed in the entire northeast India because of the Chinese aggression as well as the strike by the Pakistani crew of the J.S.Companies, the importance of the C.R.T.C. was well realised. As contended by the C.R.T.C.:

"... in addition to providing an essential service in a strategic area and imparting a measure of stability to market rates for goods transport in that area, the Corporation has made a financial contribution of Rs.3.88 lakhs to the public

90 However, this is still higher than the maximum freight rates (by road) prevailing in Haryana in 1970 - which were 78 paise per truck-kilometre on metalled roads and 94 paise on unmetalled roads. (N.C.A.E.R. : Techno-Economic Survey of Haryana,1970, pp.124-125)

Even in Bihar (in 1959) government fixed rates were 75 paise per lorry load per mile or 2 pies per maund per mile for goods transport. (N.C.A.E.R. : Techno-Economic Survey of Bihar, volume I,1959,p.66)

91 The Assam Tribune, January 16, 1970

92 Lok Sabha Secretariat : Lok Sabha Debates (Third Series), Appendix I, (Third Session 1962),p.203 (Answer to S.N.Q.No.4 dated December 4, 1962, Column 4213)
exchequer at the Centre and in the States by way of Income Tax and Motor Vehicle Tax, besides interest and dividend on the Central Government capital invested ..." 93

The impact of the Corporation on the economy of Assam is expected to be significant, as apart from helping military authorities, the Organisation has intensified its service in the State and neighbouring areas.

As in other parts of India, private road transport has been playing important part in the economy of Assam. One important consequence has been creation of employment opportunities to the order of more than half a lakh. 94 As regards traffic handling, it is stated that

"approximately 5 crore ton-miles of long distance goods traffic along the important road routes of the plains districts of the state had been handled by the private vehicles (excluding bazar buses and trucks owned by the tea gardens) during 1957-58". 95

Owing to absence of accurate data it is difficult to state precisely the rate of growth of goods traffic by private road transport. Even the Regional Transport Survey could not find out the rate of growth and it simply tells us the direction and volume of traffic on the basis of a week-long survey at certain focal points. The Survey revealed that the road transport system handled an average volume of 50,790 tonnes 96 of goods per week within Assam, 44,907 tonnes (88.4 per cent) being the intrastate traffic. Only 11.6 per cent (5,883 tonnes) was interstate traffic. In case of the

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96 However, even in a state like Madhya Pradesh, with less developed transport facilities the trucks of the state carried about 15 million tons of varied traffic - both intrastate and interstate in 1960. (N.C.A.E.R. : Techno-Economic Survey of Madhya Pradesh, 1960, p.137)
neighbouring state of West Bengal also about 85 per cent of the total commodity flow was found to be intrastate flow. Thus the private road transport has played more important part in intrastate traffic than interstate traffic. The commodity movement was dominated by a few items such as foodgrains, coal, mineral oils, tea, timber, building materials, cement, iron and steel, and miscellaneous products. And Assam imported more commodities from other states than what she exported. So far as the direction of interstate commodity flow was concerned, 81 per cent of flow was with West Bengal, 3 per cent with Bihar, 8.72 per cent with Nagaland, 5.13 per cent with Manipur, 1 per cent with North East Frontier Agency, and rest with Tripura, Delhi and Uttar Pradesh.

Perhaps Assam is the only state in India which is heavily dependent upon a neighbouring state, to an extent as high as 81 per cent. In case of West Bengal, the approximate contribution of various states in the total interstate flow was: Bihar 61 per cent, Uttar Pradesh 29 per cent, Orissa 6 per cent, Delhi 4 per cent, Maharashtra 2 per cent and other states 3 per cent. In case of West Bengal coal, iron and steel machinery overwhelmingly composed the total volume of interstate flow. But as in case of Assam exports appeared to be less than imports. And the largest volume of flow was with Bihar owing to heavy import of coal from that state.

So far as Assam is concerned, amongst all the routes, National Highways 31, 34, 37 and 40 had higher volume of traffic. Within the State different sections of roads had different traffic densities depending on the nature of traffic.

The presence of substantial volume of intrastate road traffic indicates that the railways are preferred to road transport mainly for long distance traffic.
98 G.O.W.B.: Ibid., pp.15-18
A careful perusal of the findings of the Regional Transport Survey reveals that the peak densities on sections of the National Highways were all recorded on the south bank of the Brahmaputra. In the North Salmara and Bongaigaon section of the National Highway No.31, which is the only road route for interstate traffic, the maximum density recorded by the week-long survey was 606. Considering from this point it can be concluded that road transport did not have a prominent part in the interstate traffic movement and it catered mainly to the short distance intrastate or inter-district traffic. In case of long distance traffic cost was high. It was the road transport which during 1970-71 carried essential foodstuff on government account alone to the tune of about 90,000 quintals from Silchar to Mizo Hills areas.

Air Transport

Amongst the alternative modes of transport, air transport has a special significance owing to peculiar topography and geographical location of Assam. The potentiality of air transport came to light by the end of 1949 when Pakistan prohibited transhipment of cargo to Assam by waterways. However, even before 1949 the quantum of traffic transhipped from Calcutta by scheduled and chartered air companies was about 1,50,000 pounds a day. Most of these were destined for Guwahati. The imports were consumer goods, medicines, machinery, and the main exports were orange, tea, 'supari' and 'tejpat'. By 1954 the traffic increased to 7,50,000 pounds per day. In these years air transport played an important role in difficult areas like

100 This figure indicates the number of goods vehicles only (seven days average) both 'up' and 'down'. (C.O.A. : Regional Transport Survey, Op. Cit., volume I, pp.145 A-145 B)
101 It may be noted that the cost of road transport was as high as Rs.3 per maund between Imphal and Dimapur rail head (216 km) and the cost by air transport was Rs.0.47 per pound between Calcutta and Imphal.
102 Anwar, M. : Civil Aviation in India, Calcutta (1954)
Sheila (Khasi Hills) in exporting oranges, the main source of income.

By 1958, the total air movement to and from Assam was calculated to be about 2,300,000 miles. During 1958, 840,000 miles were operated by the Indian Air Lines Corporation from Gauhati to Calcutta, Tripura and the Upper Assam. The freight service and the freight-cum-passenger services to and from Assam stood at about 9,30,000 miles and 4,30,000 miles respectively during the aforesaid period. In 1959, the interstate traffic flow was dominated by newspapers (1,90,000 pounds) and handloom products (7,000 pounds). As the imports to Assam were greater than the exports, the bulk freight rates were generally higher for incoming traffic (about 0.18 paise per pound for imports and 0.9 paise per pound for exports). The air companies carried considerable volume of tea traffic (1,77,000 pounds in 1957) to Calcutta at low rates.

In 1959, the Government of India stated that the Indian Air Lines Corporation was running a large number of services both passenger and freight in Assam area and that the losses incurred on the Assam area were the heaviest, about Rs.21 lakhs a year, in passenger services. This loss was mainly attributed to the competition that existed between the Indian Air Lines Corporation and private operators, which carried about 30 to 40 per cent of the total air freight in 1959. It must, however, be admitted that private operators were specially suited for the task which the Indian Air Lines Corporation could not accomplish. Of all the 8 small operators, Jamair pilots had the distinction of making 803 emergency flights in

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104 Lok Sabha Secretariat: Lok Sabha Debates, volume XXXI, No. 62, May 6, 1959, column 15190
difficult monsoon months to provide the tea industry with foodstuff, 105
furnace oils and other important items. Till 1958 it was only
the private operators who could move in difficult areas. It was
admitted by the government that approximately 1,665 tons of
freight was lifted by non-scheduled operators in the N.E.F.A. area
during two years ending February 1958 and the Indian Air Lines
Corporation commenced operation in this area only from February
1958. In fact, air transport played a more important part than
any other mode of transport in supplying essential consumer goods
to this area from three points in Assam, namely, Jorhat, Mohanbari
and North Lakhimpur. Up to June 1967 the Kalinga Air Lines and
thereafter the Indian Air Force did the transportation operation
in this area. About 14 to 15 flights of 3 tonnes each, were to be
performed every day. With the development in this area, air-
maintained centres are converted to land-maintained posts and it
appears that in future years road transport will have to play a
bigger role than any other mode of transport. It may be noted that
during 1970-71 the air transport moved from Silchar and Jorhat
about 50,000 quintals of different foodstuff to Mizo Hills areas.
During this year the airdrop quota of the Indian Air Force in the
Mizo Hills was about 6,400 tonnes. Despite its utility the air
transport could not be afforded at all times owing to heavy freight
rates. Moreover, the 'distributive capacity' of the air transport
was also small.

At present Calcutta is connected with important towns like
Gauhati, Dibrugarh, Tezpur, North Lakhimpur, Jorhat, Silchar in
addition to other towns of neighbouring states such as Pasighat

106 Lok Sabha Secretariat: Lok Sabha Debates, March 11, 1958
(Arunachal), Imphal (Manipur), Agartala (Tripura). In spite of the introduction of Boeing 737 passenger services since 1971, the air transport has not been adequate for meeting the needs of increasing volume of passengers, mail and goods to and from Assam.

Pipelines

During the Second World War pipelines had a glorious record when petroleum was a major item in the movement demand in Assam area. As the railways had certain inherent difficulties, such as transhipment from broad to metre gauge, limited capacity of the wagon ferry and shortage of cistern wagons, pipeline had to be devised as an alternative mode of transport. Between 1943 and 1945 two systems were installed.

"Two American pipelines were laid from Calcutta to China, following the rail and road routes. A British pipeline ran from the port of Chittagong via the Hill section and Manipur Road to Kalewa on the bank of the river Chindwin in Burma. Both these projects were really great achievements about which little has been written." 107

In recent years the significance of pipeline lies in the fact that it has reduced the strain on the rail and road transport. It has also done away with large scale empty movement of rail tankers. Moreover, it is found to be the least costly mode of transporting crude oil. At optimum throughput, or with heavy concentration of deliveries, the cost of transportation of petroleum products through a 16 inch pipeline in India is about 2.3 paise per tonne kilometre, whereas it is 3.3 paise per tonne kilometre by through goods train on broad gauge and about 4.7 paise in case of


(Water transport also played important part in movement of petroleum so that during the War period the strain on the railways was reduced as far as possible to avoid many precautions essential in the carriage of petroleum in Assam area.)
metre gauge. By tank trucks the cost is still higher ranging between 12.3 to 14.7 paise per tonne kilometre. This cost factor is of great importance particularly in an economy where movement of mineral fuels accounts for as much as 25 to 40 per cent of total railway operations. In fact, the pipeline has the lowest cost or charge with the exception of large ocean tankers. Where considerable quantum of movement is involved, pipeline is competitive with inland water transport.

The first major pipeline in Assam (shown in Map 3) was commissioned in December 1964 for transporting crude oil from Naharkatiya and Moran oilfields, which produce about 3 million tonnes of crude oil annually, to refineries at Gauhati and Barauni. This 1,157-kilometre pipeline, owned by the Oil India Limited, was constructed at a cost of about Rs. 46 crores including foreign exchange component of about Rs. 15 crores, in two stages. In the first stage, there is a 16-inch pipeline, from Naharkatiya in the Upper Assam to Gauhati (400 kilometres) with four pumping stations, delivering 0.75 million tonnes of crude oil to the Gauhati refinery. In the second stage, a 14-inch pipeline runs from Gauhati to Barauni (about 752 kilometres) with five pumping stations, delivering 2 million tonnes of crude to the Barauni refinery. Thus, the pipeline can transport 2.75 million tonnes of crude a year, that is, 7,550 tonnes a day, up to Gauhati and thereafter 2 million tonnes a year.
to Barauni. The annual throughput of this pipeline can be increased, if so desired, to about 4 million tonnes. There are other two crude pipelines: one from Naharkatiya oilfields to Digboi refinery (owned by the Oil India Limited) and the other from Lakua to Moran (owned by the Oil and Natural Gas Commission). Among the two product pipelines, one is from Digboi to Tinsukia (owned by the Assam Oil Company) and the other is from Gauhati to Siliguri (about 420 kilometres) constructed by the Indian Oil Corporation and commissioned in October 1964 to transport white products (motor spirit, superior kerosene, high speed diesel, light diesel oil et al.) to the refinery. This product line has successfully moved the surplus products from Assam to Siliguri. There is one more pipeline to transport natural gas from Naharkatiya to Namrup (16 kilometres), owned by the Assam Gas Company.

The impact of pipeline can be gauged from the transportation of various items mentioned above, such as crude oil, petroleum products and natural gas, which has reduced the strain on railways and other modes of transport to the extent of about 7,550 tonnes a day and to this extent the empty movement of tank wagons on the railways has also been avoided.

Other Modes of Transport

Amongst other alternative modes of mechanised transport mention may be made of the Goalpara Tramway near Kachugaon, where a

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2. It may be noted here that the crude petroleum and petroleum products pipeline mileage in the United States is nearly equal to the mileage of railway lines; the natural gas pipeline mileage is nearly 3 times that of railway lines. And the costs of transporting various chemicals in pipeline in most instances are found to be less than by other modes of carriage. (Jones, C.F. and Darkenwald, G.G.: Economic Geography 1965, pp.755-756)
length of 2½ miles was laid out in 1901-02. By 1911-12 the length increased to about 20 miles and by 1913-14 steam traction was sanctioned. By 1924-25 the net outlay on the tramline was about Rs. 2.80 lakh. The main aim of the line was to move timber from Goalpara forests to the E.B. Railway and thereby facilitate the development of timber trade in the area. In 1934, its length was about 72 kilometres and moved about 4,00,000 cubic feet of timber. As it was mainly a forest line its impact on distant areas was not perceptible. There was also another tramway, the Singri-Panchgiri River Tramway in the district of Darrang which was managed by the steamer companies.

Owing to peculiar topography, the setting up of ropeways in hilly areas of Assam has been very much talked about. The Committee on Transport Policy and Coordination reported that "in the eastern region there are at present 28 ropeways with a total length of 120 kilometres and installed capacity of 2,447 tonnes per hour", the largest capacity being in the district of Dhanbad in Bihar and Burdwan in West Bengal. Unfortunately, Assam has no ropeway to add to these figures. The Government of Assam has been suggesting to the Planning Commission that a ropeway from Cherrapunji (or Shelia) to...

113 A plan was also worked out in 1880-81 for a Bicycle Tramway at Dibrugarh as an experiment to connect steamerghat with the town. The project was to run trucks on two wheels ranged longitudinally under the centre on a single wooden rail, the trucks being kept from falling by cross-bars, held by four men, who also give the motive power. It was tried in the Guwahati Jail for earthwork, with a lead of 100 to 200 yards, and was successful. (G.O.A.:Assam Administration Report 1880-81, p.159) By 1881-82 the need for a tramway from Siliguri to Meesa was also felt mainly for tea traffic. The Report of the Public Works Department, Eastern Bengal and Assam for 1906-07 also shows that there was a proposal for the construction of a light tramway between Shillong and Guwahati on the Renard System.

114 Ropeways consist of buckets hauled by moving cables along stationary cables supported by towers which are erected about 150 metres apart.

Pandu is justified in view of potential annual goods traffic of different varieties like oranges, potatoes, betel nuts, pan leaves, tezpat or may leaves, vegetables and coal, totalling not less than 1.5 lakh tonnes. There is also scope for a ropeway between Siju in south Garo Hills and Dolgama (a river point on the south bank of the Brahmaputra) or Goalpara for exporting limestone, timber and coal to profitable markets. Apart from assuring economic price to the producers, the low transportation cost makes ropeway construction a viable proposition. It is to be noted that the cost of transport from Sheila to the plains (say, Gauhati) along the ropeway would be only Re. 1 per maund as against Rs. 9 a maund through the existing mode of transport. In other words, the cost of transporting goods would come down from about Rs. 26 to Rs. 3 or 4 a quintal with the provision of ropeway, since the distance will be almost half of that of roadways. For all these reasons, the State Government proposed to construct a ropeway from Sheila to Pandu in two phases. Later on the project was not taken into hand as its actual cost was found to exceed the estimated cost.

To sum up, as in case of many countries, river transport developed in Assam much ahead of other modes. And it greatly facilitated the development of tea industry in particular and the area served in general. However, it had periods of stress and strain and the organised river service would not have appeared in Assam in the middle of the nineteenth century had there been no rail competition in the Ganges area. The growth of river transport is the result of both competition as well as coordination with rail transport. Before the advent of railways it was the river transport which rescued

the nascent tea industry. It also helped the initial development of railways in Assam. While the steamer's role was more prominent in the Brahmaputra Valley, boat transport played its important role in the Surma Valley. By the close of the last century, the share of railways in export and import trade of Assam was only about 7 percent (by value) and the railways helped more in imports than in exports. As in the Second War period, the post-partition (1947) era was also a busy time for river transport owing to absence of an all-India rail route. The J.S. Companies handled both interstate and intrastate traffic and had advantage over other transport operators although there were complaints from various directions about their activities. The river transport on the whole handled more traffic than the railways as the riverways carried more than 50 per cent of the total inward and outward traffic of Assam till 1965 when the Pakistan trouble and the natural calamities completely brought the steamer services to halt. The internal traffic by river was on the whole about 15 per cent of the total traffic and hence there is scope for developing inland river service to handle this traffic. Although the C.I.W.T.C. has belied all expectations owing to various reasons the State Inland Water Transport Department may play an effective part in handling growing volumes of intrastate traffic by early implementation of new schemes.

The development of roads also to a great extent is the result of the efforts of the tea industry. Although the Assam Trunk Road came into existence in 1866, progress started only after 1880 with the establishment of the Local Boards. And during the War time, road construction was given priority. Immediately after the partition of 1947, Assam had low road kilometreage as compared to many states and the position in the hills was worse. Many villages in different districts were away from good roads and the length of roadways...
from district to district. The development of private and public road transport speeded up with the opening of the Brahmaputra bridge in the 1960's. Although the State and National Highways have touched many areas in Assam the length is poor in comparison to many states. The private road transport companies, handling both interstate and intrastate traffic, have now been playing a more conspicuous role than the public road transport organisation (now the A.S.R.T.C.) which handles mainly intrastate traffic; yet the service rendered by the State Transport was remarkable. The C.R.T.C. is also trying to supplement the transport capacity since 1962.

Air transport has special advantage in an area like Assam with vast topographical difference, and the private air companies and the Indian Air Lines played magnificent role in far-off hilly areas like Mizo Hills (and the erstwhile N.E.F.A.) in supplying essentials both in peace and troubled times.

In recent years pipelines, which carry crude and petroleum products to destinations within and outside Assam, have greatly helped reducing the strain on railways and carrying traffic at a lesser cost and their impact may be felt further after some years.

Assam had also tramways in forest areas to handle timber traffic but a ropeway between the hills and the plains has not yet come into being despite its suitability.