AN EVALUATION OF RAILWAY INFRASTRUCTURAL DEVELOPMENT IN NIGERIA

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Abstract

A virile rail transportation system plays a significant role in the sectoral development and overall growth of any economy. There have been significant changes in railway systems throughout the world. There have been considerable modernizing and updating of equipment to enable railways fulfill their role more effectively. However, in Nigeria, rail transport has had a stunted growth over the past 100 years when compared to railways in the developed world. There has been a continuous decline in its performance over the years with attendant operating deficits in its accounts. Almost five decades after independence, the Nigerian railway system remains static in structure and is highly unresponsive to the emerging socio-economic and political challenges. Hence the railway system no longer exerts a strong influence nor plays a competitive role in modern Nigeria. This paper aims at evaluating railway infrastructural development in Nigeria. Thus, the paper examines the historical development of Nigerian railways and discloses the efforts made at revitalizing the Nigerian railway system. It also reveals the infrastructural deficiencies of Nigerian railway by analysing the volume of passenger and freight traffic carried by the Nigerian Railway Corporation from 1959-2009 and showing the sections of Nigerian rail track overdue for renewal. Data were obtained through secondary sources coupled with review of literature. This paper reveals that within the last 50 years, the highest number of passengers carried was 15.6 million in 1984 while the lowest was 0.7million in 2006. The maximum tonnage of freight hauled was 3,003,000tonnes in 1961/62 while the minimum was 36,758 tonnes in 2007. Hence, there is the need for urgent revitalization of railway system in Nigeria for economic transformation and integrated national development.

Key words: Infrastructure, Development, Railway, Transportation, Revitalization.

Introduction

A virile rail mode of transportation plays a significant role in the sectoral development and overall growth of any economy. It opens up regions, hinterlands and rural areas by facilitating agricultural development as well as the growth of cottage/large scale industries. Also, it attracts residential, commercial, educational and recreational activities and development around its axis (Nwanze, 2002). Railways are one of man's important means for transporting passengers and freight. Almost every country has at least one railway. In total miles of main-line routes, the leading countries are the United States, the former Soviet Union, Canada, India, and Australia. In freight hauled, the leading countries are the former Soviet Union, the United States and Canada. In passenger service, the leading countries are Japan, the former Soviet Union and India (Luther, 1979).

In the first half of the last century, railways enjoyed unchallenged domination of both freight and passenger traffic movement in Nigeria while road transport, now a competitive threat to the railways, was initially developed to feed them (Olanrewaju, 1986). Nigerian railways have played an immense role in the country's socio-economic development, helping to open up the hinterland, providing impetus for foreign and domestic trade, agricultural and industrial development as well as stimulating rapid urbanization. Through two World Wars and one Civil War, the Nigerian Railway System sustained the sovereignty and security of the fatherland. In the days of the Marketing Boards, Nigerian Railway was responsible for clearing the groundnut pyramids and facilitated the export of hides and skin, tin, bauxite, etc. as well as import of hardware and general goods into the country. Prior to the era of transportation through pipelines, railway was pre-eminent in fuel distribution (Nigerian Railway Corporation, 1998).

The Nigerian Railway Corporation (NRC) renders both passenger and cargo services in Lagos. The passenger services involve the movement of commuters from the northern part of Lagos State towards Iddo and Apapa in particular, at cheaper rates than is possible with the road system. Also passengers are carried from Iddo and other stations within Lagos district of NRC by express train to the northern parts of the country. The cargo service involves the transportation of farm produce and bulky raw materials from the hinterlands to the southern parts of the state. For this service, there is the Lagos-Idogo farm produce cargo train that mainly carries vegetables, fruits, cassava and maize. There is also the Iddo-Apapa bulky raw materials coach that conveys raw materials to the Apapa port (after arriving at Iddo from the hinterland) for exportation.

Unfortunately for the railway, there has been a continuous decline in its performance over the years with attendant operating deficits in its accounts. Almost five decades after independence, the Nigerian railway system remains static in structure and is highly unresponsive to the emerging socio-economic and political challenges. Hence the railway system no longer exerts a strong influence nor plays a competitive role in modern Nigeria. During the last 30 years, there have been significant changes in railway systems throughout the world. There have been considerable modernizing and upgrading of equipment to enable Railways fulfill their role more effectively. However, in Nigeria, rail transport has hardly developed at all over the past 100 years when compared to railways in the developed world. The 3,505 km coverage of rail services in Nigeria is low in a country with a land area of 924,000km^2 and a population of over

140 million. The colonial masters who began the construction of railway lines in the country adopted the narrow gauge that does not allow speedy transport of goods and services. At the time the railway track was built, speed was not considered important. The purpose of the railway was to ensure the haulage of the country's agricultural and mineral resources to the port for eventual transportation to Britain and the rest of Europe. However, with the current huge number of commuters in Nigeria begging to be served, it is high time the country developed its rail system as a means of mass and fast movement of people and goods.

Literature Review

Rail transport has been continuously developed through innovations, technical and commercial changes, while railway speed records are being constantly improved upon. For instance, portions of the French high-speed rail system can reach speeds up to 515km/hr (Rodrigue and Slack, 2009). International Labour Organization (1994) stated that for intercity travel, medium and high-speed rail travels constitute the first valid alternative to car and air travel in the increasingly congested road and air route networks. Some key factors promoting high-speed rail is that airports and highways have no room to expand, and are often overloaded while high-speed rail has the potential for high capacity on its fixed corridors, and has the potential to relieve congestion on the other systems (URL 1). However, the railway system in Nigeria when compared with those in advanced countries of the world, still plays an insignificant role in urban mass transit and transportation as a whole. It is necessary that a mass transit system like the light rail transit be constructed for the efficient transportation of commuters (Okanlawon, 2006).

Historical Development of Nigerian Railways

The general objective of railway construction in Nigeria between 1898 and 1927 was partly to maintain links between the central seat of colonial government in Lagos and other parts of the country. It was also intended in the words of the Act setting up the Nigerian Railway Corporation to engage as "carriage of passengers and goods in a manner that will offer full value for money, meet cost of operations, improve market share and quality of service, ensure safety of operations and maximum efficiency, meet social responsibility in a manner that will meet the requirements of rail users, trade, commerce, industry, government and the general public (Nigerian Transport Profile, 1993). Initially, the Nigerian Railway Corporation was part of the civil service until 1955 when it became a public enterprise by an Act of Parliament (no. 26) of 1955.

Development of the rail industry was promoted by the discovery of coal in Enugu in 1914 and that led to the construction of the rail line from Port – Harcourt to Enugu which facilitated the export of coal through Port-Harcourt. In a way, the history of the Nigerian Railway system epitomises the history of geographical area now known as Nigeria. The amalgamation of Northern Nigeria and the Southern Protectorates in 1914 had a parallel in the amalgamation of Lagos Government Railway and the Baro – Kano Railway in 1912 when the Nigerian Government Railway was established (Nigerian Railway Corporation, 1998).

Commencing in 1989 with 193km snaking from Ebute Metta to Ibadan, at a cost of £100,000 per mile, the system which was steam – driven until the mid 1950s experienced continual extensions viz. Ibadan to Jebba 295 km 1901 – 1909; Kano to Baro 562 km 1907 – 1911; Jebba to Minna

255 km 1909 – 1915; Port-Harcourt to Enugu 243km 1914 – 1916, Enugu to Makurdi 220 km 1916 – 1924; Kaduna to kafanchan 179 km 1922 – 1927(see Table 1). In the thirty-one years from 1927 to 1958 there was no railway development. Further development from 1958 took the tracks from Kafanchan to Bauchi in 1961 (238 km) and ultimately to Maiduguri in 1964(302) km.

TABLE I: The Development of Rail Construction in Nigeria

Section	Year	Distance
Lagos – Ibadan	1898 – 1901	193 km
Ibadan – Jebba	1901 – 1909	295 km
Kano – Baro	1907 – 1911	562 km
Jebba – Minna	1909 – 1915	225 km
Port – Harcourt – Enugu	1914 – 1916	243 km
Enugu – Markurdi	1916 – 1924	220 km
Kaduna Junction – Kafanchan	1922 – 1927	179 km
Kafanchan – Jos	Opened to traffic in 1927	101 km
Kuru – Bauchi	1958 – 1961	166 km
Bauchi – Gombe	1961 1963	166 km
Gombe – Maiduguri	1963 – 1964	302 km
Ajaokuta – Warri	Under construction	277 km
Port – Harcourt – Onne	Under construction	19 km

Source: Nigeria Railway Corporation (2002)

The Nigerian Railway Corporation is 112 years old and it runs a unilaterally designed track system of 1067mm narrow gauge. Only 30km of its track distribution is in double track (within Lagos area). Nigerian Railway System actually commenced rail business activities with the construction of the first rail line from Lagos to Ibadan (193km) between 1898 and 1901. By 1964 when the construction of 640km Kano-Maiduguri rail line, then known as Bornu extension, was completed, the present core of the railway network had been put in place. Presently, the Railway system is made up of 3505 route kilometres and 4332 track kilometres. In addition to this is the 19km 1067mm gauge extension from Port-Harcourt to Onne deep sea port and the 277km standard gauge rail construction of 1435mm from Ajaokuta to Warri. Out of the 3505 kilometres of rail network, 1055 kilometres consist of curved track, thus making the maximum permissible speed on the rails to only about 65 kilometres per hour, whereas the main line locomotives are calibrated for speeds of 110 kilometres per hour. However, most of the tracks (rail, sleeper, ballast and the formation) are damaged and are overdue for replacement (see Table 2). The poor condition of the track reduces efficiency and may lead to derailment.

The dilapidated nature of the present railway infrastructure was caused by years of neglect by successive governments which accorded the railway system a very low position in its programme. On a macro-level, the problem of the railway today is after-effect of the collapse of the agrarian economy. The decline in agricultural produce in the early 70's, was a consequential effect of the discovery of oil/petroleum. The result was the absence of appeal and interest in the business of agriculture which was our economic mainstay contributing about 93% of our national income and providing well of 75% of Nigeria's total working population.

Table 2: Sections of Track Overdue for Renewal

Section	Length/km	Year Due
Ilorin-Jebba	154	1981
Offa-Jebba	141	1981
Jebba-Minna	258	1963
Zaria-Kano	140	1982
Kano-Nguru	230	1963
Ifo Junction –Idogo	63	1963
Minna-Baro	179	1963
Kuru-Maiduguri	640	1990
Iddo-Agege	18	1963
Apapa-Ebute Metta Junction	7	1990

Source: NRC: Facts and Figures (2006) and NRC headquarters (2008).

The reduction in agricultural activities following the emergence of petrol economy led to low output of agricultural produce necessitating redundancy in the existing rail facilities because of capacity under utilization. Secondly, agricultural activities were no longer attractive thereby necessitating a shift in attention and government policies. With petrol, the government's capital expenditures would obviously have geared toward providing infrastructure to facilitate exploration and exploitation of the new economic gold. This development led to large constructions of refining plants, laying of pipelines, procurement of technology – capital equipment plus expertise.

Being that the agricultural sector is the biggest sectoral market for the survival and growth of the railway corporation, therefore in a macro view; the ailing railway had its pathological history traceable to the dwindling agricultural activities occasioned by government's neglect of them (Nigerian Transport Profile, 1993). However, the government has regretted the neglect of yesteryears and a programme to resurrect the rail system is being fashioned out (Nigerian Transport Profile, 1993). The Federal Government has proposed to construct the following new lines: Port-Harcourt- Onne narrow gauge (1067mm), to connect the Onne port-19km long, the Lagos-Abuja Express Line, the East –West Rail line, the Kaduna –Abuja Rail line, the Minna-Abuja line, the Ajaokuta-Otukpo Rail line and the Ajaokuta- Baro Rail line (Abubakar, 2002)

Efforts aimed at rehabilitating the Nigerian railway system

Efforts aimed at rehabilitating the Nigerian railway system to enhance its performance included technical cooperation between the NRC and the Rail India Technical and Economic Services (between 1979 and 1982) and the China Civil Engineering Construction Corporation (between 1995 and 1999). These agreements centered on improving rail tracks and communications facilities; rehabilitation of existing locomotives, coaches and wagons as well as supply of new ones; and re-opening of hitherto closed routes.

Also, a twenty-five years strategic development plan was rolled out for the Nigerian Railways, by the Federal Executive Council on the 13th of November, 2002. The development plan budgeted to cost $60 billion, is expected to be funded mainly through multilateral grants and private sector investment. The action plan will be executed in three phases. Phase one will involve system transition and will be executed from 2002 to 2007. Phase two has system

modernization and is expected to terminate by 2015 after commencing 2007. Phase three, termed system stabilization, will last till 2027, the expected terminal date of the strategic plan. Moreover, on the 30th of October 2006, the Federal Government and the China Civil Engineering Construction Corporation (CCECC) signed an $8.3billion contract for the construction of a standard gauge railway line covering 1,315km from Lagos to Kano.

In Lagos State, in order to meet the city's long-term requirements, the Lagos Metropolitan Area Transport Authority (LAMATA) has developed plans for a seven-line rail network totalling no less than 246 km, which is due to be completed by 2025(see Figure 1). The first stage comprises two lines which are to be built by 2011. The two rail lines are the Red Line (Agbado to Marina) and Blue Line (Okokomaiko to Marina). The Red Line is a 31-kilometre rail route designed to have a six-kilometre spur to the Murtala Muhammed International Airport while the Blue line would span 27 kilometres. The two lines would meet at Iddo and be taken over the lagoon to Marina by a suspension bridge to be specially constructed for that purpose (Alao, 2008). With the plans for the Red and Blue lines well underway, longer-term proposals are taking shape for a further five lines - Green, Yellow, Brown, Orange and Purple lines to complete the 246 km network by 2025 (Mobereola, 2008). However, the design of the long-awaited mass transit rail project has been completed, thus paving way for the construction of the project with immediate effect.

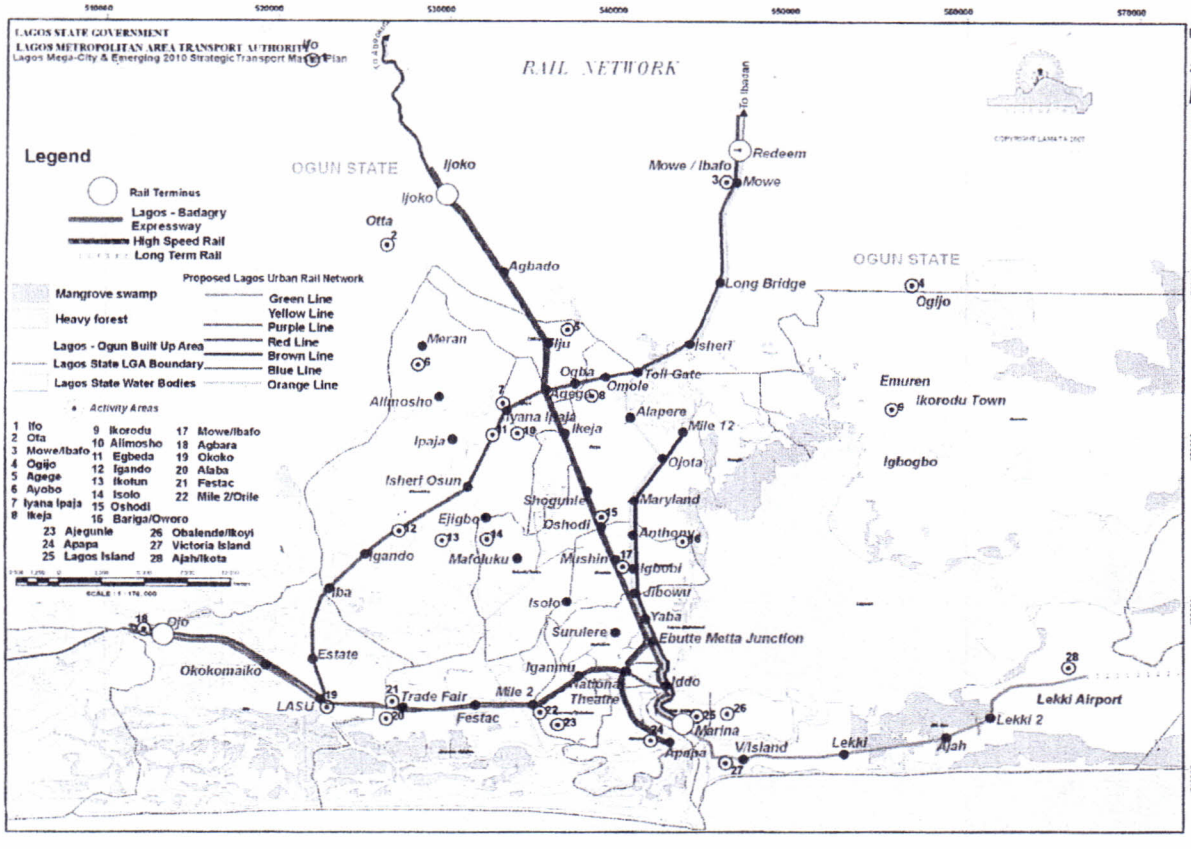

Figure 1: Proposed Lagos Urban Rail network

Source: LAMATA, 2008

Methodology

For the purpose of this study, secondary data were obtained from Nigerian Railway Corporation (NRC). The data collected were presented in Tables 1-4. Relevant information on the infrastructural development of railways in Nigeria was also obtained from textbooks, articles, reports, and internet.

The following secondary data were utilized in this study:

- The development of rail construction in Nigeria (presented in Table 1).
- Sections of track overdue for renewal (presented in Table 2).
- The number of passengers carried by NRC for the period 1959-1969(shown in Table 3 and Figure 2).
- The number of passengers carried by NRC for the period 1970-2009(shown in Table 4 and Figure3).
- The tonnage of freight hauled by NRC for the period 1959-1969(shown in Table 3 and Figure 2).
- The tonnage of freight hauled by NRC for the period 1970-2009(shown in Table 4 and Figure 3).

Findings/Discussion

The number of passengers carried by NRC declined from 12million in 1962/63 to 8million in 1968/69 while the tonnage of freight hauled also declined from 3,003,000tonnes in 1961/62 to 1,614,000tonnes in 1968/69(Table 3 and Figure 2). As shown Table 4 and Figure 3, the number of passengers showed a downward trend from 11.6 million in 1982 to 0.9 million in 2002 while freight haulage steadily declined from 2,185,000 tons in 1982 to 98,192 tons in 2002. Within the last 50 years, the highest number of passengers carried was 15,553,000 people in 1984 while the lowest was 708,802 in 2006. The maximum tonnage of freight hauled was 3,003,000 in 1961/62 while the minimum was 36,758 tonnes in 2007. The passenger patronage increased from 784,491 in 1994 to 2,889,977 in 1995 as a result of the rehabilitation project that was undertaken by the China Civil Engineering Construction Corporation(CCECC) which started in 1995 (Mazda, 2002). The volume of goods lifted by the railway increased from 107,878 tonnes in 1995 to 1,513,077 tonnes in 1998, but plummeted to only 40,624 tonnes in 2009 due to locomotive failures and because of the ongoing track rehabilitation that hindered movement of freight traffic from Lagos area, which is the major freight traffic zone. In 2008, a total of 1,996,324 passengers were carried but this declined to 1,285,080 in 2009 because of poor performance of locomotives and the ongoing track rehabilitation being carried out by CCECC which started in 2009. Though there has been a downward trend in the performance of Nigerian Railway Corporation over the years in terms of passenger and freight haulage, it should be mentioned that the passenger traffic has a better performance than freight traffic (Okanlawon, 2011).

Table 3: Volume of Passengers and Freight carried by NRC (1959-1969)

Year	Passengers carried	Freight Tonnage
1959-1960	7,991,000	2,803,000
1960-1961	9,822,000	2,722,000
1961- 1962	11,061,000	3,003,000
1962-1963	12,006,000	2,760,000
1963-1964	11,288,000	2,960,000
1964-1965	10,630,000	2,834,000
1965-1966	11,621,000	2,884,000
1966-1967	10,005,000	2,481,000
1967-1968	6,916,000	1,868,000
1968-1969	8,007,000	1,614,000

Source: NRC Annual Reports (1954/55 to 1973/74)

Table 4: Volume of Passengers and Freight carried by NRC (1970-2009)

Year	Passengers carried	Freight Tonnage
1970	8,942,000	1,311,000
1971	6,151,000	1,311,000
1972	5,819,000	1,519,000
1973	5,131,000	2,129,000
1974	4,342,000	1,098,000
1975	6,755,000	1,612,000
1976	7,491,000	1,452,000
1977	6,747,000	2,375,000
1978	6,750,000	1,592,000
1979	6,771,000	1,543,000
1980	4,917,000	1,153,000
1981	9,638,000	1,932,000
1982	11,612,000	2,185,000
1983	13,142,000	1,619,000
1984	15,553,000	1,458,000
1985	11,324,000	1,182,000
1986	9,878,000	852,000
1987	7,383,000	353,000
1988	4,196,000	326,000
1989	6,520,000	202,000
1990	6,345,000	198,000
1991	3,443,000	237,000
1992	1,747,000	204,000
1993	1,502,000	106,000
1994	784,491	106,000
1995	2,889,977	107,878
1996	2,626,026	137,661
1997	2,946,940	535,000
1998	1,070,424	1,513,077
1999	1,788,171	737,239
2000	2,610,435	116,837
2001	1,284,022	132,813
2002	942,594	98,192
2003	1,608,447	56,178
2004	1,751,159	62,575
2005	752,842	84,652
2006	708,802	41,495
2007	1,478,700	36,758
2008	1,996,324	47,409
2009	1,285,080	40,624

Source: NRC Headquarters (2003-2010)

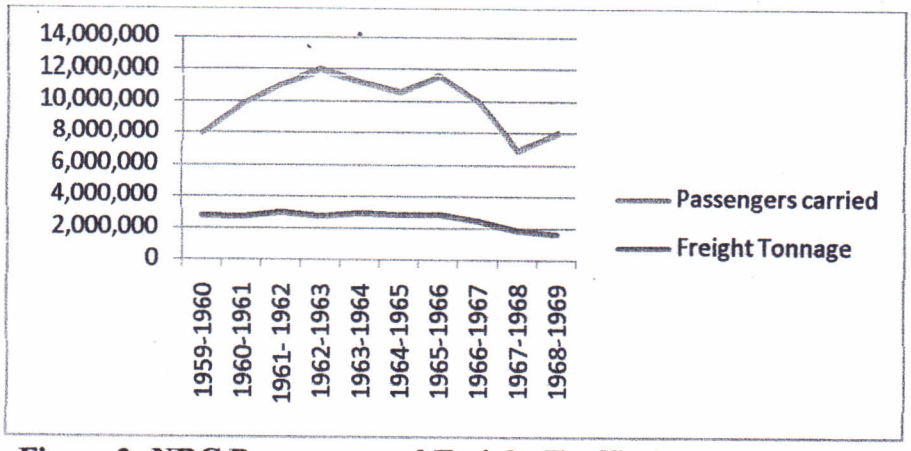

Figure 2: NRC Passenger and Freight Traffic (1959-1969)

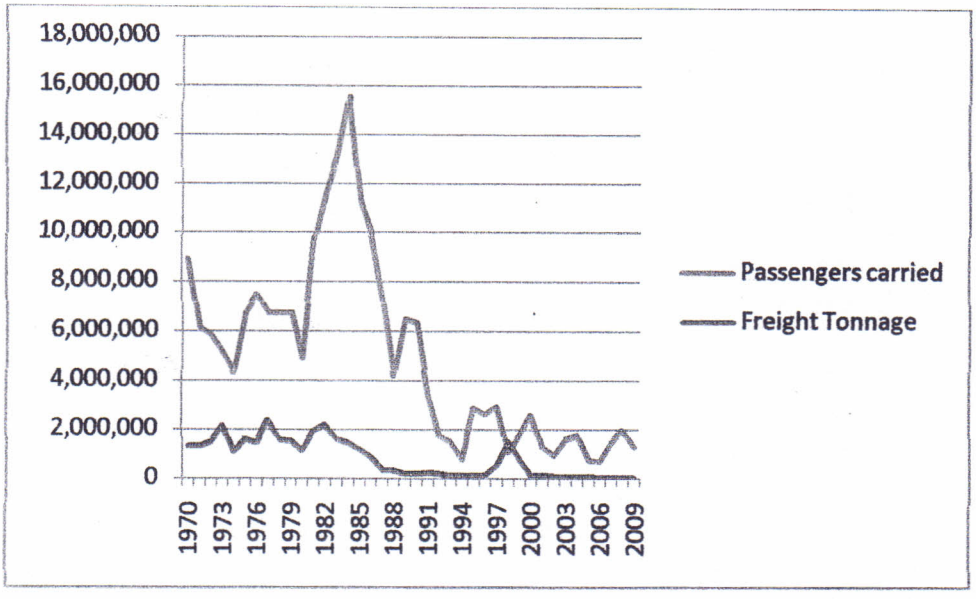

Figure3: NRC Passenger and Freight Traffic (1970-2009)

Conclusion

Within the last 50 years, the highest number of passengers carried by Nigerian railway was 15,553,000 in 1984 while only 1,285,080 passengers were carried by Nigerian railway in 2009. There is the need for urgent revitalization of railway system in Nigeria so as to curb the remarkable downward trend in the volume of passengers and freight carried by NRC over the years and to prevent the total collapse of the railway sector.

The Federal Government should urgently repeal the Nigerian Railway Act of 1955 to allow private participation in the development and operation of rail transport in Nigeria. If the Federal Government continues with its moves to revitalize the railways and does not curtail its expenditure on the railway system, Nigeria will have a safer, faster, more reliable and efficient railway characterised by better management and in time increased demand.

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