CHAPTER-4

INTERNATIONAL EXPERIENCE IN RAIL PRICING

4.1. Japan Railways

Study of Japan Railways shows how reorganization, privatization, deregulation and innovation has catapulted the Railways into a profitable and efficient venture, There are many lessons to be learnt for Indian Railways.

The first Railway line in Japan was opened in 1872. The network was owned partly by the public sector and partly by the private sector. The first nationalization took place in 1906-07. Subsequently in 1949 the Japanese Railways were reorganized as a public corporation called Japanese National Railway (JNR) which almost completely monopolized the Railway services till its privatization and division in 1987. The division split JNR into six independent passenger Railway companies and one freight company. The passenger Railways own their own infrastructure whereas the freight is carried on infrastructure of the Japanese Railways. In addition to the six passenger Railways there are many private Railway companies which many provide local transport. Depopulation of Railway areas has forced private Railways to

close their rural operations and focus in urban areas. The private Railways invariably play a large role in urban transit.

4.1.1. Comparative analysis between 1965 and 1998

In 1965 there were 103 passenger Railway services operating on 26,179 KM of track. JNR is the largest corporation owning 20,376 (78% of total track). By 1998 the number of companies increased by 43 to 146 operating a total track length of 27,179 KM. Many of these were financed by public private partnership in which municipalities played an important role. The basic structure has not changed much since its privatization.

In 1965, total rail rider ship was 15.8 billion journeys of which 6.7 billion (43%) were on JNR trains. In 1998, the journeys increased to 22.1 journeys of which JRs accounted for 8.7 billion journeys (40%) meaning that the private players increased their share by 3%. In 1965, Railways handled 255 billion PKM of which JNR accounted for 174 billion PKM (68%). This increased to 389 billion PKM, where JNR accounted for 243 billion PKM (62%).

Railways carried 51% of total traffic in 1965 but only 26% in 1998. The decline is much sharper in passenger KMs, from 67% in 1965 to 27% in 1998.

In 1965 Railways carried 9% of all freight tonnage in Japan which reduced to 1% in 1998. The main reason is the decline in bulk cargo (coal, cement, etc.) and a modal shift in transport from rail to truck. In 1998, rail freight in Japan totaled 22.9 billion TKM, 99% of which was carried by JR freight (84% containerized and 16% bulk). Other private Railways carried less than 1% of freight.

Table 4.1

Comparison of some Parameters of Japan Railways : 1965 and 1998

Parameter	Unit	1965	1998	Variation	
				Absolute	*Percentage*
Passenger Services	No.	103	146	43	42%
Track	KM	26179	27179	1000	4%
Total Passenger Journeys (JNR)	Billion KM	6.7	8.7	2	30%
Total Passenger Journeys (Pvt.)	Billion KM	9.1	13.4	4.3	47%
Total Passenger journeys	Billion KM	15.8	22.1	6.3	40%
PKM (JNR)	Billion PKM	174	243	69	40%
PKM (Pvt.)	Billion PKM	81	146	65	80%
Total PKM	Billion PKM	255	389	134	53%

Freight traffic carried on Rail	%age	51	26	-25	-49%
Freight tonnage of Japan carried on Rail	%age	9%	1%	-0.08	-89%
KM/Employee (Total)	KM	7300	31600	24300	333%
KM/Employee (JNR)	KM	6400	33,100	26700	417%

In FY 1998, the operating revenues of all passenger transport systems was Y6.35 trillion, operating expenses were Y5.38 trillion, thus giving an average operating balance of 118%. The operating balance varied from 745 to 1455 for JRs and 595 to 124.5 % for municipal subways. The companies need to pay interest on capital investment which prohibits high operating balance. The productivity, measured in terms of running distance of rolling stock per employee, has increased from 7300 km in 1965 to 31,600 Km in 1998. For JNR this figure increased from 6400 KM to 33,100 KM.

4.1.2. Non-Railway Revenues

Non-railway business has formed an important revenue stream in Japanese Railway system. In many cases railway has built houses and land alongside the track which compensated for operational losses. However, this cannot be continued forever partly due to

change in land usage policy over a period of time and mainly due to land depletion. Japan Railways have once again innovated and now focus on development of resorts, hotels, departmental stores etc. In fact the revenues from rail and bus operations account for only 20% of the total revenues.

Japanese Railways followed a system of deregulation and the latest policy initiatives envisage change of license regime to permission system under which government cannot reject an application without giving open and good reasons.

4.1.3. Fare Fixation

From 1949 to 1977 the JNR fares were determined by a debate in the Diet. This was one of the chief causes for deepening deficit as opposition parties resisted any increase in fares. The fares of private companies were regulated by the minister of transport under the principle that fares should recover all costs. In 1977, the government permitted JNR to raise fares according to the same principles as applicable to private players.

Major private Railways use rate-base calculation system in which capital costs are determined systematically using an asset scale for rail services. On the other hand smaller private companies use

the cost plus system to cover incurred costs including capital costs. The model to be used by JR was debated and most of the JRs used the cost plus system. In 1997 the yardstick approach was introduced to regulate fares. Under this scheme, strict cost review was done before raising fares. Since 2000, the compnies have been given greater freedom to fix fares. In the old days any increase in fares were vehemently opposed by the passengers. Gradually they realized that rail companies also need to function in a business like manner and fare increase became more acceptable.

About 60% of passengers travel by using commuter or student passes but revenues from these tickets account for only 28% of ticket sales. Thus 72% of ticket revenue comes from the sale of ordinary tickets sold to the general public. This seems illogical because season ticket holders use the trains during the peak times during which actually higher prices should be charged. The three main JRs raised fares in 1996 but the three remaining have never raised fares.

4.1.4. Subsidy

Government policies do not permit private Railways to make profits while receiving subsidies. However, where construction takes

place to reduce congestion the companies can levy a supplement of 10% for 10 years during the construction phase itself. No corporate tax is charged for the same. This is an innovative way to procure funds upfront using tariff as a tool. Another Government assistance measure involves interest-reduction subsidies for construction loans where part of interest is paid by Japan Railway construction Public Corporation. However, interest rate regime being rather soft this does not have much value.

Despite all these efforts, the share of rail traffic is low. Government is calling for a modal shift of freight from trucks to trains as means to reduce the harmful emissions.

4.2. European Railroads.

European Railways are unique in more than one sense. Firstly, the services are offered across countries and do not terminate at the political boundaries. Secondly, they have shown adroitness in dealing with competition from Low Cost Airlines and have shown great appetite for innovation. Once again there are many lessons for Indian Railways.

With the advent of low cost airlines, intramodal competition between railroads to offer services throughout the European Union

it has become pertinent that new and innovative methods be used to increase revenues. Financial well being is a sin qua non for the existence of any enterprise and this forces the organization to look beyond the conventional models of cost reduction and revenue enhancements. The strategies applied by European Railroad can be broadly grouped in four categories:

1. Reducing operating costs
2. Yield management
3. Reducing perceived ticket costs
4. Increasing revenues by providing amenities.

The above strategies have been implemented primarily by adopting the following two approaches discussed in sections 4.2.1 and 4.2.2 respectively.

4.2.1. Applying pricing strategies to their existing networks.

Introduction of LCA airlines put a competitive pressure on the railroad industry. The pinch was all the harder as rail companies had sunk in huge sums in infrastructure improvement and high speed trains. France's national rail transporter (SNCF) has estimated that rail lost nearly 4% of its modal traffic between Paris

and Southern France within two months of the introduction of LCA, Easy Jet service. A survey in airports in Germany showed that 20% would have traveled by rail and another 13% would have considered traveling by rail if LCA was not available.

Impact of LCA is appreciable especially because rail exhibits strong economies of scale meaning thereby that marginal cost of carrying additional passengers is very low. Thus loss of passengers though results in fall in revenues but does not have any impact on cost reduction.

The LCA model which ate into the share of Rail traffic can be summarized as reducing operating costs and increase load factor by yield management. Yield management uses pricing strategies to manage seat sales wherein a limited number of seats are sold at low price and prices are raised as seats are filled and as it gets closer to travel date.

The implementation of yield management on railways is more difficult and complicated than on LCA's primarily because it is an open system. Deutsche Bahn introduced a yield management technique called PEP in 2003. Under this system the KM based tickets were replaced with point to point tickets which offered base fares as well as early booking discounts. The base fares were fully

changeable whereas the discounted fares were for specific trains. High penalties were fixed for cancellations and rebooking (cancellations from €15 to €30 and rebooking for €45). The PEP system was complicated and restrictions brought about bitter complaints from passengers and PKMs fell by 7% in the first half year of 2003. The PEP was later amended into a simpler programme.

In contrast to the German experiment, France's TGV, Eurostar and overnight services and Austrian Railroad's Sparschiene used yield management on specific trains where reservations were to be made for specific trains and it was easier to practice yield management.

In an interesting market research in Germany it was found that customers generally felt that rail fares were higher than LCA prices. For example on the Berlin-cologne route customers perceived that rail ticket were 43% higher than LCA prices though the average price in actual was 28% lower. Thus there were two perception mistakes, one that airlines tickets were less expensive than what they actually were and two that rail tickets were more expensive than what they actually were. This impression was primarily because of aggressive advertising by LCA about their

lowest fares. Railroads have started following similar strategy and have started special fare sales to promote low cost travel and also change perception. As a follow up of the above, DB introduced a €50 ticket valid for one day for free travel anywhere in the country and 1 million such tickets were sold within 5 hours.

However, pricing is not purely money but depends upon convenience, flexibility, punctuality, preference, purpose etc. thus pricing strategies need to be explored, quickly evaluated and corrective action taken for continuous revenue enhancement. France and Italy followed the path of creating new subsidiaries of their national railways to experiment with the new ideas.

4.2.2. Organizing new subsidiaries to offer new services (France and Italy).

The second approach was explored primarily because it was felt that Yield management is difficult to implement in the existing structure which often leads to customer confusion and even losses. The second approach permits on one hand the concurrent continuance of existing services and on the other experiment with new innovative mechanisms. The new subsidiaries also thus work as incubators. Secondly it creates a distinction in the minds of the customer regarding a new service which helps in acceptance of

new rules, fares, policies etc. In 2004, France's SNCF and Italy's Trenitalia started subsidiaries to take on the LCA.

The new service of SNCF started its service from 6.12.2004 and was named iDTGV and created primarily to fight the competition with LCA. With the success of the first service, a second iDTGV service was started in June 2005,. The iDTGV is a duplex double decker train coupled on to the standard TGV train. It offers only 8000 seats per week which is only 2.5% of the 300,000 seats offered by TGV per week. The upper deck provides entertainment like DVD consoles, games deck, massage parlors, spa etc and improved food services. The lower deck is for peace loving people where use of cell phones is forbidden and eye mask, neck pillow and earmuffs are sold to the passengers.

Tickets can be purchased 6 months in advance (in contrast to normal trains where ARP is 2 months). Tickets cannot be cancelled but journey date can be changed up to 24 hours before departure time by paying €10 and tickets are checked at the platforms and there is no TTE. The iDTGV does not offer standard service and the normal discounts and concessions were also not available.

About 10% tickets are sold for as low as €19 and the fares are increased stepwise to regular fare of € 88.80. In the first two

months about 57000 tickets were sold and the internet site recorded 2,60,000 visitors during this period. The target average load factor of 75% was crossed in the first year which was more than the 70% load of normal TGV trains.

Surveys showed that about 84% of passengers were satisfied with the service. About 60% of these passengers would have preferred to fly or drive if this service was not available which showed that thus cannibalization of existing customers was small. A new clientele was also created. Buoyed by the success of the initial two corridors, more new services were started.

The iDTGV appeals to the class of people who want to pay small amount for the basic transport but are willing to shell out more for the luxury or utility items depending upon their needs. In order to attract these customers extensive marketing is done, stimulating travel demand by creating a perception of low pricing in the minds of potential customers. The innovative part of the strategy is to generate additional revenues by providing wide range of attractive supplementary services. The customer's perception of having saved money in basic transport inveigles him to spend money on these services.

Similar experiment was done by Trenitalia by starting its first TrenOK service on 12.12.2004. Train fares between Rome and Milan were fixed at €9, €19 and €25 compared to regular Eurostar fare of €46. It is a no frills service, slightly slow but very cheap. This has attracted a new class of passengers and robust sales of tickets have been reported. The TrenOK service in contrast to iDTGV is a low level functional service with no supplementary with the focus of cost cutting across various functions.

4.3. American Railroads

The American Railway system consists of two distinct networks with unique organization and business models for passenger and freight traffic. The passenger system has not risen to fight the competition from LCA whereas the freight rail system has with great agility adopted new techniques, improved productivity and is touted to be the best freight rail system in the world. Understanding the functioning of these two rail systems can give some important insights for the benefit of Indian Railways.

4.3.1. Amtrak

The National Railroad Passenger Corporation, or Amtrak, was formed on May 1, 1971, as a quasi-public corporation to manage a

basic national rail network and operate trains under contracts with the railroads. It was created by an Act signed by President Richard Nixon on October 30, 1970. As of 2010, Amtrak had network in 46 states and about 500 destinations covering a distance of 21,000 route miles. Wyoming, South Dakota, Alaska and Hawaii are excluded.

According to Republicans in the U.S. Senate, Amtrak has received over $21 billion in federal tax dollars to cover operating and capital costs since 1971 and looses more than $700 million annually.

Amtrak's total passengers equal less than 1 percent of the traveling U.S. public. In contrast, Britain, France and Germany all have passenger rail systems that account for about 6 percent to 8 percent of total annual passenger travel miles.

Amtrak's premier service, the high-speed Acela Express, averages 82 miles per hour (132 km per hour) although it can hit 150 mph (241 kph) in parts of Rhode Island and Connecticut. By contrast, Japan, France and Germany have developed nationwide rail systems capable of speeds of 150 mph (241 kph) to 185 mph (297 kph) on dedicated tracks with sophisticated signaling systems designed for high-speed trains.

Amtrak thus seems to have frozen in time and needs an impetus to rise from the moribund state that it has gone into to become once again the first choice of the travelling masses specially keeping in view the environmental concerns where Railway scores highly over road transport.

4.3.2. America's Freight Rail System

When the railroad restructuring was being explored, the U.S. rail model opted for "vertical integration," in which a railroad generally owns the track and also operates trains over that track. The U.S. model has resulted in huge productivity gains, sharply lower average rail rates, and massive reinvestment by railroads back into their systems. From 1980 through 2010, U.S. freight railroads reinvested some $480 billion — more than 40 cents out of every revenue dollar — back into their networks.

The main alternative to the vertical integration model is the "open access" model, in which multiple railroads operate over tracks they do not own. The right-of-way i.e. track is owned by the government or a government-approved manager. Argentina and Mexico considered restructuring their rail industries adopting the "open access" regime but this was met with an overwhelmingly negative response from potential investors who were not interested in

committing funds to railroads if competitors could appear at any time and capture the economic benefits of those investments. Investors realized that in a capital-intensive industry like railroading, "open access" simply entails too much risk for private investment. Investors also recognized that "open access" would make it more difficult to operate a railroad efficiently and profitably due to government interference and a lack of coordination between infrastructure investment decisions and operational goals. Where open access has been implemented, additional rail-to-rail competition has been slow to develop and problems have abounded. As Mercer Management Consulting, a firm deeply involved in rail restructurings all over the world, testified at a U.S. Senate hearing, "No country has been successful in implementing [open] access without providing significant and, in some cases, unexpected government subsidy of rail service."

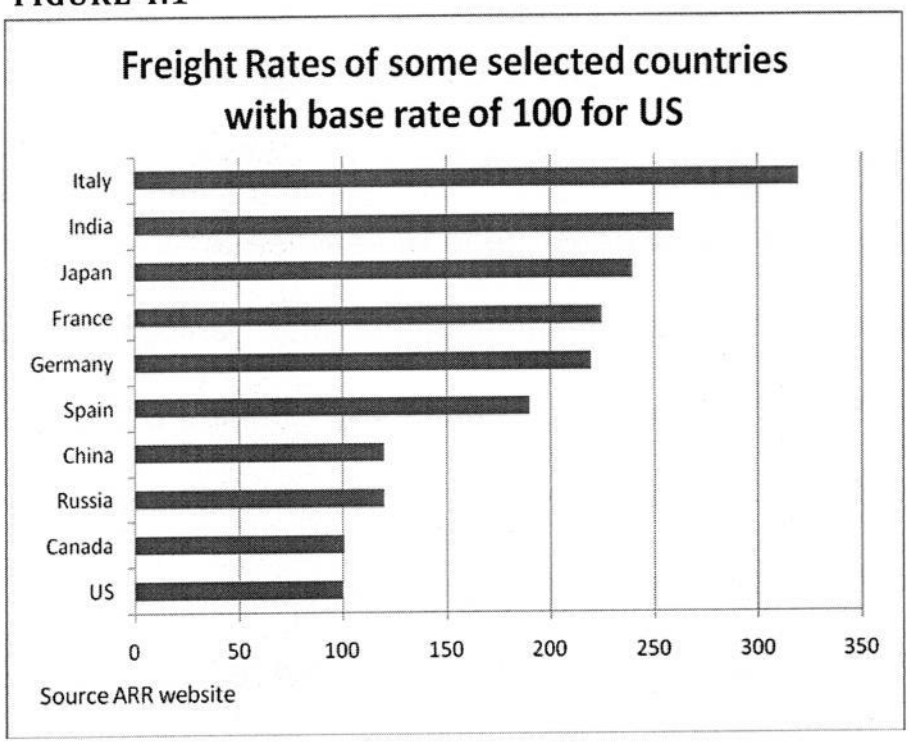
4.3.2.1. ARR-Status in the World

As per a document available in the ARR website, the U.S. freight railroad industry is touted to be the envy of the world. The United States features among the top countries in terms of various parameters like miles of freight railroad, the condition of rail

infrastructure and equipment, the amount of freight carried by rail, rail productivity, and other key rail-related measures.

According to data from the World Bank and other sources, U.S. freight rail rates (measured by revenue per ton-mile) are half those in major European countries and well below China and Japan as well, Figure 4.1. As the World Bank's Lou Thompson has noted, "Because of a market-based approach involving minimal government intervention, today's U.S. freight railroads add up to a network that, comparing the total cost to shippers and taxpayers, gives the world's most cost-effective freight service." Adjusted for inflation, average U.S. freight rail rates (measured by revenue per ton-mile) were 51

FIGURE 4.1



percent lower in 2010 than in 1980 saving consumers billions of dollars each year in lower shipping costs.

4.3.2.2. Decoding the ARR transformation

The global dominance of America's freight rail industry is a direct consequence of a balanced regulatory system. Railroads can largely decide for themselves what rates to charge, how assets should be used, and what services to offer. Meanwhile, regulators protect shippers against unreasonable railroad conduct and unreasonable railroad pricing. This ensures that freight rail in the United States is fair and competitive, and that railroads are held accountable for their actions. According to Morrison and Winston (1999) deregulation had been the key to transforming the U.S. Rail Freight Industry rail industry from a system that provided poor service to customers and stockholders to one that was able to "lower its costs and pass on these cost reductions in the form of lower prices and better service to customers."

Analysis of various parameters indicates improvements on the order of 50% during the nine-year period. Productivity improvement of this magnitude is beneficial to society because

fewer resources will be needed to move freight by rail. It has been noted that average revenue per ton declined or remained stable for most of the major traffic groups after deregulation despite increases in the average length of haul. Substantial productivity improvement does not automatically result in improved financial performance for companies or an industry because prices are determined in the marketplace. For many years, declining prices for rail service offset the savings to the railroads from productivity improvements. As a result, financial performance was relatively stable. The improvements in productivity, reductions in tariff and benefits to the users are summarised below from Martland 2006.

1. Rail industry productivity in US grew by 7% per year from 1984 to 1995, but financial benefits were not visible as they were offset by reductions in rail rates and the increasing need for capital expenditures.
2. Rail rates declined by more than one-third during that period, while financial measures, such as return on shareholders equity and net railway operating income, showed only a modest improvement.

3. From1995 to 2004, productivity improved 5% per year, prices continued to fall, and financial performance was flat or declining.

4. Significant reductions in costs during this 20-year period were possible primarily due to productivity improvements.

5. However, by 2004, the long-term trends were coming to an end and the rate of productivity improvement was declining, tariff started to rise, and capacity and service problems were becoming more serious. With higher rates, many of the Class I railroads were coming close to earning their cost of capital. The combination of increasing profitability, declining service, and inadequate capacity is unlikely to be sustainable.

6. The lack of capacity and deteriorating service quality are seen as serious problems not only for rail customers, but for public agencies at the local, state, and federal levels. Railroads will need financial and planning assistance from these agencies as they seek to provide sufficient capacity to handle the potential growth in traffic that is expected over the next 20 years.

7. During the period 1965 to 1995 the railroads industry struggled through financial difficulties, responded to major regulatory

changes, and rationalized its network and operations. Throughout that period, productivity improvements provided annual benefits to the order of $25 billion per year by 1995, a year when actual operating expenses for the Class I railroads were just under $28 billion. If railroad productivity had been the same as in 1965, operating expenses in 1995 would have exceeded $53 billion. Had prices remained at 1965 levels (in constant dollar terms), rail industry profits would also have increased to the order of $25 billion.

8. In fact, prices fell significantly following deregulation of the rail industry in 1980, and rail profits were less than $4 billion in 1995, or about the same in constant dollar terms as in the mid-1960s or the mid-1980s.

9. Despite improvements that often exceeded 7% per year in physical productivity, rail industry financial performance was essentially unchanged from the mid-1960s to the mid-1990s.

10. The STB estimated that the reductions in rail rates since deregulation in 1980 were equivalent to nearly $32 billion in 1999. This number was consistent with the conclusion of Martland (1999) that rate reductions had amounted to $25 billion in 1995.

In view of the leadership position acquired by American Railroads and progress during the period 1965 to 1995, it would be pertinent to understand in detail the mechanism through which it has been able to achieve this status. Morrison and Winston (1999) identified computers, double-stack container trains, improved communications, and many other technological and operating innovations that directly led to higher productivity; but they argue that these advances were realized only because of the new incentives that deregulation gave to firms. Specific technological or institutional factors influencing productivity improvement are discussed below.

1. **Larger, lighter cars.** Larger cars carry more freight, and the capacity of cars rises faster than their cost or weight. With larger cars, the ratio of gross tonnage (weight of equipment plus contents) to net tonnage (weight of contents) declines. Better car designs and use of aluminum or other lightweight materials have also reduced this ratio, thereby leading to savings in fuel consumption, track maintenance, and train crews by allowing the same amount of freight to be carried in fewer trains.

2. **Unit trains**. A unit train can be used to transport coal, grain, or ore from a single origin to a single destination, avoiding the

need to handle cars at intermediate yards. With unit trains, costs per ton mile decline because fewer switching yards are needed, much less time is spent for each trip (e.g., cycle times of a week or so versus two to three weeks for traditional single car shipments), and locomotive utilization is higher.

3. **Shift from general service to intermodal**. Intermodal movement of trailers or containers replaces complex and expensive terminal switching by railroads with more efficient short haul truck moves. Intermodal trains provide service to a hundred or so major intermodal terminals, while traditional rail service involved more than a thousand classification yards. Therefore, increases in intermodal traffic, plus declines in general merchandise, reduce the capacity needed in classification yards.

4. **Shift from TOFC/COFC to Double-Stack Intermodal Trains**. Further improvements in intermodal service have been obtained by using double-stack container trains. A double-stack train carries almost twice as many containers as a standard COFC (Container on Flat Car) or TOFC (Trailer on Flat Car) train. Hence, there are dramatic savings in crew costs and benefits in terms of line capacity. Moreover, the empty weight of double-

stack trains is low, providing benefits in terms of reduced equipment cost, lower fuel costs, and lower track maintenance.

5. **Fuel Efficiency** The introduction of larger, more efficient locomotives helped railroads to improve fuel efficiency, as did the increase in vehicle capacity mentioned earlier.

6. **Employee Productivity.** Between 1983 and 1995, the industry implemented reductions in crew consist and changes in labor agreements that produced a dramatic reduction in the number of people required to run trains. The average train and engine (T&E) employees per 10,000 train-miles dropped from 2.75 in 1983 to 1.39 in 1995, leading to a benefit of nearly $5 billion per year by 1995. The decline continued, but at a much slower rate to 1.16 by 2003, and then increased to 1.20 in 2004.

7. **Office Automation**. Between 1983 and 1995, the number of employees in the professional & administrative category declined from 68,000 to 27,000 for a savings of $1.8 billion. If that number were adjusted for the 25% increase in carloads handled by 1995, then the savings would have been increased to $2.5 billion, i.e., over $0.2 billion per year for the 12-year period.

8. **Maintenance of Way (MOW)**. Between 1983 and 1995, the number of employees in this category declined nearly 40%, from 64,000 to 40,000, despite an increase in ton-miles of nearly 60%. If the number of employees per ton-mile had remained the same, 2.5 times as many employees would have been needed in 1995 as in 1983. At the average wage in 1995, the payroll for MOW would have jumped from $1.56 billion to $3.8 billion.

9. To put this into more understandable terms, employment was declining at 3% per year during the 1983-1995 period when ton-miles were growing at 4% per year; this led to a very large increase in MOW productivity. In the more recent 1995-2004 period, employment declined at a rate of 2% per year while ton-miles were growing at a rate of 3% per year. The work force continued to decline while the demand on the track structure continued to grow.

10. **Facility Rationalization** The U.S. rail network reached its largest extent in the 1920s (1929 to be precise) and has been declining ever since. The pace of decline was accelerated during the 1980s, but declined by the end of the 1990s. The reduction in route-miles owned resulted from the abandonment

of branch lines and spinning off portions of the network to be operated by local or regional carriers. The greater reduction in track-miles reflects the elimination of yard tracks and the reduction of tracks in some multi-track segments.

11. Railroads shifted much of the burden of fleet ownership to the customers. In 1980, car companies and rail customers owned 26% of the car fleet, but their share of the fleet increased to 37% by 1990 and 50% by 2000 (AAR 2005). The net effect over this 20-year period was that customers purchased more than a quarter of a million freight cars that in prior days might have been purchased by the railroads. At an average cost per car of about $50,000 over most of this period (as reported in *Railroad Facts*), it is clear that shippers and car companies made an investment of $10 to $15 billion in equipment. Shifting ownership and maintenance responsibilities to customers surely increased their costs. However, the STB concluded that the total cost would amount to only about $3 billion per year, which is a small fraction of the annual savings of more than $30 billion that were achieved from productivity savings in the rail industry and passed on to customers in the form of lower rates.

12. A considerable portion of their productivity savings was achieved through rationalization of the network and structuring rates so as to promote multi-car shipments and unit trains. To take advantage of these services, some customers had to invest in facilities capable of handling much larger shipments, while others – especially farmers – complained that their costs rose for bringing their product to the rail head. This complaint is true, as the cost savings from line abandonment and facility consolidation are offset to some extent by the added costs to shippers who may face higher costs for storage or for access to more distant rail shipping points. The reductions in rail rates, therefore, do not equal the savings to shippers who may face higher logistics expense elsewhere.

4.3.3. Conclusions

From the above discussion on the Rail borne traffic in Japan, Germany, France, Italy and USA it can be inferred that each organization has developed its own set of policies based upon the market needs, competition, infrastructure, governmental policies, etc. Whereas, Japan Railways have successfully exploited the land holdings available to them and generate substantial non-traffic revenue, the European Railways are fighting the battle within

the enemy camps of LCA. US Railroads have implemented a slew of productivity enhancing measures thus bringing down the cost of service and passing on the benefits to the customers in the form of reduction in freight rates. AMTRAK on the other hand continues to seek Union subsidy. These lessons suitably modified for IR have been used in the recommendations at Sr. No. 8,9,11,12,13 and 15 in chapter-5,