



Investors' Guide to Railroad Freight Cars and Locomotives

2010-2011

RAILSOLUTIONS, INC.

Market for General Service Boxcars

Historical Overview

The general service boxcar has been a mainstay of the industry's equipment fleet ever since railroads began hauling freight. Until railcars became more specialized after World War II, boxcars were used to haul virtually every type of commodity with the exception of coal and bulk liquid chemicals. Over the past 30 years, supply and demand dynamics in the boxcar market have been used by some analysts as an indicator of the general health of the overall rail equipment market. During this same period, however, the volume and types of traffic moved in boxcars, as well as the number of cars in service and the ownership profile of the North American boxcar fleet has changed significantly.

In the mid-1970s, the total number of boxcars in the North American fleet exceeded 400,000 units; however, as railroads lost significant volumes of general merchandise traffic to over the highway truck carriers, the size of the boxcar fleet declined to less than 180,000 units by the mid-1990s. Over the past two decades, railroads have directed marketing efforts toward retaining existing traffic and regaining certain types of general merchandise business which can be moved efficiently and profitably by rail. Boxcars are currently utilized in four primary markets: paper products (both finished and scrap paper), lumber products (which are shipped in general service boxcars), auto parts (which are shipped in equipped boxcars) and food products (packaged, perishable and frozen foods, which are shipped in refrigerated boxcars).



Supply and Ownership of Boxcars

Since the mid-1970s, the ownership profile of the boxcar fleet has shifted from primarily Class I railroad ownership to a mix of Class I, regional and short line railroads and private (leasing company) ownership. A significant factor in this shift of ownership is directly related to certain artificial investment incentives (investment tax credits and incentive per diem) that existed in the mid and late 1970s which helped fuel a period of massive overbuilding in the late 1970s. A large number of the boxcars built between 1975 and 1980 were 50-foot, 70-ton general service boxcars that were placed in free-running service by regional and short line railroads and financed by private owners and leasing companies.

The massive overbuilding of the late 1970s created an oversupply of boxcars that existed until the mid-1990s. During the period from 1982 to 1988, orders for newly manufactured general service boxcars were virtually nonexistent. By the mid-1990s, many shippers began to recognize the deteriorating state of the boxcar fleet, and as a result, a modest level of demand for new boxcars began to surface. Over the past 15 years,

the demand for newly manufactured boxcars has been focused primarily on 50-foot and 60-foot, 105-ton (286,000 pounds gross rail load), high capacity cars for use in high grade (Class A) paper service.

Boxcar fleet statistics include several variations of car lengths and interior configurations, and are usually classified as equipped or unequipped cars. Historically, the equipped versus unequipped designation usually referred to the type of interior lading securement devices installed. The standard practice among car owners has been to assign equipped boxcars to specific traffic moves known as dedicated services rather than using those cars in free-running or general services. In order to control the movement and availability of boxcars, many shippers and railroads have redesignated a significant number of boxcars from unequipped to equipped status (regardless of those cars' actual configuration) so that they can be placed in dedicated services. By the mid-1990s, the equipped status of boxcars became more of an indicator of the type of service in which cars are employed rather than the type of interior configuration of the car.

New deliveries of boxcars averaged between 3,000 and 5,000 units annually during the period from 1995 to 2006. Compared to the number of newly manufactured railcars in other classifications (open top hopper cars, and specialty and general service covered hopper cars) that were built new during the same time frame, the boxcar production numbers were modest. We believe that the cost of new boxcars during the peak production years of 1996 to 1998 and 2004 to 2006 (which was in a range of \$65,000 to \$84,000 depending on the capacity and configuration) was one of the major factors in explaining the relatively low number of orders for new boxcars.

Demand for Boxcars

Overall demand for unequipped and equipped, general service boxcars is tied primarily to rail traffic levels in pulp and paper markets, and in lumber and wood products markets. Since the recession of 1991, rail traffic levels in those markets have been somewhat volatile with traffic peaking in 1994 (which was considered a banner year for rail freight traffic in general). Boxcar traffic declined during the period between 1995 and 1998, before increasing again in 1999.

By late 2000, the softening U.S. economy began to take its toll on rail traffic of all types, including general merchandise traffic, as well as paper, lumber and auto parts traffic. Traffic volumes for those commodities typically carried in boxcars posted healthy growth in 2004 and 2005 along with almost every other sector served by rail. Demand for equipped boxcars used in auto parts service is tied directly to the fortunes of the automobile manufacturing industry, and as might be expected, has followed the trends described above.

Another sector of the boxcar market which, until recently, received relatively little attention is the market for refrigerated boxcars. Beginning in the 1950s, the transportation of packaged and frozen foods shifted from rail to highway and the demand for refrigerated boxcars, both insulated cars used in beer and beverage services and mechanically refrigerated cars used in packaged and frozen food services, posted steady declines. Virtually no new mechanically refrigerated boxcars entered service between 1980 and 2000.

In the early 2000s, both BNSF and Union Pacific recognized that some potential exists to grow the traffic base in this sector and to ship packaged and frozen foods profitably in long haul corridors with a high level of equipment utilization (more

than two loaded trips per month). Both railroads took delivery of new, high capacity mechanically refrigerated boxcars between 2000 and 2003. The newest generation of mechanically refrigerated boxcars are relatively sophisticated (equipped with GPS and advanced cooling systems) and are also quite expensive at \$135,000 to \$200,000 per car. Since 2003 no significant number of orders for new refrigerated boxcars has been placed, and we doubt that any significant number of new cars of this type will be built in the foreseeable future.



Current Market Conditions

Market conditions in the general service boxcar sector began to deteriorate at a steady pace in late 2006. Given general economic conditions, and more specifically, trends in the paper, forest products and auto parts sectors, it is no surprise that boxcar demand has declined at a startling rate. Rail traffic volumes in these markets declined by over 50 percent between late 2006 and early 2010 when compared to 2005 volume levels.

A significant number of the approximately 400,000 railcars currently in storage, as of January 1, 2010, are boxcars and other car types used in lumber and automobile manufacturing-related services. Rental rates on leased boxcars and used boxcar values have declined by more than 40 percent since 2006. Rental rates and values of older 50-foot, 70-ton capacity boxcars have shown the most dramatic declines which can be explained by the fact that these cars are reaching the end of their expected economic useful life; they are much less marketable (lower weight and volume carrying capacities); and they are more expensive to maintain. Many boxcar fleet owners believe that, even if market conditions show some improvement in the near term, a significant number of 50-foot, 70-ton boxcars will be retired within five years.

Perhaps the most obvious indicator of market weakness is the huge drop in the number of orders for newly manufactured general service boxcars. Virtually no new orders for general service boxcars were placed in 2008 and 2009, and none are expected in the foreseeable future. RS believes that traffic volumes in the paper, forest products and auto sectors would have to return to 2005 levels before all of the cars that are currently stored are returned to service, or in the case of many older cars, retired. While rental rates and values of newer, 100-ton and 105-ton capacity boxcars have shown declines since 2007, some boxcar fleet owners believe that these newer cars should still have enough remaining life left after the market stabilizes to support reasonable current valuations. The most critical factor in this type of analysis involves the timing of recovery in the four markets served by boxcars. RS believes that any noticeable recovery in the boxcar market is unlikely before 2012. It should be noted that the estimates of current and future fair market value as shown in Table 1.8 are somewhat theoretical since virtually no market activity has taken place in approximately two years, and very little is expected in 2010.

Table 1.1 Overview of Significant Trends and Events

1977 – 1980

Boxcar Building Boom

A boxcar shortage in the 1960s and early 1970s turned into a glut by the early 1980s. Thousands of newly manufactured 50-foot, 70-ton boxcars entered service in the late 1970s, many of which were acquired by private investors and short line railroads for use in free-running service, earning car hire revenue under prescribed rates.

1982 - 1985

Oversupply of Boxcars

By 1982, the oversupply of boxcars had become painfully obvious. Virtually no new building of boxcars would occur again until the early 1990s.

1994

Deprescription of Car Hire Rates

Prescribed car hire rates were phased out over a ten-year period from 1994 to 2004. Under deprescription, all car hire rates are negotiated under bi-lateral agreements between railroads.

1994 – 1995

Introduction of 286,000-Pound Gross Rail Load Boxcars

Virtually all of the boxcars built new since the late 1980s were 50-foot and 60-foot, 100-ton and 105-ton capacity cars. Even with the return of the boxcar market to equilibrium and the introduction of 286k GRL cars, the demand for newly manufactured boxcars remains subdued when compared to other general service car types.

2006 – 2010

Declining Traffic Volumes and Declining Demand

Paper, forest products and auto parts traffic moved by rail posted steady declines beginning in late 2006. Market demand for 50-foot, 70-ton boxcars (most which were built new in the 1970s) and newly manufactured boxcars (50-foot and 60-foot, 286,000 pounds gross rail load) has declined at a steady pace since early 2007. Virtually no new orders for newly manufactured boxcars were placed in 2008 and 2009, and none are expected in the foreseeable future.

Table 1.2 Current Ownership and Fleet Age Profile

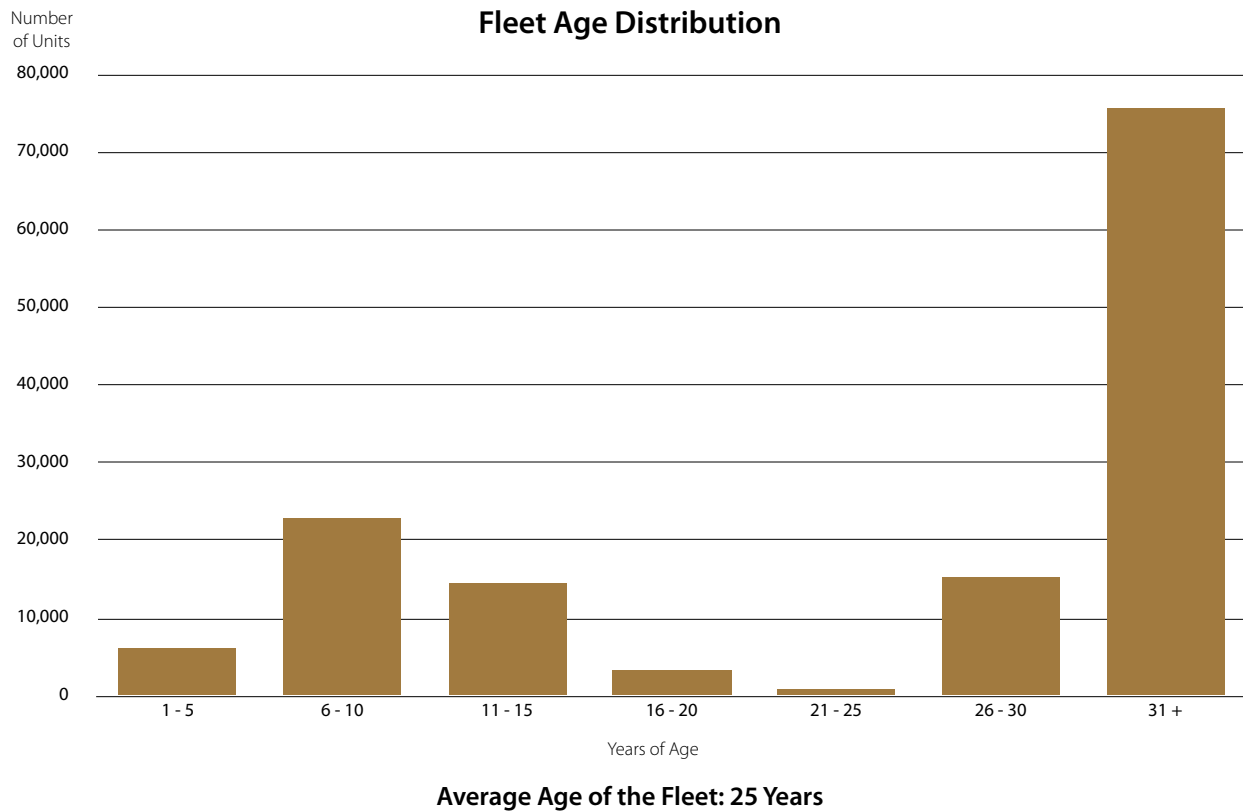
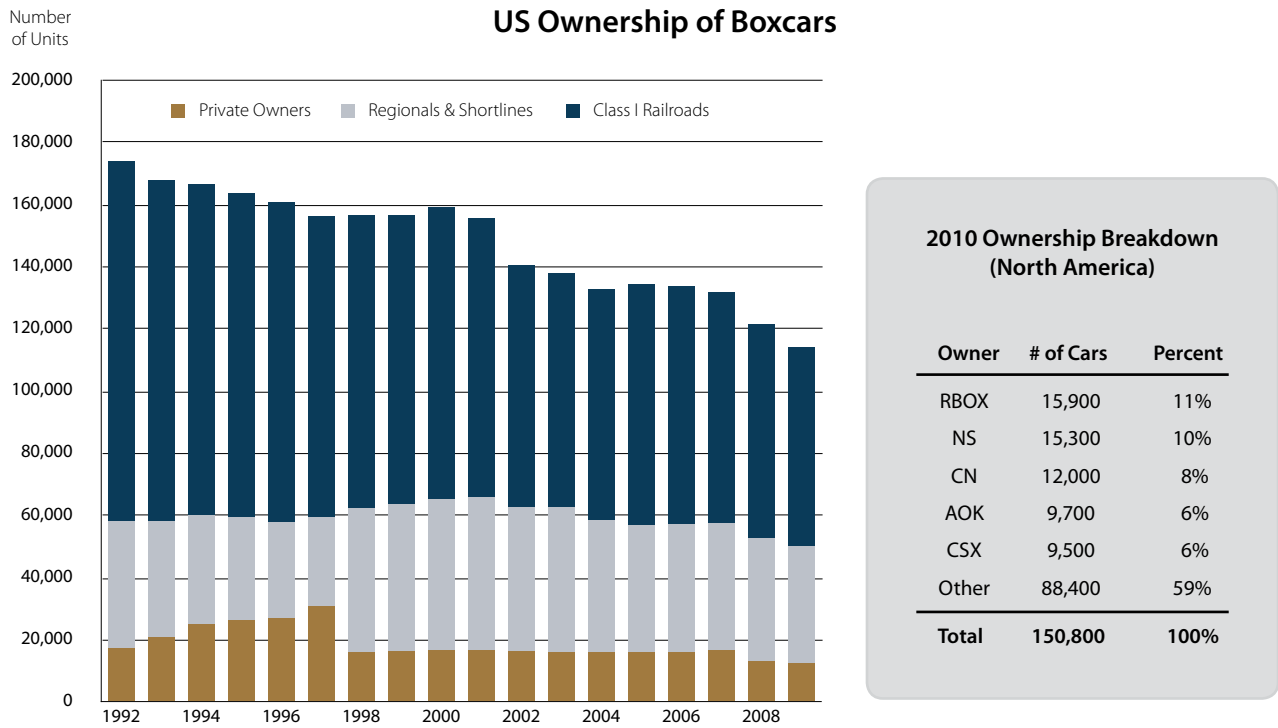
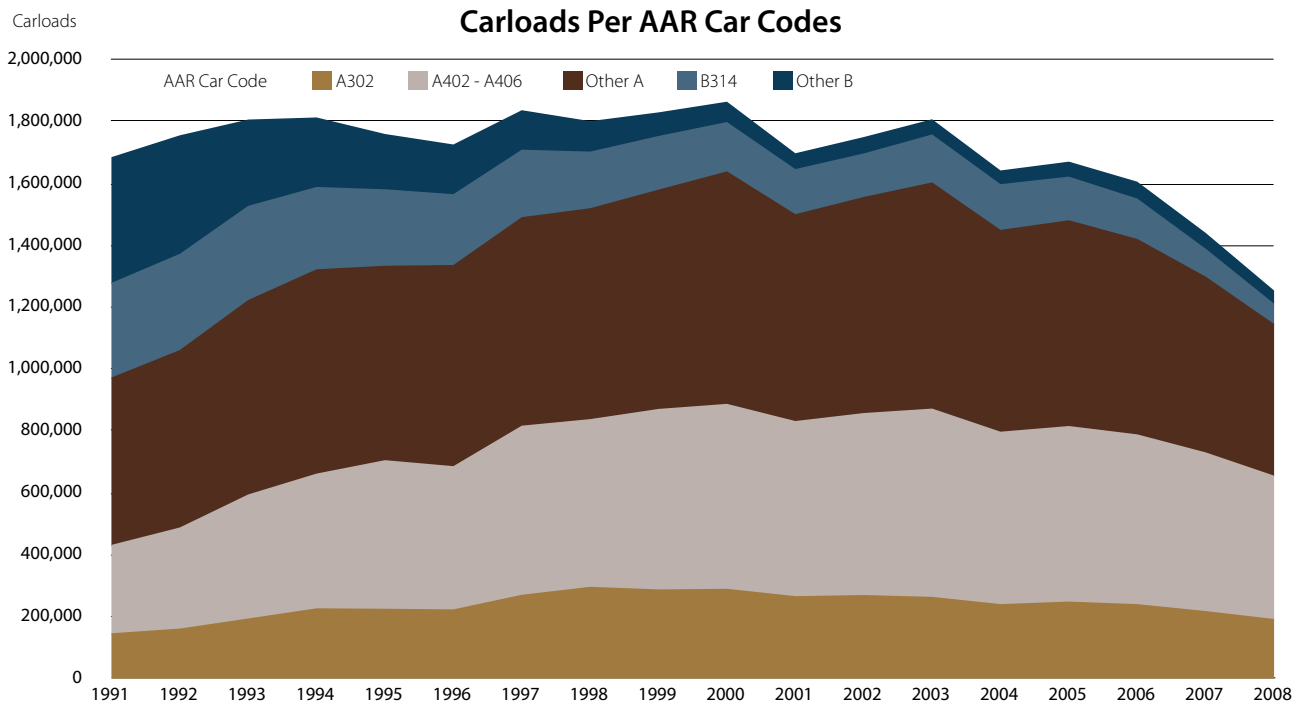


Table 1.3 Carloading and Utilization Information



Revenue Per Carload and Loaded Trips

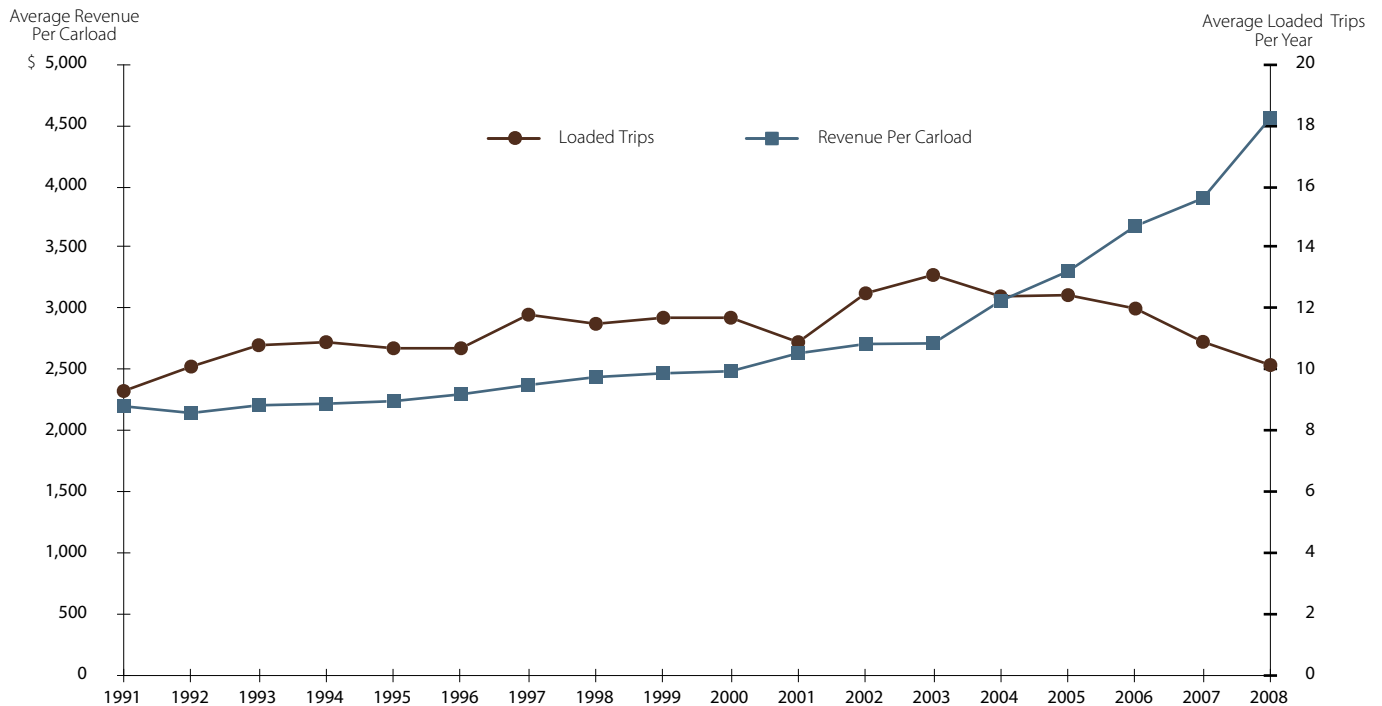
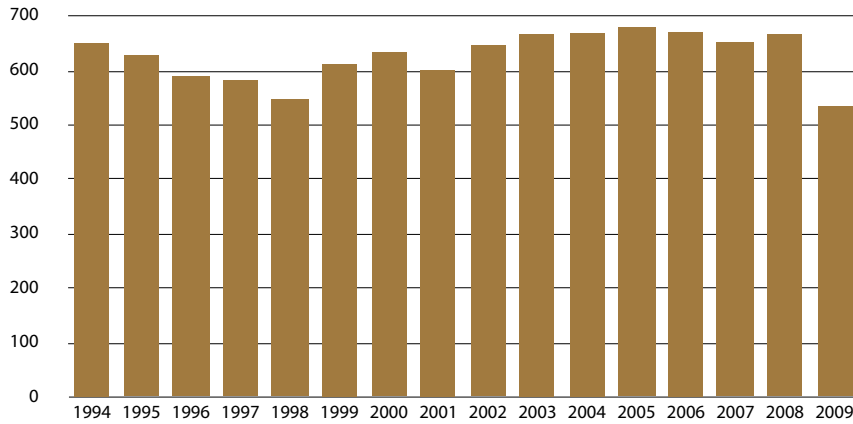


Table 1.4a Pulp, Paper and Allied Products Traffic Summary

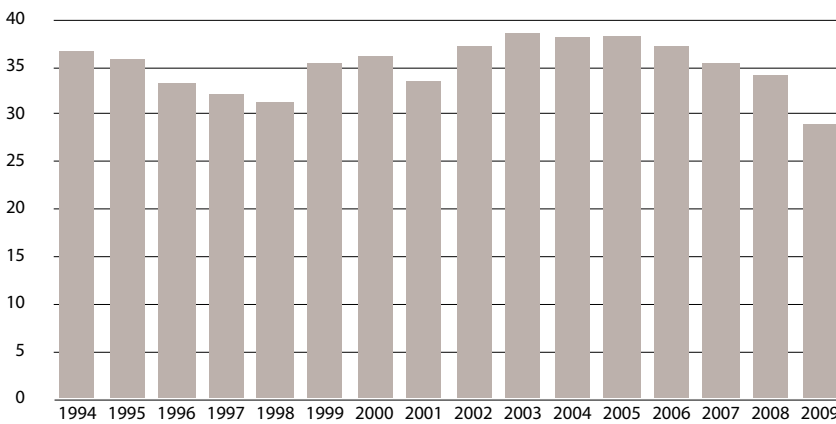
Carloadings Originated
(Thousands)



Carloading Originated

Year	Thousands	% Change
1994	651	---
1995	628	-3.5%
1996	589	-6.2%
1997	582	-1.2%
1998	547	-6.0%
1999	612	11.9%
2000	633	3.4%
2001	601	-5.1%
2002	646	7.5%
2003	667	3.3%
2004	669	0.3%
2005	679	1.5%
2006	671	-1.2%
2007	652	-2.8%
2008	666	2.1%
2009 (est.)	534	-19.8%

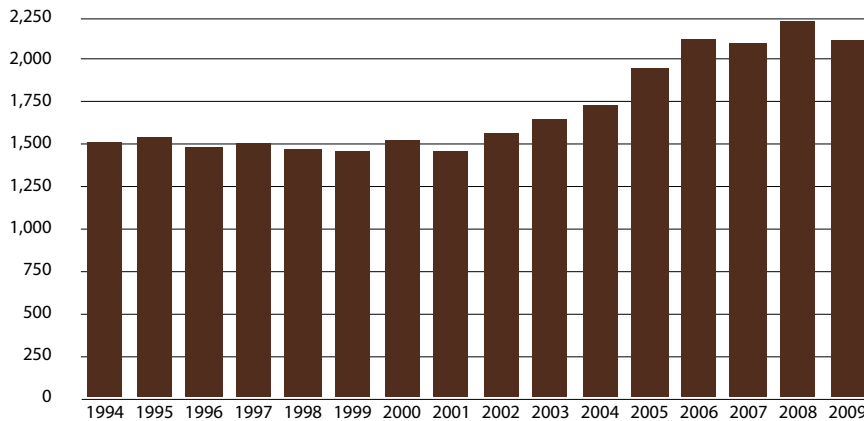
Tons Originated
(Millions)



Tons Originated

Year	Millions	% Change
1994	36.6	---
1995	35.8	-2.2%
1996	33.3	-7.0%
1997	32.1	-3.6%
1998	31.3	-2.5%
1999	35.4	13.1%
2000	36.1	2.0%
2001	33.5	-7.2%
2002	37.2	11.0%
2003	38.5	3.5%
2004	38.1	-1.0%
2005	38.2	0.3%
2006	37.2	-2.6%
2007	35.3	-5.0%
2008	34.1	-3.5%
2009 (est.)	29.0	-15.0%

Revenue
(\$ in Millions)

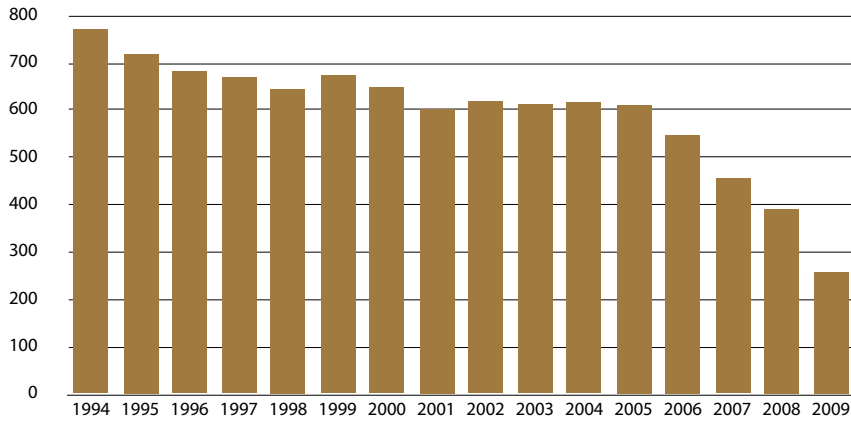


Revenue

Year	\$ Millions	% Change
1994	1,510	---
1995	1,543	2.2%
1996	1,485	-3.8%
1997	1,507	1.5%
1998	1,472	-2.3%
1999	1,457	-1.0%
2000	1,526	4.7%
2001	1,457	-4.5%
2002	1,567	7.5%
2003	1,646	5.0%
2004	1,730	5.1%
2005	1,953	12.9%
2006	2,124	8.8%
2007	2,100	-1.1%
2008	2,228	6.1%
2009 (est.)	2,116	-5.0%

Table 1.4b Lumber and Wood Products Traffic Summary

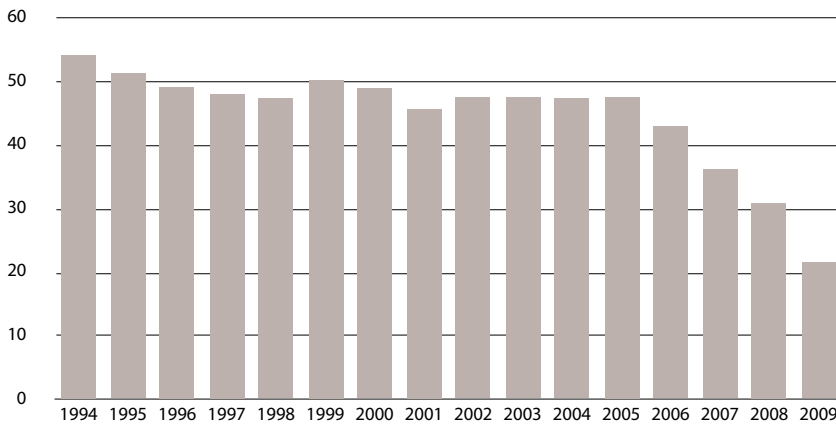
Carloadings Originated
(Thousands)



Carloading Originated

Year	Thousands	% Change
1994	771	---
1995	719	-6.7%
1996	682	-5.1%
1997	669	-1.9%
1998	645	-3.6%
1999	673	4.3%
2000	648	-3.7%
2001	603	-6.9%
2002	619	2.7%
2003	612	-1.1%
2004	616	0.7%
2005	611	-0.8%
2006	548	-10.3%
2007	456	-16.8%
2008	392	-14.0%
2009 (est.)	259	-33.9%

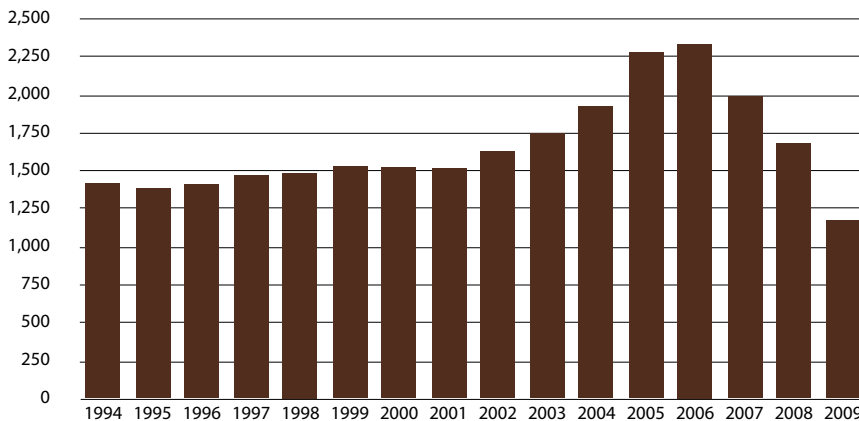
Tons Originated
(Millions)



Tons Originated

Year	Millions	% Change
1994	54.2	---
1995	51.3	-5.4%
1996	49.2	-4.1%
1997	48.1	-2.2%
1998	47.4	-1.5%
1999	50.3	6.1%
2000	48.9	-2.8%
2001	45.7	-6.5%
2002	47.5	3.9%
2003	47.5	0.0%
2004	47.4	-0.2%
2005	47.6	0.4%
2006	43.0	-9.7%
2007	36.2	-15.8%
2008	30.9	-14.6%
2009 (est.)	21.6	-30.1%

Revenue
(\$ in Millions)

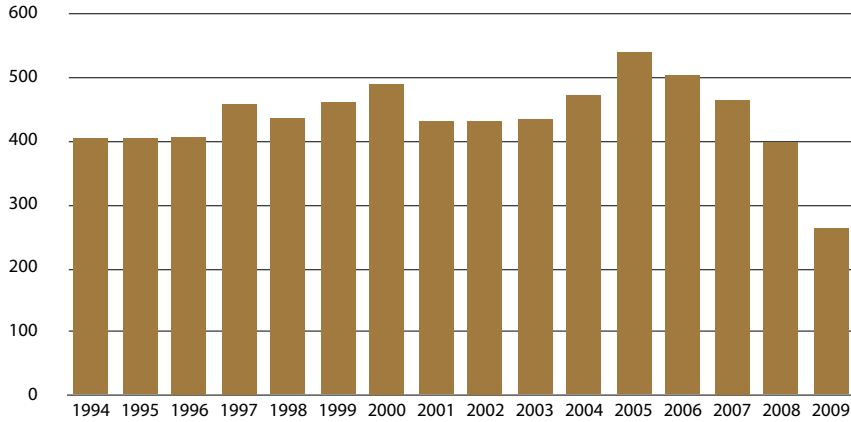


Revenue

Year	\$ Millions	% Change
1994	1,421	---
1995	1,384	-2.6%
1996	1,409	1.8%
1997	1,471	4.4%
1998	1,487	1.1%
1999	1,528	2.8%
2000	1,524	-0.3%
2001	1,519	-0.3%
2002	1,628	7.2%
2003	1,745	7.2%
2004	1,924	10.3%
2005	2,278	18.4%
2006	2,335	2.5%
2007	1,987	-14.9%
2008	1,684	-15.2%
2009 (est.)	1,178	-30.0%

Table 1.4c Motor Vehicle Parts and Accessories Traffic Summary

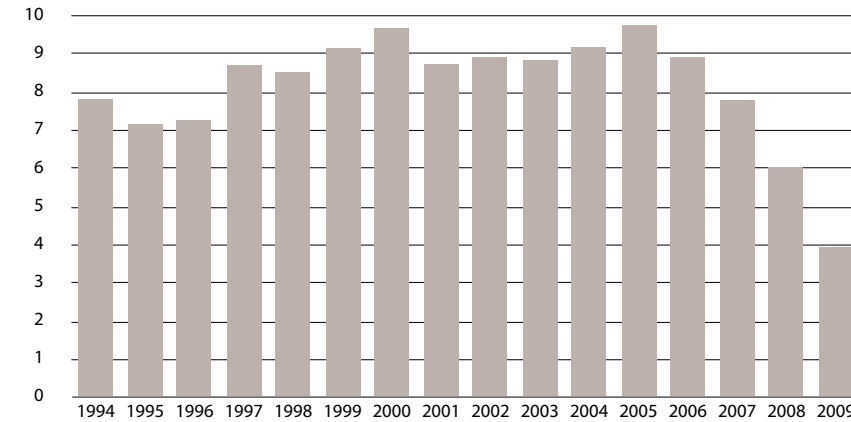
Carloadings Originated
(Thousands)



Carloading Originated

Year	Thousands	% Change
1994	404	---
1995	404	0.0%
1996	407	0.7%
1997	459	12.8%
1998	436	-5.0%
1999	461	5.7%
2000	490	6.3%
2001	431	-12.0%
2002	432	0.2%
2003	434	0.5%
2004	472	8.8%
2005	540	14.4%
2006	504	-6.7%
2007	465	-7.7%
2008	398	-14.4%
2009 (est.)	263	-33.9%

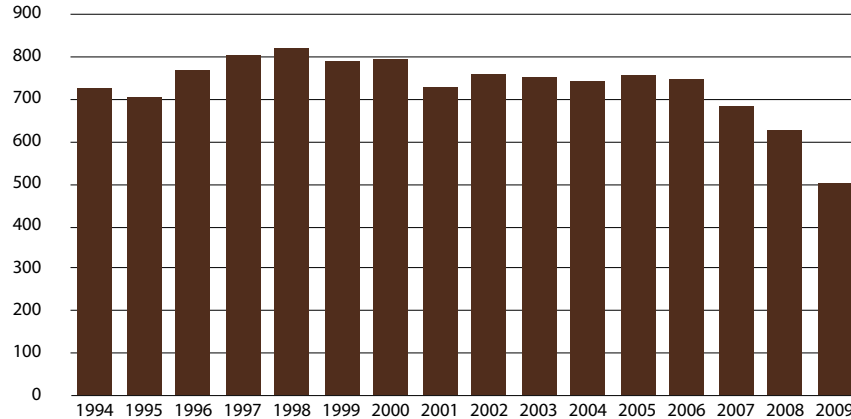
Tons Originated
(Millions)



Tons Originated

Year	Millions	% Change
1994	7.81	---
1995	7.15	-8.5%
1996	7.27	1.7%
1997	8.71	19.8%
1998	8.53	-2.1%
1999	9.14	7.2%
2000	9.68	5.9%
2001	8.72	-9.9%
2002	8.92	2.3%
2003	8.83	-1.0%
2004	9.18	4.0%
2005	9.74	6.1%
2006	8.90	-8.6%
2007	7.79	-12.5%
2008	6.04	-22.5%
2009 (est.)	3.93	-34.9%

Revenue
(\$ in Millions)



Revenue

Year	\$ Millions	% Change
1994	727	---
1995	706	-2.9%
1996	769	8.9%
1997	805	4.7%
1998	821	2.0%
1999	790	-3.8%
2000	795	0.6%
2001	729	-8.3%
2002	760	4.3%
2003	753	-0.9%
2004	744	-1.2%
2005	757	1.7%
2006	748	-1.2%
2007	684	-8.6%
2008	628	-8.2%
2009 (est.)	502	-20.1%

Table 1.5 Historical New Railcar Invoice Costs

Year Built	General Description	Approximate Number of Units Built	Estimated Average Invoice Cost Per Unit
1988	50 Feet, 100 Tons (263k GRL)	300	\$ 60,000
1989	50 Feet, 100 Tons (263k GRL)	400	62,000
1990	50 Feet, 100 Tons (263k GRL)	400	62,000
1991	50 Feet, 100 Tons (263k GRL)	100	62,000
1992	50 Feet, 100 Tons (263k GRL)	100	62,000
1993	50 Feet, 100 Tons (263k GRL)	1,400	63,000
1994	50 Feet, 100 Tons (263k GRL)	1,300	64,000
1995	60 Feet, 105 Tons (286k GRL)	1,600	65,000
1996	60 Feet, 105 Tons (286k GRL)	2,800	65,000
1997	60 Feet, 105 Tons (286k GRL)	1,200	65,000
1998	60 Feet, 105 Tons (286k GRL)	3,600	65,000
1999	60 Feet, 105 Tons (286k GRL)	5,100	70,000
2000	60 Feet, 105 Tons (286k GRL)	7,700	70,000
2001	60 Feet, 105 Tons (286k GRL)	5,400	65,000
2002	60 Feet, 105 Tons (286k GRL)	1,300	65,000
2003	60 Feet, 105 Tons (286k GRL)	4,200	68,000
2004	60 Feet, 105 Tons (286k GRL)	4,600	72,000
2005	60 Feet, 105 Tons (286k GRL)	2,900	80,000
2006	60 Feet, 105 Tons (286k GRL)	2,100	86,000
2007	60 Feet, 105 Tons (286k GRL)	500	90,000
2008	60 Feet, 105 Tons (286k GRL)	200	90,000
2009	60 Feet, 105 Tons (286k GRL)	400	86,000
2010	60 Feet, 105 Tons (286k GRL)	N/A	86,000

Table 1.6 Historical Estimates of Fair Market Value, Used Railcars

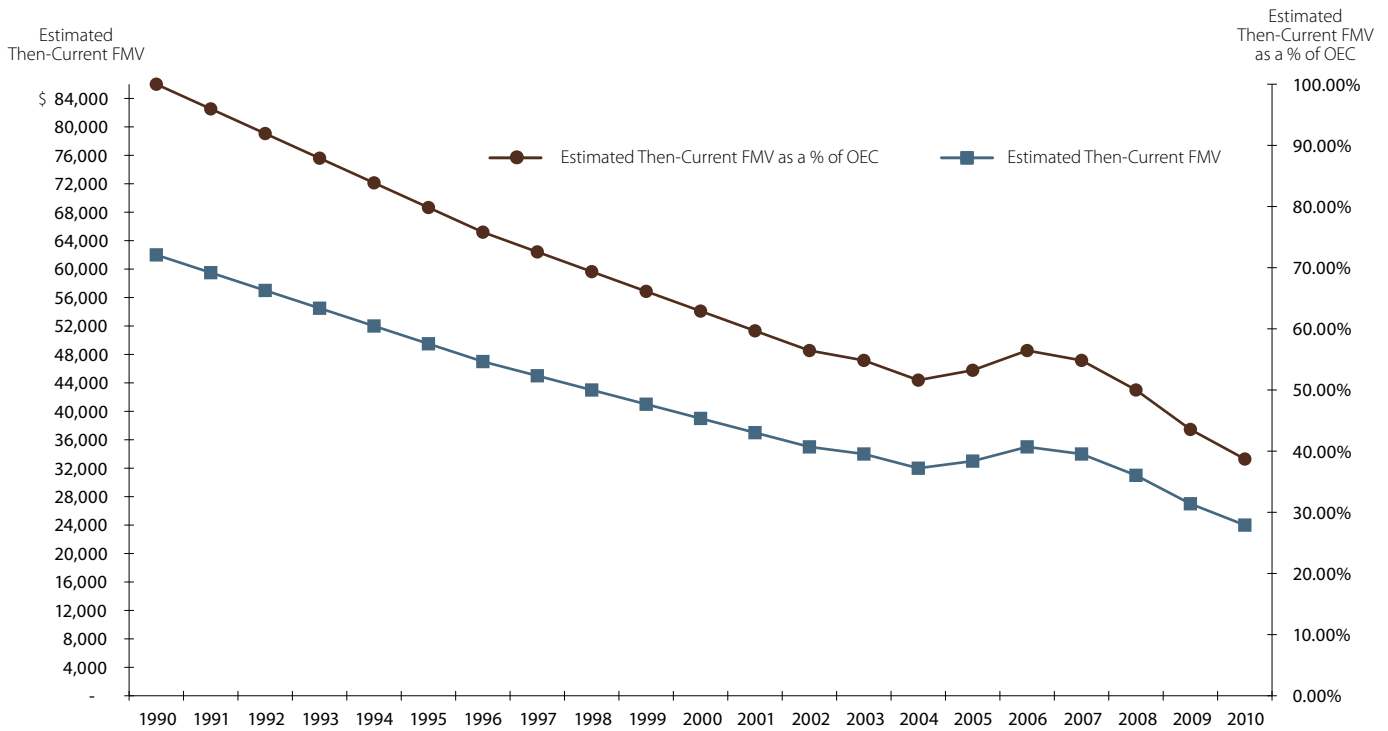


Table 1.7 Historical Rental Rate Data

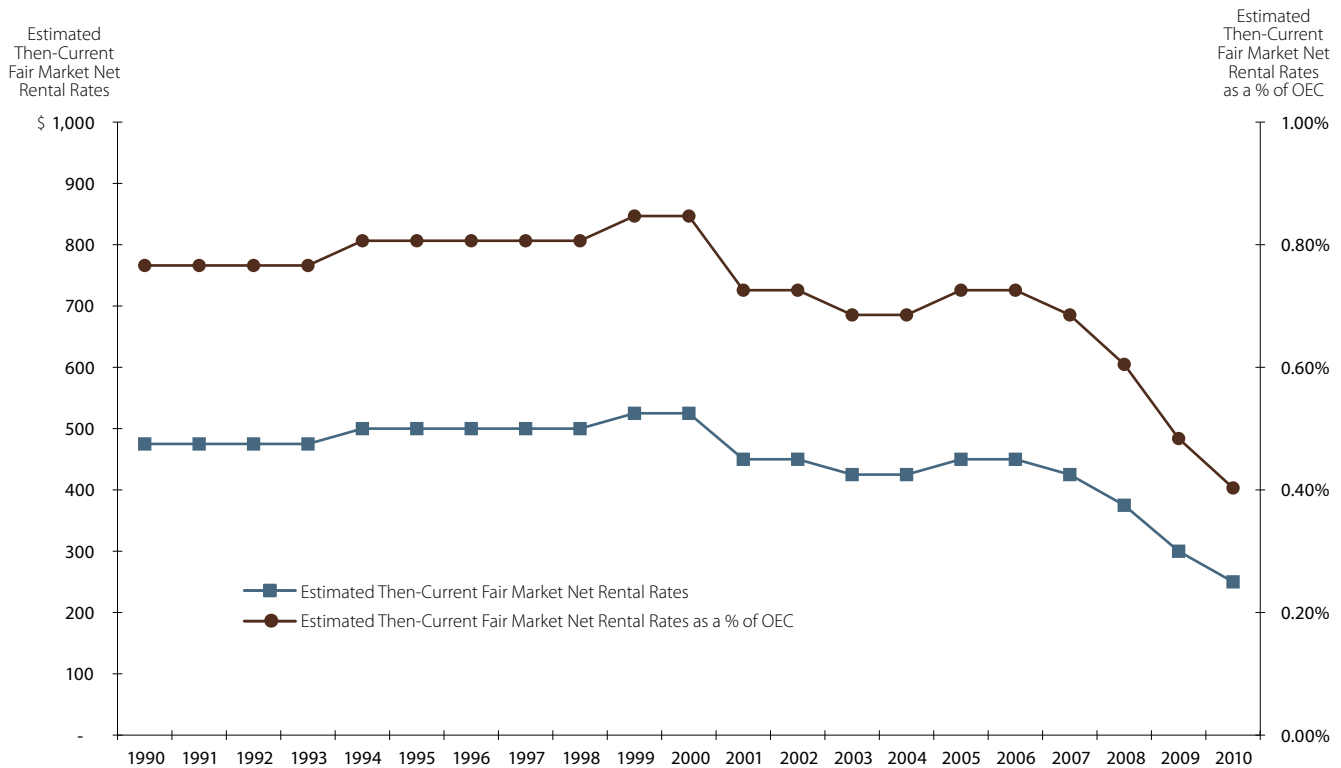
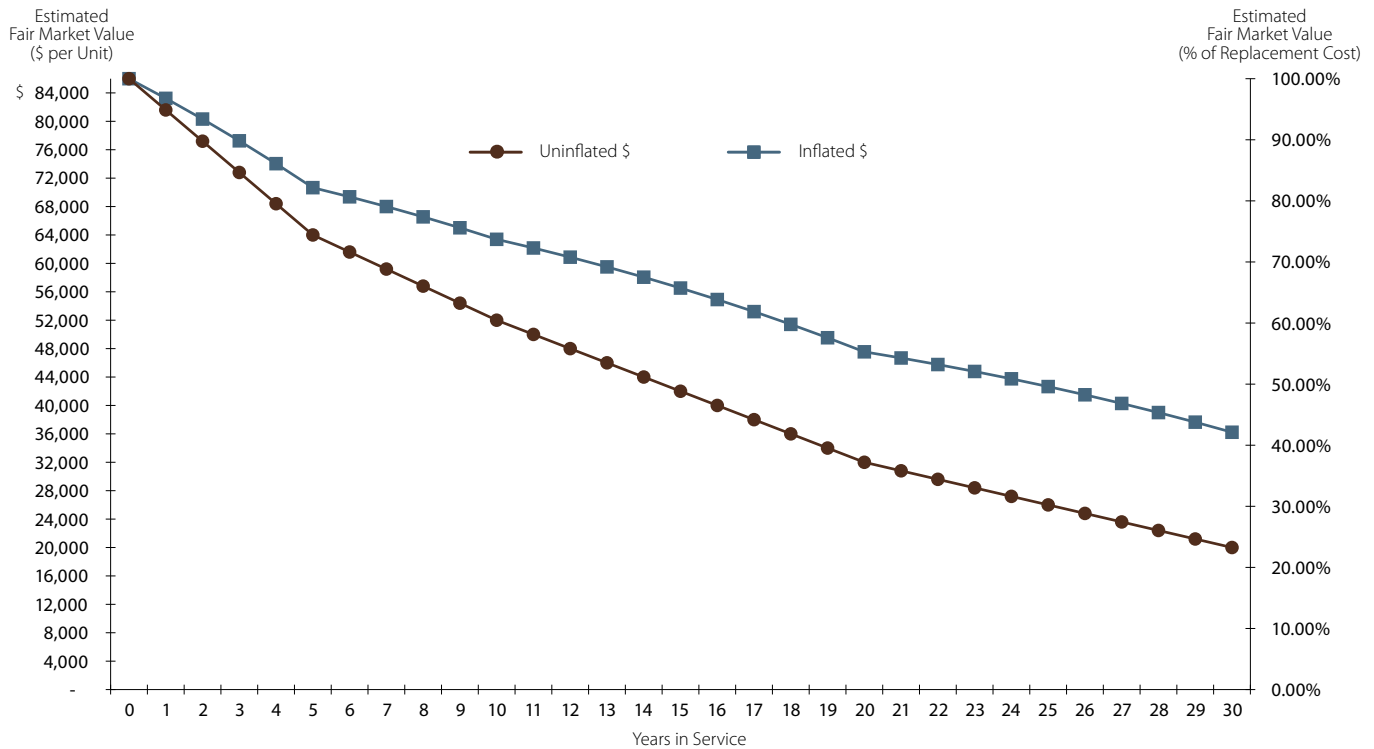


Table 1.8 Estimated Future Fair Market Values, New Railcars
General Service Boxcars - 60 Feet, 105 Tons, Plate F



Year	Service Life (Years)	2010 Estimated Replacement Cost	Uninflated Dollars		Inflated Dollars (2.0% Annually)	
			Valuation Index	Estimated FMV	Valuation Index	Estimated FMV
2010	0	\$ 86,000	100.00%	\$ 86,000	100.00%	\$ 86,000
2011	1	86,000	94.88%	81,600	96.78%	83,232
2012	2	86,000	89.77%	77,200	93.39%	80,319
2013	3	86,000	84.65%	72,800	89.83%	77,256
2014	4	86,000	79.53%	68,400	86.09%	74,038
2015	5	86,000	74.42%	64,000	82.16%	70,661
2016	6	86,000	71.63%	61,600	80.66%	69,372
2017	7	86,000	68.84%	59,200	79.07%	68,002
2018	8	86,000	66.05%	56,800	77.38%	66,550
2019	9	86,000	63.26%	54,400	75.60%	65,013
2020	10	86,000	60.47%	52,000	73.71%	63,388
2021	11	86,000	58.14%	50,000	72.29%	62,169
2022	12	86,000	55.81%	48,000	70.79%	60,876
2023	13	86,000	53.49%	46,000	69.19%	59,506
2024	14	86,000	51.16%	44,000	67.51%	58,057
2025	15	86,000	48.84%	42,000	65.73%	56,526
2026	16	86,000	46.51%	40,000	63.85%	54,911
2027	17	86,000	44.19%	38,000	61.87%	53,209
2028	18	86,000	41.86%	36,000	59.79%	51,417
2029	19	86,000	39.53%	34,000	57.59%	49,532
2030	20	86,000	37.21%	32,000	55.29%	47,550
2031	21	86,000	35.81%	30,800	54.28%	46,683
2032	22	86,000	34.42%	29,600	53.21%	45,761
2033	23	86,000	33.02%	28,400	52.07%	44,784
2034	24	86,000	31.63%	27,200	50.87%	43,749
2035	25	86,000	30.23%	26,000	49.60%	42,656
2036	26	86,000	28.84%	24,800	48.26%	41,501
2037	27	86,000	27.44%	23,600	46.84%	40,283
2038	28	86,000	26.05%	22,400	45.35%	38,999
2039	29	86,000	24.65%	21,200	43.78%	37,648
2040	30	86,000	23.26%	20,000	42.12%	36,227

Other Valuation Information

Salvage Value:	\$ 4,000 - 7,000
Scrap Value:	\$ 3,000 - 6,000
Estimated Discount Used to Convert From Fair Market Value to Orderly Liquidation Value:	20 Percent
Estimated Total Economic Useful Life: (Newly Manufactured Equipment)	38 to 42 Years



A photograph of a railway track stretching into the distance under a cloudy sky. The track is made of gravel and metal rails, leading towards a horizon with mountains. The sky is blue with white and grey clouds. The foreground is a grassy field.

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