NARROW NUGGETS

conducted by
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Ideas for narrow gauge modeling

42-Inch narrow gauge railroads

I am modeling the Huntsville Lake of Bays Railway in S scale. This railway was 42-inch gauge (or 3'-6"), and this means that in S scale I can use HO standard gauge track, trucks and motive power running gear or chassis. It occurred to me that some of you might also be interested in modeling this offbeat gauge, and I decided to do a little research into the history of the gauge. I am also attempting to gather existing practices with regards to modeling this gauge, more on this later, but for now I would like to share with you the fruits of my research into the origins of the 42-inch gauge.

The first practical application of the 42-inch gauge came in Norway in 1856. The chief engineer, Carl Pihl, of the Norwegian State Railways built two railways in this gauge. The first line, 38 kilometers long, opened in 1862. The second was 49 kilometers long and opened in 1864. These lines demonstrated that narrow gauge railways could be built more cheaply than standard gauge ones and that the motive power and rolling stock was also cheaper. These railways could carry a load equivalent to the standard gauge ones but cost less to build. This was the allure of narrow gauge railways and was to be the main reason so many were built.

The debate over the merits and economics of narrow gauge continued as long as narrow gauge railroads were built. Proponents pointed out that rights-of-way were cheaper because bridges didn't have to carry as much weight as standard gauge ones. Grading was not as extensive, cuts were smaller, grades steeper, and curves sharper so that the railroad tended to go around obstacles. The opponents pointed out that locomotives and rolling stock cost the same as standard gauge ones, wages were the same, charges for transfer had to be paid at the interchange with the standard gauge.

The first builder of 3'-6" railroads, Carl Pihl, chose 42-inch as his gauge on a whim, but after his lines were built and proved successful and economical, it was obvious that more would follow.

Sir Charles Fox built a 3'-6" line, 19 miles long, in India that opened in 1865. A 20-mile railway was opened in 1865 in Queensland, Australia. In 1868 Sir Fox came to Canada to address a meeting in Toronto in support of the 3'-6" gauge for the building of the Toronto, Grey & Bruce and the Toronto & Nipissing railways. These railways were built as Fox recommended. Fox was also instrumental in the adoption of the 3'-6" gauge as the standard gauge in New Zealand that continues to today. The railways in South Africa were converted to 3'-6" gauge in 1882 and most of English-speaking Africa below the Sahara was built to this gauge.

The 3'-6" gauge was so popular in the British Empire that it was automatically selected for Canada's Newfoundland Railway in 1881. The gauge was also popular outside the Empire as witnessed by Japan's selection for the State Railway in 1872. The 3'-6" gauge was also used for railways in Russia.

The first 3'-6" gauge railroad in the United States was the Mauch Chunk, Summit Hill & Switch Back Railroad in Pennsylvania built in 1826. This railroad used mules to pull the cars up its nine-mile grade. The cars returned by gravity. Two inclined planes were built in 1844 for returning the empty cars. The gravity line was given up except for tourist traffic in 1870.

Most of the 3'-6" lines in the U.S. were in the South. It is interesting to note that the total length of 3'-6" lines in the U.S. was 487 miles, which represented about 2.6% of the total narrow gauge mileage. As a comparison, the 3'-0" lines totaled 17,608 miles or 95.35 percent of the total. Certainly in the U.S. the 3'-6" gauge represented a small mileage, but more than the 2'-0" or any other gauge. In Canada the Newfoundland Railway had more miles than all the 3'-6" lines in the U.S. combined.

Narrow gauge building peaked in 1878 at 35 percent of all railroad miles built. This included all gauges. Most of the 3'-6" lines in the U.S. were converted to standard gauge around the turn of the century as was the trend for a lot of narrow gauge lines. In Canada the Toronto, Grey & Bruce converted in 1877 and this was the sign of the times for the narrow gauge railroads.

One of the contributing factors to the demise of the narrow gauge lines was maintenance. Since these lines were built generally with lighter bridges and poorer grading, the rights-of-way required better maintenance than the standard gauge lines to remain viable. Since this did not happen in most cases, the railroads quickly deteriorated to the point that large sums of money were required to bring them up to standard so they were just liquidated or converted.

Table 1 gives a summary of the narrow gauge lines in Canada and Table 2 those lines in the U.S.

I am trying to compile a set of current practices that are used by those modeling in 3'-6" gauge in any scale. If you are modeling this gauge, please drop me a short note and give me a brief description of what you are doing. I will send you a short form to fill in which will document the current practice of those modeling 3'-6".

Till next time, happy modeling!

TABLE1. 42-Inch Narrow Gauge Railways of Canada

Province	Name	Dates	Length	Page
Newfoundland	Botwood Railway	1909-1957	24 miles	86
	Millertown Railway	1901-1910	19.5 miles	86
	Harpoon Tramway	1910-1957	19.5 miles	86
	Buchans Railway	1928	19 miles	86
	Grand Falls Central Railway Company	1957	24 miles	91
	Newfoundland Light & Power Company	1898-1948		95
	Newfoundland Railway	1881-1897		
	Reid-Newfoundland Company	1897-1923		
	Newfoundland Government Railway	1923-1926	968 miles	96
	Newfoundland Railway	1926-1949		
	Canadian National Railways	1949-1990		
Prince Edward Island				
	Prince Edward Island Railway	1871-1913		
	Canadian Government Railways	1913-1918	280 miles	103
	Canadian National Railways	1918-		
New Brunswick	New Brunswick Railway Company	1870-1891	180 miles	95
Nova Scotia	Gowrie Coal Mining Company	1877-1894	1.5 miles	89
	Lingan Colliery Railway	1861-1886	1 mile	93
Ontario	Huntsville, Lake of Bays & Lake Simcoe Railway & Navigation Company	1902-1963	1.1 miles	91
	Toronto & Nipissing Railway Company	1868-1884	114 miles	104
	Toronto Grey & Bruce Railway Company	1869-1881	190 miles	106
Quebec	Lake Champlain & St. Lawrence Junction Railway Company	1871-1880	60.5 miles	92
Alberta	Lake Louise Tramway	1912-1930	3.61 miles	93

Reference: Omer Lavallee, Narrow Gauge Railways of Canada, Railfare Enterprises Limited, 1972

TABLE1. 42-Inch Narrow Gauge Railways of the United States

State	Name	Dates	Length	Page
Arkansas	Arkansas Midland Railroad	1855-1883	48 miles	313
	Iron Mountain & Helena	1860-1881	24 miles	315
California	Chino Valley Railway	1888-1901	17 miles	323
Illinois	Moline & Southeastern Railroad	1878-1885	8 miles	389
Maine	Aroostook River Railroad	1874-1881	26 miles	407
Mississippi	Mississippi Valley & Ship Island Railroad	1874-1883	26 miles	431
	Natchez, Jackson & Columbus Railroad	1870-1889	98 miles	432
Nebraska	Covington, Columbus & Black Hills Railroad	1876-1880	26 miles	438
New Jersey	Philadelphia & Atlantic City Railway	1876-1884	54 miles	449
New York	Herkimer, Newport & Poland Railway	1880-1891	17 miles	455
Texas	Rio Grande Railroad	1866-1925	22 miles	527
Virginia	Big Sandy & Cumberland Railroad	1900-1927	33 miles	540
	Dismal Swamp Railroad	1896-1941	35 miles	543
	Suffolk & Carolina Railway	1884-1940	40 miles	546

Reference: George W. Hilton, American Narrow Gauge Railroads, Stanford University Press, Stanford, Calif., 1990.