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RECYCLING A RAILCAR CLASSIC

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RECYCLING A RAILCAR CLASSIC

***T**here may be no better testimonial to the quality and longevity of stainless steel railcars than this award-winning modernization program of Canada's transcontinental passenger fleet.*

BY JAMES BORLAND

When VIA Rail, Canada's publicly owned passenger rail company, decided to refurbish its 40-year-old transcontinental fleet of stainless steel railcars, it got more than it bargained for — more efficiency, more cost savings and more customer satisfaction.

Not only did modernizing the fleet cost less than half the price of buying new, but operating and maintenance cost savings have exceeded expectations and passenger response to the classic cars

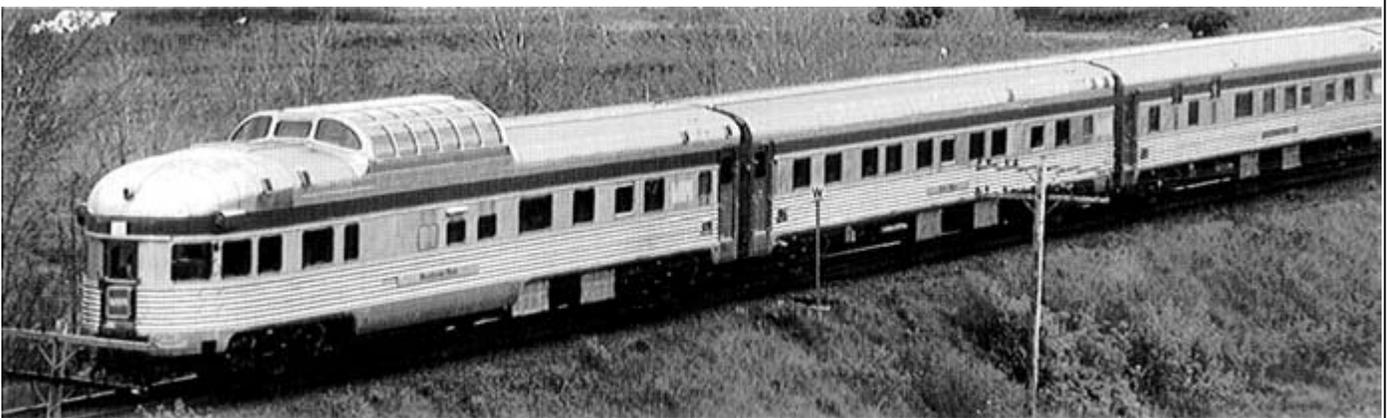
Technotransport Inc. shops in Montreal, Hoather talks about the camber of the 26-m-length cars — the slight upward arcing on the frames that flattens out as weight is added. The camber in these stainless steel cars is undiminished even after 40 years of round-the-clock use through some of Canada's most severe conditions. Other materials, says Hoather, begin to sag long before that — a sign of age, fatigue and general deterioration.

Because the most extensive modification was to convert the power supply from a generator and batteries



Stainless steel is prominent inside the refurbished VIA Rail cars.

The classic stainless steel Budd railcars retain their elegance after 40 years of service.



has been outstanding.

The initial program involved completely upgrading 181 stainless steel railcars, 157 of which had been supplied to Canadian Pacific Railway as a set in 1954-1955 by the Edward G. Budd Manufacturing Company of Philadelphia, Penn. The remaining 24 cars of similar vintage were obtained from various sources.

"They were so reliable, those cars," says Roger Hoather, VIA's project manager. "It (stainless steel) is perceived of as a luxury, but it really is a very practical material."

As he walks through the AMF

slung under each car to 480-volt power supplied from the locomotive or head end of the train, the project was called the Head End Power or HEP project.

With head-end power, electrical heating could also be installed. The original cars were heated by steam provided by a boiler in the locomotive. The steam system was difficult to control, prone to freezing and burst pipes, and costly to maintain.

Interior furnishings and passenger amenities were all upgraded, as well, to make the transcontinental journey

comparable to the comfort and luxury of a modern cruise ship.

Some 250 contracts and 800 purchase orders were involved along with 1,500 drawings and 40 separate specifications. Even so, VIA Rail officials estimate that the cost — less than \$1 million per car — was probably less than half of what it would have cost for comparable new railcars.

VIA's maintenance goal for the refurbished cars was 800,000 km between failures requiring more than five minutes' repair time. They actually

achieved more than 3.5 million km and surpassed the originally estimated \$20 million annual maintenance and operating cost savings.

Although the cars are significantly lighter than the original design largely because of elimination of the individual generators on each car, Hoather estimates they are about 15% heavier than new stainless steel railcars. Today's computer-assisted designs, he says, can optimize material use by reducing section thickness without sacrificing structural integrity.

The original framing of the cars was S20100 stainless steel. Repairs to framing were done with a low-carbon type of S30100 stainless steel, sometimes called Type 301L, while repairs to the skin and other non-structural components were done with S30400.

Hoather says the cars could probably be used for another 40 years, but complete interior upgrades would likely be required two or three times. The program is only officially expected to extend the fleet life by 20 years.

First put into service in 1992, the refurbished cars earned international recognition in 1994 when the project was selected to receive the Brunel Award by a panel of experts from the Foundation for Railway Transportation Excellence, the United States Federal Railway Administration, Amtrak, and the Watford Group of European Railway Architects and Designers.

VIA was so pleased with the program's results that it has gathered another 40 stainless railcars for a follow-up program.

"We hauled them out of graveyards all over North America," says VIA Rail's Len Williams. Some had been abandoned on railway sidings, a couple were pierced with bullet holes, one even came from the Barnum & Bailey Ringling Brothers Circus train, but the original stainless steel on all of them is basically sound after more than 60 years of service.

The first cars from this HEP-2 project are scheduled to be put in service this summer with four delivered each month beginning in August.



The award-winning interior design of VIA Rail's refurbished stainless steel railcars features stainless steel appointments throughout such as, ABOVE, in the glass-domed observation car and, COVER, armrests on the seats. BELOW, Roger Hoather, project manager for VIA Rail's Head End Power project, points out some of the spot welds on a 40-year-old, stainless steel railcar. The sides of the car were stripped-down, exposing the stainless steel structural members, so that window openings could be rebuilt to conform to the rest of the VIA fleet. After decades of continuous operation, the stainless steel on these cars remains virtually corrosion-free.