

VERMONT DMU COALITION  
Presentation to State Transportation Committee,  
Testimony of George C. Betke, Jr., Farmrail System, Inc.  
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To assure that you have a reference to all the pertinent facts and that I am quoted accurately, printed copies of my comments concerning the visual aids you have just received will be available afterward, so you won't need to take many notes.

[Slide 1] Ladies and gentlemen, I submit that your Agency of Transportation has fallen in love with a picture and the allure of "other people's money." Its agenda for the past four years has been single-minded commitment to a "virtual" product that exists only on paper. Vermont effectively is "catalog shopping" for a to-be-built vehicle that allegedly will last 40 years, but without the benefit of name-brand public acceptance or guidance from an independent testing service like Consumers Union.

Your only buyer protection in this case comes from the Joint Fiscal Office, and I commend Steve Klein and Neil Schickner for their objectivity and thoroughness in pursuing questions that should have been addressed long ago. Without them as watchdogs and a two-month delay, you probably would have been asked to rubber-stamp a poorly researched recommendation in a rush to judgment. Whatever you now decide, their investigation and analysis will have been extraordinarily valuable.

The Budd rail diesel car, or RDC, was the original DMU (Diesel Multiple Unit). As you see [2], we too have an artist's rendering, but we also can show you photographs of the very real remanufactured RDC prototype currently undergoing rigorous field testing in the harsh winter climate of northern Ontario [3]. Requests for on-site demonstrations of this car next year in three other Northeastern locations already have been received, and VIA Rail Canada (that country's Amtrak) will be leasing it and a second RDC for a four-month test to confirm cost savings from replacing a locomotive-hauled train between Toronto and Sarnia, Ontario. [4] None of these parties is considering the Colorado Railcar.

What does remanufactured mean? It means that the vehicle has been stripped down to its stainless-steel frame and shell, which are subjected to nondestructive testing to assure their integrity [5]. All-new operating components are then installed, including the latest emissions-compliant engines [6], direct-drive transmissions, alternating-current electrical system, solid-state engine controls [7], new carbody ends [8], Federal Railroad Administration-approved glass, state-of-the-art air-conditioning and heating, modern retention toilets [9], and full accessibility for handicapped persons. Finally, the all-new interior can be configured as desired to suit a particular market [10], in this case to the specifications of VIA Rail, with reclining and reversible long-distance seats [11]. If you'd like the "Vermont" to be equipped with lounge seating, a partitioned business-class section, a snack bar, drop-down movie screens, computer ports, maple leaves on the seat covers – all that is possible [12]. Details were provided to VTrans in a formal proposal delivered last June 2, accompanied by a 50-page manual of technical specifications and testing procedures. You may want to request copies of both documents to assist with your decision.

The presentation made to the Joint Transportation Oversight Committee on November 9 was revised from the original version at least to acknowledge the RDC alternative brought to VTrans's attention four years ago. A couple of you attended the meeting of the Rail Advisory Council on August 23, at which we raised serious issues about the Agency's exclusionary procurement process, woefully inadequate due diligence, and obviously predetermined sole-source outcome. (If anyone is interested in those details, printed copies of my talking points are available today.) Since that time, and after two subsequent meetings with Agency officials, VTrans has sought ways to discredit the RDC, resorting to unsupported claims reminiscent of a political attack campaign. To my knowledge, only one of the independent reference sources we suggested was ever contacted, and VTrans did not make the very detailed information obtained from him available to the Fiscal Office analyst or mention it in the November slide presentation.

The Agency's effort to save face has obliged us to knock down one straw man after another so that you have accurate information. You've probably heard the vague generalities that "RDCs are 50-year-old technology," "Amtrak won't accept them," "the Federal Railroad Administration won't approve them," "the same low-cost financing won't apply," "the frame is a huge risk," and "spare parts aren't available," all of which are untrue and can easily be refuted with a few telephone calls.

I can't, and won't, say anything negative about a product that exists only on paper. The Colorado Railcar certainly was sleek-looking, and the first order for the single-level model that VTrans is recommending to you reportedly has been placed by TriMet in Portland, Oregon. All I will say is that other attempts to introduce innovative rail passenger vehicles have involved serious problems in moving from the drawing board to the track. Newspaper archives are full of articles about Amtrak's "Acela" disc-brake problems, New York State's dysfunctional TurboTrains, Connecticut's ill-fated SPV-2000 DMU, and the exotic "Florida Fun Train" and "Marlboro Train." On the other hand, rebuilt RDCs are performing well in regularly scheduled passenger services in Dallas and Vancouver (13, 14, 15].

"New" doesn't necessarily mean "flawless," and what tests well on level terrain in Florida may not do so in the hills of Vermont, especially when dealing with widely variable heating and cooling loads or wet leaves and snowdrifts on the track. "Bugs" found in the original RDCs were identified long ago and have been addressed in our remanufactured prototype. In a short, three-year service experiment with a fragile route, the "Vermont" needs equipment that works well from day one. The State does not need another high-profile disappointment like the "Champlain Flyer" or an "Acela"-type embarrassment.

VTrans understandably has become sensitive to a conclusion it apparently reached some time ago and without your full knowledge and input. I'm going to use some of the Agency's own slides to illustrate how certain pertinent facts about our product have either been ignored or misrepresented to you. Though its presentation states the obvious reasons for substituting self-propelled equipment for locomotive-hauled trains, the spin doctors have

made an intentionally incomplete and misleading comparison of the Colorado Railcar and RDC.

[V1. CRC DMU Advantages.] The points made here are not nearly as simplistic as they may appear. There is no doubt about the RDC's impact-strength compliance, evidenced by vehicles in regularly scheduled service in Alaska, New York, and Texas. Though FRA's latest expanded standards apply only to new construction, the RDC can be further reinforced in the remanufacturing process if desired. Second, industry experience suggests that there is no assured linkage between brand-new equipment and "more predictable maintenance costs," not to mention the absurdity of claiming predictable costs for a vehicle that doesn't yet exist. Clearly, the opposite is true; no history means there is no reliable way to predict the future. "Enhanced curb appeal" so far has led to a commitment for four single-level units by only one state since the national demonstration tour nearly five years ago (a fifth car reportedly has been eliminated due to cost increases). "ADA acceptability" applies to both the Colorado Railcar and the remanufactured RDC. Though the Colorado Railcar may be "appropriately sized" in comparison with the present five-car locomotive-hauled train, its capacity of 120 passengers compares with up to 152 for a pair of RDCs. The same holds true for fuel efficiency, where the RDC has a significant advantage, and I'll say more about that important subject later. Though it seems illogical that Amtrak's \$2-million grant for transitioning to a lower-cost operation would apply only to Colorado Railcars, RDCs would not require funding for a special \$675,000 maintenance facility, since they were designed for easy maintenance in outlying locations. As Amtrak's last President remarked to me, "The last thing our industry needs is another locomotive shop."

[V2. CRC DMU Disadvantages.] The slide that was not on VTrans's screen, "DMU disadvantages," exposes the astonishing bias of the Agency's position. The original version did cite two drawbacks, "higher initial cost" and "corporate risk," referring to the \$9.5-million cost differential between products and the questionable validity of a 90% buy-back from the manufacturer. Incredibly, VTrans now wants you to believe that the Colorado Railcar has no disadvantages in comparison with the RDC, the reason why there was no slide indicating any RDC advantages. This false impression conveniently overlooks a host of important issues and supports my belief that the Agency's recommendation of the Colorado Railcar is driven mainly by financial considerations to the exclusion of other factors.

[16] Here's a listing of the RDC's corresponding advantages that VTrans seems unwilling to acknowledge or investigate. If nothing else, I'd say \$9.5-million is rather significant. One of your Agency officials said to me several months ago, "This isn't just about initial cost," and we fully agree. There's a whole lot more that you haven't been told.

No one has focused on operational considerations, where the comparative flexibility of the RDC offers the prospect of significant savings that are not easily quantified. Unplanned downtime is deadly in the transportation business. Power failures, derailments and collisions

that cause railcars to be taken out of service not only result in lost patronage and revenue, but costly scheduling disruptions, capacity shortages, passenger inconveniences, extra crew calls, equipment repositioning, and a public impression of unreliability. Unlike the paired Colorado Railcar train set, each RDC has twin engines and operator controls at both ends, so that every vehicle is reversible without turning and can be operated independently or in multiples. For instance, you could expand the market by starting single cars at St. Albans and Burlington, coupling them at Essex Junction, and running the pair on to New Haven. The same concept could apply to St. Johnsbury if that track were upgraded. You can't do that with a Colorado Railcar. Those critical flexibility and redundancy features allow capacity to be matched to market demand and trains to continue moving even if there should be an engine failure, with no need to send out a rescue team or risk a transmission problem as well. Think of the situation in terms of your automobile – under difficult driving conditions in a remote area, would you prefer to have four engines than two, four sets of powered wheels versus two, and total horsepower of 1,600 rather than 1,200? At worst, would you want to lose one engine out of four or one of two? By the way, which engines do you think will accumulate wear faster?

Let's look at some other facts the Agency doesn't choose to talk about – weight, fuel efficiency, seating capacity, and acceleration. Colorado Railcar products are notoriously heavy. An empty powered car weighs 45% more than its RDC counterpart, and a two-car set is 32% heavier. That extra weight, together with higher-displacement engines, results in fuel consumption of about 1.0 mile per gallon, according to Florida Tri-Rail, which tested the only single-level demonstrator car before the destructive fire. Our 800-horsepower prototype RDC delivered 3.0 miles per gallon during running time in recent field tests under actual operating conditions in western Ontario, even when carrying passengers and freight and paired with a less efficient 680-horsepower unit. Since Colorado Railcars must be operated in tandem because of their cab set-up, and since each RDC is separately powered, the proper comparison for two-car sets is 1.0 mile per gallon to 1.5, or 50% better mileage for the RDC. Because of the RDCs' greater passenger capacity, the comparison is even more dramatic on a seat-mile basis – 90% in favor of the RDCs. On the proposed schedule of two 500-mile, two-car cycles between St. Albans-White River Junction and New Haven, daily fuel savings with RDCs should amount to 333 gallons, about \$865 at current prices, or more than \$315,000 annually that could literally “go up in smoke.” That's a pretty compelling reason for a state that prides itself on being “green” and “thrifty” to avoid anything that might be characterized as a fuel-guzzling SUV on rails. As for acceleration, the RDCs' 76% higher horsepower-to-weight ratio results in greater tractive effort and shorter start-up time to cruising speed. Aside from cost savings, the difference in seating capacity also means that the RDCs have 27% greater revenue potential. A third Colorado Railcar would be needed more frequently to handle traffic surges, and fuel efficiency would decrease because two of the three must be powered.

[V3. Farmrail RDC Disadvantages.] Yes, it's true that the RDC looks a lot like the conventional Amtrak passenger cars now used for the “Vermont,” except that its windows are substantially larger. (Amtrak's windows are small as a defense against rock-throwers, something to think about with respect to Colorado Railcars. The RDC was designed from the

inside out in the interest of roominess and passenger amenities like overhead storage racks for personal belongings. All other things being equal, it's also true that the costs of oil and filter changes and periodic rebuilds of 10 truck-type engines will be more than for six, a trade-off against reliability considerations that I'll address later on. It also seems likely that the Amtrak grant would not be made for the RDC's, as assumed in the Fiscal Office analysis, though I would think your Congressional representatives would question why a quasi-governmental corporation is willing to subsidize introduction of a new product when a far less extravagant cost-cutting alternative is available.

[V4. CRC DMU Lease Alternative.] VTrans gives the impression that it has rejected a lease proposal from Bank of America. The Bank's side of the story is that the Agency requested a lease with a rent "holiday" for the first three years of operation in order to avoid impairment of the State's credit. Needless to say, no bank could accommodate such an extraordinary request, even for an asset with a history. We're aware that some of you asked whether Farmrail could offer a lease, and the answer is yes. We shortly will provide a term sheet from an experienced lessor of passenger equipment as a viable financing option in case the hoped-for FRA loan doesn't materialize as expected.

[V5. Additional Maintenance Cost Risk.] The quotation you see here comes from an employee of Oregon's TriMet, the only agency yet to order a single-level Colorado Railcar, a source with obvious reason to support the manufacturer. Note that her statement about the frame does not refer specifically to the RDC, but uses the kind of generic language found in a metallurgy textbook. All railcars are designed so that in-service stress is always below the endurance limit, such that they will have an indefinite fatigue life unless subjected to frequent overloading or abuse. Interestingly, Oregon Department of Transportation successfully used three unrebuilt RDCs acquired as-is from BC Rail for two years in connection with the recent Lewis & Clark bicentennial celebration. When I inquired about that experience, its former Secretary told me that she had found the RDCs "economical and easy to maintain." Stainless steel not only has unusual strength-to-weight attributes in comparison with carbon steel, but also does not require expensive periodic painting for appearance and corrosion resistance where there is exposure to dampness and salt.

[17] There is no better source for reliable maintenance information than the Chief Mechanical Officer of "Trinity Railway Express" in Dallas, which has operated a fleet of 13 rebuilt RDCs in commuter service since 1996. He gratuitously provided VTrans with an extensive analysis of predicted maintenance needs and diesel fuel consumption for the "Vermonters," based on his experience with RDCs using rebuilt components rather than new ones. That very pertinent information was not made available to the Fiscal Office or shared with you, so the draft financial analysis posted on the VTrans website in November therefore was based almost exclusively on information the Agency selectively chose to provide.

We have no way of testing the validity of future maintenance expenses projected by Colorado Railcar for a vehicle yet to be built or operated in regular service. VTrans has not

indicated what items are included or what assumptions underlie the calculations in order to facilitate “apples-to-apples” comparisons. What we do know is that none of the parties currently operating locomotive-hauled trains or RDCs has been able to justify replacing them with single-level Colorado Railcars, and VIA Rail Canada obviously believes that RDCs are far more cost-effective for its light-density routes like Toronto-Sarnia.

[V6. Factors Excluded in Farmrail Analysis.] This prejudicial nature of this slide is apparent in the use of the phrase “catastrophic failure” to imply that the RDC is structurally unsound. In millions of miles of travel over five decades, the only identifiable catastrophes are those involving derailments or collisions in which a railcar was damaged or destroyed, and the FRA is highly complimentary about the RDC’s safety record. VTrans ends this slide by asking, “Is Farmrail worth the risks?” I’m happy to talk about the real risks, which rest mainly with the Colorado Railcar proposition. There are five different kinds of risk here that have been given very superficial consideration – product risk, operating risk, financing risk, buy-back risk, and political risk [25].

Product Risk. Why would anyone even want to be first with a drawing-board product when there is nothing to fall back on if something goes wrong? You’re not just adding a few cars to a large existing fleet, as Tri-Rail is in Florida. Since Amtrak is short of equipment, if there’s a recall like the “Acela’s,” what do you do? In a short, three-year experiment with no back-up, everything needs to work from day one. It’s a lot like a new restaurant; if the early customer experience isn’t good, news travels quickly and the public reacts to unfavorable publicity accordingly.

Operating Risk. No one seems to be thinking about operational problems. In fact, the host carrier, New England Central, wasn’t advised of the proposed schedules until November and wasn’t even consulted about the equipment until someone asked the opinion of former NECR official Charlie Moore at the last meeting of the Rail Advisory Council. (He had overseen RDC operations on Vancouver Island in a prior assignment for parent company RailAmerica.) What’s the risk to passengers if there is a breakdown or accident involving a powered Colorado Railcar? Since only three of five cars would be powered and individual units are not bidirectional, any single unit can’t move by itself. Where will the spare powered car be at the time, and in what direction will it be facing? (There are only three places north of Springfield where a car could be turned.) As a practical matter, the inflexibility of the Colorado Railcar design means that 40% of capacity will often be lost when a powered car is out of service for scheduled inspection and routine maintenance or if an unforeseen problem arises requiring repairs (two cars out of five). The RDCs lose only 20% under the same circumstances. Do you really need a sixth Colorado Railcar just in case?

Financing Risk. Even the appealing FRA financing has risks. Contrary to at least two inaccurate reports in the Burlington Free Press, there is significant risk that the financing terms described to you by VTrans will not prove workable and that the procurement timetable will be further extended. According to the official in charge of FRA loan programs, there is

no precedent for a three-year waiver or deferral of debt service when the financed equipment is in revenue service; the current interest rate is a full point higher than the reported 4.25%; and the State's full faith and credit certainly will be required. Actual loan terms are yet to be determined, since the Agency has not submitted a completed application to the FRA, which has up to 90 days to respond. Even then, the final judgment rests with the federal Office of Management and Budget, which has no mandated timetable for considering loan requests, approved only three last year, and presently is delaying action on at least three more. As a result, FRA is not forwarding any new applications pending clarification of the cumbersome review and approval process. This is not "easy money," and the misimpressions left with the public in the press have not been corrected.

Buy-Back Risk. The reported 90% buy-back gimmick turns out to be conditional, if Colorado Railcar can't find another buyer after a fourth year. That provision limits the State's exposure only if it works. Who is going to buy a four-year-old used car for 90% of the cost of a new one that could be specifically designed for the user? Who pays for any changes needed to suit that customer? Who will bear the debt service while Vermont waits to see if there is a buyer or if the manufacturer can honor its buy-back agreement? How good is a \$15.8-million repurchase commitment from a small company and a management with a history of going out of business more than once? Why wouldn't the manufacturer just default again if the "Vermont" experiment with its equipment hasn't been successful? Does the Agency have solid evidence that Colorado Railcar can obtain a valid guarantee for its buy-back offer? If the deal sounds too good to be true, it usually is, and the devil always is in the details.

Political Risk. You folks have to judge the political risk of your decision. Is VTrans somehow smarter than all the other parties that have looked at the Colorado Railcar over the past four years and walked away? Is being first really an advantage or a disadvantage? A procurement official tells me that VIA Rail has rejected Colorado Railcar DMUs because "they haven't proven themselves and are very heavy." Others probably realize that their much higher price tag reflects not just the cost of metal or glass or components – it includes the substantial costs of design, engineering, marketing and contingencies that are negligible for the venerable RDC.

[V7. Or this?] I have to laugh at this final, pathetic cheap-shot at the RDC. The only thing clear about this photograph is that its focus has been altered, perhaps by Richard Nixon's make-up man. The following slide shows the original photograph that we had provided with our proposal submission [18]. The real issue is whether you have more confidence in a slick artist's rendering or a proven workhorse. While exterior appearance may attract a passenger initially, it's interior comfort and appointments that promote increased ridership and repeat patronage.

Did you notice that the latest VTrans presentation contains more slides alleging shortcomings of the RDC than the virtues of a vehicle that doesn't exist? Why is VTrans so blindly obsessed with the Colorado Railcar?

Our view is that the Agency's recommendation of the Colorado Railcar has been driven primarily by the visual appearance of "new equipment" and a financing scheme that superficially appears almost riskless – something for nothing. Our product has been dismissed as "old technology." In reality, the RDC is regarded as one of the great industrial designs of the last century, and most modern passenger rail and transit cars still are very similar in appearance. The reason is the durability and low maintenance of stainless steel, the properties of which are far superior to carbon steel. The Colorado Railcar frame actually represents old technology too, in that it relies on structural rigidity and weight to provide compression strength, just as U. S. automobile manufacturers did before Volvo engineers introduced the concept of a semi-collapsible frame to cushion impacts.

Amtrak's experience confirms its confidence in stainless-steel carbodies. It has rebuilt many Budd coaches, lounge and parlor cars from the 1940s, '50s and '60s, most recently a series of Metroliners dating from 1967, some of which regularly operate in the "Vermont" service. In Canada, VIA's extensive fleet of stainless cars built in 1953-54 remains in regular daily service on its demanding transcontinental routes, while its carbon-steel cars of the same vintage have been sold or scrapped. Both companies insist on strict standards of construction and maintenance to assure service reliability.

An Amtrak spokesman appeared at the Joint Transportation Committee's November 9 meeting and responded to a question about the \$2-million transition grant. I contacted him afterward for clarification. In that conversation, he asked me, "How many RDCs are out there?" and I said that our group alone has 33. His reply was that "Colorado Railcar could produce hundreds for use all over the country." The fact is that Vermont believes it needs only five for the "Vermont" and possibly a similar number for the "Ethan Allen Express." For less than the cost of five Colorado Railcars, both the "Vermont" and "Ethan Allen" could be re-equipped with remanufactured RDCs to produce very substantial savings in the transportation budget, and it could have happened by now instead of the end of 2008 at best. You need to decide whose interests are being furthered here by having your state act as a "guinea pig" for an unproven new product – Amtrak's, Colorado Railcar's, or Vermont travelers' and taxpayers'. If Amtrak won't risk investing in a few Colorado Railcars, why should you?

If your primary concern is the State's credit rating and the public's perception of fiscal responsibility, I must tell you that there is an even less costly solution to the "Vermont's" economics than the remanufactured RDC. We can provide five rebuilt RDCs – like those that have operated reliably for years in Texas, Ontario and British Columbia – for only \$4.5-million, using the same loan or lease financing methods. Remarkably, no one has seen fit to explore this possibility.

If Vermonters really want something sleek and trendy-looking; if you want to take the risk of being among the first with a new product; and if you're willing to pay two to four times as much for those distinctions, let's just say so rather than disparaging the time-tested

RDC. This isn't a question of whether our proposal wins or loses; it's a matter of presenting you with all the essential facts so that the legislature can make a fully informed decision. You deserve the advice of railroad experts, not highway officials or train buffs.

Finally, your VTrans representative seemingly helped to man Colorado Railcar's sales booth at a trade fair last year, and the program for the same event to be held in Worcester on March 27, 2007 features a joint presentation of the parties entitled "Vermont's DMU Revolution." Since the Agency evidently considers this a "done deal," my appearance today may be totally academic. Nonetheless, you deserve to know what has led to that result and the economic and political risks associated with the Agency's unprofessional behavior. As Fox News states, "We report, you decide." Thanks for your attention. I'll be pleased to respond to questions.

#### Optional Note

If you're concerned about the need for passengers to change trains at New Haven under the new operating concept, a potentially compelling RDC advantage is the option of adding the "Vermont" consist to Amtrak's connecting southbound train and running through to Washington. The only necessary modifications would be an alternate 480-volt electrical system compatible with Amtrak's head-end power used on the Northeast Corridor and wheel assemblies appropriate for 125-mile per hour operation. Since the RDC is self-propelled, coupling and uncoupling can be accomplished without a switching locomotive, and equipment utilization could be improved on both route segments. The Colorado Railcar is designed for independent operation and is not intended for inclusion in a conventional locomotive-hauled train.