

SURFACE TRANSPORTATION BOARD

DECISION

STB Finance Docket No. 33697

NATIONAL RAILROAD PASSENGER CORPORATION—PETITION FOR DECLARATORY
ORDER—WEIGHT OF RAIL

Decided: June 28, 2001

In Application of the National Railroad Passenger Corp. Under 49 U.S.C. 24308(a)—Springfield Terminal Railway Company, Boston and Maine Corporation, and Portland Terminal Company, STB Finance Docket No. 33381 (STB served May 29, 1998), we prescribed the terms and compensation for Amtrak's access to facilities of railroads within the Guilford Rail System (Guilford).¹ Our decision, we thought, made it possible for Amtrak to operate passenger rail service over Guilford lines between Plaistow, NH, and Portland, ME (hereafter, the Plaistow-Portland Line), in order to reintroduce Congressionally mandated passenger rail service between Boston, MA, and Portland.²

A dispute arose, however, because Amtrak wanted to operate 79 mile-per-hour service over 115-pound track, while Guilford insisted that the track on its system would have to be upgraded to 132-pound rail in order to ensure safe operation of Amtrak trains at speeds up to 79 miles per hour. On October 22, 1999, we issued a declaratory order in this proceeding (hereafter, Weight of Rail), in which we found that the installation of 115-pound, continuous welded rail on the Plaistow-Portland Line could be adequate for safe operation of trains at speeds of up to 79 miles per hour. After reviewing a recommendation by the Federal Railroad Administration (FRA), we imposed a condition that the line be rehabilitated and maintained to a standard that produces track modulus (k) values³ of not less than 2,750 lb/in² and that otherwise satisfies FRA's track safety standards for rail passenger train operations up to such speeds. The decision was based on engineering standards prescribed by AREMA, which the parties and FRA agreed should govern.

¹ The Guilford Rail System is comprised of Springfield Terminal Railway Company, the Portland Terminal Company, the Boston and Maine Corporation, and the Maine Central Railroad Company.

² Under the plan, the Boston-to-Portland service would be operated pursuant to an agreement with the Northern New England Passenger Rail Authority (NNEPRA).

³ Track modulus is defined in the American Railway Engineering and Maintenance-of-Way Association (AREMA) Manual as "load (in pounds) that causes a one-inch vertical rail deflection per lineal inch of track." Hence, the units of k are lb/in².

On March 12, 2001, Amtrak filed a motion for clarification of our Weight of Rail decision, and for an order requiring Guilford to allow it access to the Plaistow-Portland Line. In its motion, Amtrak seeks a determination that its use of certain described equipment and a specified testing methodology would be a reasonable approach to testing whether the track modulus values prescribed in Weight of Rail are met. It further seeks a determination that, if its proposed testing demonstrates that our track modulus requirements are met, no further track modulus testing would be required. Because Guilford has denied Amtrak access to the line, Amtrak also seeks entry of an order directing Guilford to allow it access for the purposes of testing track modulus.⁴ Guilford, in response, raised issues concerning the particular test to be used and the timing and frequency of testing. The parties have reached an impasse.

In a decision served March 30, 2001, we established a procedural schedule for the filing of reply and rebuttal pleadings addressing Amtrak's motion. Additionally, in view of FRA's prior participation in the proceeding and its substantial contribution to our last decision, we requested FRA to participate in this phase of the proceeding and ordered the parties to serve copies of their pleadings on that agency.

Amtrak, Guilford, and FRA now have made their submissions in accordance with our procedural decision. Guilford has replied to FRA's analysis and Amtrak subsequently filed in support of the analysis. In addition, Trainriders Northeast (Trainriders or intervener), a citizens group, has filed a statement and requested leave to intervene. As consideration of Trainriders' pleading will not broaden the issues or delay their resolution, we will grant the intervention request.

DISCUSSION AND CONCLUSIONS

Permissibility of Motion. Guilford argues that Amtrak's motion actually is an out-of-time request that the Board reconsider, and change, the Weight of Rail decision.⁵ According to Guilford, Amtrak's position that testing need be done only once is at odds with the Board's requirement that the line be rehabilitated and thereafter maintained to a standard that produces a k value equal to or greater than 2,750 lb/in².

We disagree. As Amtrak points out in its response, the disputes over testing had not arisen when Weight of Rail was issued. Now, it is obvious that there is disagreement and confusion regarding the meaning of and appropriate procedure for complying with the condition

⁴ In support of its motion, Amtrak has submitted verified statements of Michael J. Murray, Executive Director of NNEPRA, and engineers Dr. Steven M. Chrismer and David E. Staplin, both of LTK Engineering Services.

⁵ Under 49 CFR 1115.3(e), a petition for reconsideration must be filed within 20 days of service of the Board action sought to be reviewed.

we imposed in Weight of Rail. Therefore, it is appropriate that, enlightened by FRA's most recent comment and analysis, we clarify our prior decision.

Reliability of Test. The threshold issue raised in Amtrak's motion is how Amtrak can demonstrate that the rehabilitation work will result in a track modulus value of not less than 2,750 lb/in². Amtrak proposes that the Transportation Technology Center, Inc. (TTCI), a subsidiary of the Association of American Railroads (AAR), be permitted to conduct tests using its recently developed Track Loading Vehicle (TLV). Under Amtrak's proposal, the TLV would first run over the line for 2 days at approximately 10 miles per hour to measure the relative track deflection on the line. On a third and final day, the TLV would measure track modulus of locations having high track deflection identified during the initial testing.⁶

Amtrak asserts that the TLV has been extensively tested and has been found highly reliable. It argues that the TLV measurements should be taken (after the track has been tamped, ditching has been completed, and some traffic has passed over the track) under summertime conditions that will yield average, nominal values that relate to the typical working condition of the track.

Guilford contends that Amtrak's proposed method of testing track modulus will not produce reliable results.⁷ For example, Guilford complains that, in the dynamic tests, the TLV

⁶ During the 2 days of dynamic testing, the TLV would be part of a three-car consist made up of a Guilford locomotive, the TLV, an AAR-100 test car that is permanently joined to the TLV, and an empty tank car. As the consist moves over the line, test data would be generated by comparing rail head vertical position under the near-zero load provided by the empty tank car with that under the 33,000-pound wheel load of the TLV. As the in-motion track deflection measurements are not taken from a fixed-point reference, they would not measure "absolute" deflection. However, the in-motion deflection is used to determine whether potential track support problems might exist and where a follow-up measurement of track modulus should be performed. The relevant AREMA maximum deflection criterion of 0.25 inches would be used as the limiting value beyond which a follow-up track modulus measurement would be performed. At points where the moving TLV detects deflection greater than this amount, it would place a paint mark. Then, follow-up, stationary track modulus measurements at the painted points would be taken by applying TLV wheel loads of zero, 10,000, and 33,000 pounds. The deflection difference between the 10,000 and 33,000-pound loads would be used to calculate the track modulus. At any locations where the modulus is found to fall below the value of 2,750 lb/in², an inspection would be performed to determine the cause and potential solutions.

⁷ Its arguments in this area are supported by verified statements of Phillip D. Brake, Guilford's Assistant Vice President of the Engineering Department, and Dr. Allan M. Zarembski, President of ZETA-TECH Associates, Inc., a technical consulting and applied technology
(continued...)

might not reliably identify all areas where track deflection might be too high. But as the FRA points out, using the dynamic test at 10 miles per hour to locate parts of the line with lower-than-average track modulus will demonstrate the particular points at which a static test needs to be performed.⁸ Performing static tests over the entire line, by contrast, would not add value to the process and would be prohibitively expensive.

Guilford raises other technical questions about the testing process, suggesting, for example, that the load levels used in the TTCI methodology during the stationary tests will underestimate load deflection, thereby producing errors in the measured track modulus, and that Amtrak has materially overstated the track deflection threshold by selecting a limiting value of 0.25 inches. But as FRA concludes (FRA statement at 2), “[t]he TLV is . . . a state-of-the-art vehicle for applying vertical and lateral loads to the track structure and measuring any deflections in the track structure as a result of the applied loads.” Guilford has criticized the testing methodology but has not itself suggested a realistic, practical way of carrying out our prior decision. As FRA points out (*id.* at 3), the test procedure that Amtrak has proposed “is both reasonable and practical, [and it] should provide sufficient data to evaluate the average or nominal track modulus along the Plaistow-Portland Line following rehabilitation.” We agree with FRA.

Need for Repeat Testing. In Weight of Rail, we said that 115-pound rail should be adequate for safe operation of trains at speeds of up to 79 miles per hour, so long as the line is rehabilitated and maintained to a standard that produces track modulus (*k*) values of not less than 2,750 lb/in² and that otherwise satisfies the FRA’s track safety standards for rail passenger train operations at such speeds. Guilford has taken the position that this means that the line must be tested repeatedly to ensure continued compliance. In any event, it argues, a one-time summertime test is plainly insufficient, particularly in the Northeast, where there are substantial variations in conditions from season to season, and a significant potential for highly variable track modulus values.

At the outset, we must clarify that, in Weight of Rail, we did not intend to use track modulus as a track maintenance standard that would be periodically checked. Indeed, as FRA

⁷(...continued)
company.

⁸ As FRA states (FRA statement at 2-3): “Moving at slow speeds (10 miles per hour) will enable the TTCI engineers to establish relative track deflection measurements which should correlate well with deflection measurements obtained through a static test. In situations in which vertical loads are constant and the rail section does not vary, track deflection measurements can be used as a surrogate measurement of track modulus due to their close relationship. Areas where changes in track deflection measurements would indicate a lower than average track modulus would be flagged and then tested statically to confirm the track modulus value.”

points out (FRA statement at 2), “[t]rack modulus is an indicator of track longevity that can be used as a quality control indicator for renewal of track, but it is not a safety indicator that requires continuous monitoring.”⁹ Because “there is not even a general consensus on the measurement of track modulus in the industry, instituting the [specified] value as a maintenance parameter creates an impossible standard . . .” (Memorandum attached to FRA statement, at 1-2.) Thus, as long as there are other ways of ensuring continued safety after the initial test, then we believe, like FRA, that the line need only be tested once upon completion of rehabilitation, and not repeatedly thereafter. Guilford argues that FRA has revised its earlier position and, indeed, has asked the Board to disregard the engineering standards upon which Weight of Rail was based. We disagree. We see FRA’s analysis as an invaluable interpretation that supports the clarification provided in this decision.

Amtrak contends that, once an adequate track modulus is demonstrated, no further track modulus testing should be required; so long as standard maintenance practices are followed and the line is maintained to FRA Class 4 standards and is appropriately inspected, deficiencies in track support that would result in reductions in k values can be both identified and addressed.¹⁰ We agree. As FRA’s engineering analysis points out (memorandum attached to FRA statement, at 2), as a safety or maintenance criterion, “changes in track modulus along the line are more important than a specific value.” FRA acknowledges Guilford’s point that track modulus values vary over time and under differing conditions (including those that exist during winter freeze-thaw cycles), and that it thus is unreasonable to assume that the modulus value will exceed 2,750 lb/in² at all times. But FRA concludes that any localized conditions that may develop over time, which could have the potential for lowering the nominal track modulus value, would normally manifest themselves in the form of changes in track geometry. As the Federal track safety standards at 49 CFR 213.63 place strict control over the allowable deviations from various track geometry parameters, and the twice-weekly visual track inspections would likely uncover any potential problems, we agree with FRA that Amtrak’s proposed approach is both reasonable and practical. As FRA concludes with respect to 79 mile-per-hour train speed and weight of rail (FRA statement at 3):

. . . based on Amtrak’s representation that the line would be maintained to FRA Class 4 standards, that it would be subject to routine FRA-mandated track safety inspections, and that it would be periodically inspected by Amtrak’s track

⁹ As FRA notes (FRA statement at 2), “[n]o available evidence suggests track modulus is a safety or maintenance parameter to be monitored through the life of the track[; rather,] this measurement is intended to ensure satisfactory construction and stability of the track structure directly after rehabilitation.”

¹⁰ Trainriders points out that Amtrak has operated passenger rail service over 112- and 115-pound rail at speeds of at least 79 mph at various points throughout the country without taking any track modulus measurements.

geometry car, FRA has been unable to identify any safety regulatory concern with the use of 115-pound rail on the upgraded Plaistow-Portland Line.

As we stated in Weight of Rail, with regard to matters such as those presented here, we give substantial deference to FRA, which has significant expertise and primary responsibility over rail safety. FRA's statement supports Amtrak's argument that its proposed testing methodology is reliable and that the track modulus test need be conducted only once.

Access to the Line. Finally, Amtrak asserts that Guilford has refused to allow it access, based on contentions that the proposed testing is unreliable, inadequate, and unnecessarily disruptive. Therefore, Amtrak seeks a Board order directing Guilford to provide Amtrak access to conduct its track modulus testing as detailed above. Amtrak contends that we have statutory authority to enter the requested testing access order under 49 U.S.C. 24308(a)(2)(A), which gives us jurisdiction to order that rail facilities and services be made available to Amtrak.¹¹

Guilford contends that Amtrak has failed to show, as required by section 24308(a)(2)(A), that testing is necessary. We disagree. We have already found it necessary to order Guilford to permit Amtrak to operate the service, and the testing that Amtrak seeks to perform, in response to concerns raised by Guilford, is simply designed to ensure that the service that we have ordered can be safely conducted. Guilford's position on necessity, like its position on whether any test could ever be adequate, would eviscerate our prior decisions.

Guilford has failed to offer any support for its assertion that the proposed testing would be unreasonably burdensome or disruptive, and Amtrak has agreed to compensate Guilford for all costs incurred in relation to Amtrak's testing. We order Guilford to allow Amtrak access on its property so that the tests can begin and our prior decisions can be put into effect.

This action will not significantly affect either the quality of the human environment or the conservation of energy resources.

¹¹ According to Amtrak, the proposed TTCI testing would create minimal disruption for Guilford's trains on this relatively lightly used line. The TTCI equipment would be on the line for only 3 days, the testing would be closely coordinated with Guilford, and it could be stopped quickly if required so that the TLV test train could be moved to a nearby siding to clear the track. Guilford, for its part, complains that Amtrak's requested access would unduly interrupt Guilford's freight service. Guilford states that, for the last 2 years, its freight services have been inconvenienced as it has worked to meet its obligations to rehabilitate the line for the initiation of passenger service. We note in this regard that Guilford has upgraded its system using nearly \$40 million in public funds that would not have been available but for this passenger service. And Guilford argues that, once the construction project is finished, it should be allowed to focus on operating a freight railroad, without being subjected to the additional delays that would result from the proposed testing.

We find:

Track modulus testing on the Plaistow-Portland Line through use of the Track Loading Vehicle of the Transportation Technology Center, Inc., in the manner described by Amtrak, is a reasonable and practical method of testing the track to determine whether the level of rehabilitation described in our prior decision has been met. Testing should be conducted soon after rehabilitation of the line is completed. If the testing demonstrates that the track modulus requirements specified in our prior decision are met, then no further track modulus testing will be required, provided that the line is maintained to FRA Class 4 standards, the line is subject to routine FRA-mandated track safety inspections, and the line is periodically inspected by a track geometry car, as described by Amtrak.

Guilford must allow Amtrak access to the line as necessary to conduct testing and to comply with the above findings.

It is ordered:

1. Trainriders Northeast is granted leave to intervene and to participate in this proceeding.
2. Our decision of October 22, 1999, in this proceeding is clarified as discussed above.
3. Guilford must allow Amtrak access to the line so that the conditions set forth in this and our prior decision may be fulfilled.
4. This proceeding is discontinued.
5. This decision is effective on its service date.

By the Board, Chairman Morgan, Vice Chairman Clyburn, and Commissioner Burkes.

Vernon A. Williams
Secretary