Before the U.S. Surface Transportation Board

STB Docket No. EP 767

First-Mile/Last-Mile Service

Comments of the
U.S. Department of Agriculture

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Authority and Interest

The Agricultural Adjustment Act of 1938 and the Agricultural Marketing Act of 1946 entrust the Secretary of Agriculture with representing the interests of agricultural producers and shippers in improving transportation services and facilities. As one of many ways to accomplish this mission, the U.S. Department of Agriculture (USDA) initiates and participates in Surface Transportation Board (STB or Board) proceedings involving rates, charges, tariffs, practices, and services.

Introduction

USDA appreciates the Board opening this proceeding to receive comments on first-mile/last-mile (FMLM) service issues and the design of FMLM metrics. As railroads have adopted precision scheduled railroading (PSR), agricultural shippers have increasingly voiced concern over service problems at the initial and last portions of the rail shipment. Despite generally good service metrics shown in the Board's Ex Parte (EP) 724 data, reports of poor service have persisted—e.g., in the oversight hearing on demurrage, emergency service order for the Hasa plant, recent Sanimax complaint, and recent non-docketed correspondence from shippers. These persistent reports suggest that the EP 724 data are incomplete. One key gap is FMLM—the EP 724 data do not capture all the segments of a rail shipment. USDA believes FMLM data are a necessary and valuable addition. The data will provide transparency and promote better outcomes for shippers and railroads. In these comments, USDA summarizes its main points, emphasizes the need for this data, and offers a few points for the Board to consider in designing FMLM metrics.

Summary

The key takeaways, discussed in detail in these comments, include the following:

- Markets depend on accurate and timely data. FMLM is where railroads and shippers intersect, and data are needed to measure and track the quality of service at those touchpoints.
- The Board should approach FMLM metrics with a focus on predictability. USDA suggests the Board could collect delay metrics that capture deviations between plans communicated to shippers and services provided.
- USDA encourages the Board to collect raw (facility based) FMLM data and then form aggregated delay metrics for the public. The metrics provided to the public should reflect top origin-destination routes, top origin yards, and top destination yards for the main commodities and train types.
- USDA also encourages the Board to collect measures of variability (e.g., the standard deviation and/or the range) to provide a more complete picture of the *distribution* of service experienced, as opposed to only measures of central tendency, such as the average.
- Measures on the frequency of service provided would also be valuable. Since PSR, a number of shippers have complained of reduced service frequency. USDA believes this information is relevant to railroads' fulfillment of their common carrier obligation and should be tracked more systematically.

- USDA encourages the Board to collect any FMLM data on a historical basis. In the existing service data, the data's absolute levels are not, alone, very informative of "strong" or "weak" service. However, they could become informative if they were measured against a *historical benchmark*. Historical values would make the FMLM data immediately useful.

Discussion

Data Benefit Markets

Data form a critical component of efficient and well-functioning markets. Shippers and railroads rely on data to make decisions on where, when, and in what amounts to allocate limited resources. More and better information leads to better outcomes by making profitable opportunities more apparent, by making risk more manageable, and by reducing costs.

Especially when issued regularly, good data may even prevent or mitigate rail service issues before they become major challenges. Railroads operate interconnected networks. The more information is available, the more shippers and railroads can put contingency plans in place and respond to disruptions. Such proactive actions may lessen the severity of service issues, resulting in better outcomes for both shippers and railroads.

The Need for FMLM Data

Since at least the Board's May 2019 oversight hearing on demurrage and accessorial charges, shippers have expressed concern over FMLM service. At the hearing, shippers and their associations described FMLM as the "challenge," where Class I railroads are "struggling," and the "root cause to a lot of the issues."[1] Comprehensive FMLM data are key to understanding the nature and extent of these issues.

The data would be important to any rail operating model but are particularly pertinent with the industry's shift to precision scheduled railroading (PSR). In its name, PSR is connected to precise scheduling. Railroads are likely already tracking many metrics in order to achieve such strict schedules, yet no data is widely available at the car pickup and dropoff points—where railroads' schedules intersect with shipper operations. Metrics are needed to track and evaluate quality of FMLM service, especially in a highly scheduled environment.

Recent challenges across the port, trucking, and rail sectors have revealed the extent and complexity of many commodity supply chains. Disruptions have underscored the need for data and transparency on *all* links of the supply chain, including the FMLM touchpoints, not just the linehaul portions.

Delay Metrics: Plans Versus Performance and Variability Measures Matter

An essential part of performance metrics is the difference between actual performance and the service that shippers were led to expect. Of course, all shippers want improvements in actual performance. Everyone benefits if train speeds are faster and dwell times are lower. However, it is arguably much more difficult to work with unpredictable, fast service than it is to work with predictable, slow service. Unreliable service, measured by the degree to which plans differ from performance, imposes costs on users. USDA encourages the Board to design metrics that capture predictability.

[1] STB transcript, docket no. EP 754: Oversight Hearing on Demurrage and Accessorial Charges, May 22, 2019.

The biggest component of predictability is the deviation between what a railroad tells a shipper it will do and what it does. The Board's metrics should attempt to capture various aspects of railroads' communications with shippers and how that message deviates from actual performance. For instance, railroads will communicate to shippers expected service dates at various points in time. They tell shippers an initial expected service date, and then, as the date of service approaches, they convey new expectations. The Board should capture a few of these snapshots of expectations.

For instance, the Board could request railroads record a few data points on the initial communication (e.g., the date and time of the communication, the number of cars ordered, and the date and time those cars are expected to arrive), as well as time-based snapshots of what was communicated to the shipper prior to providing service. For instance, the Board could capture snapshots of communications 72, 48, and 24 hours prior to actual service. The Board's metrics would then be based around comparing the initial projection, and these snapshots, to when service was actually provided. The purpose of multiple snapshots is to capture a fuller picture of the schedule changes over time than just a single snapshot would capture.

To illustrate with an example, suppose on December 1 a railroad tells a shipper that cars will be picked up 1 week later on December 8. The railroad might then convey on December 8 that pick-up service is delayed and will be provided on December 9. Finally, suppose the railroad delays service one more time on December 9 and provides service on December 10. In this case, this shipment's delay metrics would include the wait period conveyed by the initial notification (7 days between the order date, December 1, and the expected date, December 8) and the actual wait period (9 days between the order date, December 1, and the actual service date, December 10). It would also include snapshots looking back from the actual service date. In this case, the 72-hour difference would be 2 days, the 48-hour difference would be 1 day, and the 24-hour difference would be 0 days.[2]

Instead of the time-based snapshots, the Board might also consider a more operations-based demarcation, attempting to capture the moment when a shipment enters FMLM status. As an analogy, consider the moment in parcel shipping when a package goes from "On its Way" to "Out for Delivery." For instance, the Board might capture the first communication to shippers after their cars enter the local yard. Alternatively, the Board might rely on the moment that a railroad coordinates with the shipper to schedule a precise day and time for service.

The Board might also consider capturing the number of cars associated with a delay, computing a "car-hours" or "car-days" delay metric by multiplying the number of cars in the order by the number of hours (or days) delayed. The benefit of such a metric is that it is then feasible to aggregate the wide number of FMLM service outcomes. For example, one shipper may have 50 cars 24-hours late and another customer might have 10 cars 48-hours late. The former would contribute a value of 1,200 car-hours (50 car-days) delayed and the latter would contribute a value of 480 car-hours (20 car-days) delayed. However, delays for small shipment sizes might be

[2] These are calculated as follows: (1) 72 hours prior to actual delivery, the railroad said service would be provided on December 8 with actual service on December 10, a difference of 2 days; (2) 48 hours prior to actual delivery, the railroad said service would be provided on December 9 but actual service was on December 10, a difference of 1 day; and (3) 24 hours prior to actual delivery, the railroad said service would be provided on December 10 and it was provided on December 10, or no difference.

hidden by a car-hours metric, so there is value in collecting both measures—the unweighted delay in hours and weighted delay in car-hours.

The Board should consider collecting this raw, unaggregated data from the railroads and computing any additional calculations or aggregations itself to summarize the data and remove confidentiality concerns in public FMLM metrics. There are three main benefits to this approach. The first benefit is that the Board would then have the complete data in their hands. Any reports of service issues could be directly inspected by the Board, whether the issue appeared in the aggregate data or not. The second benefit is the Board would be able to more easily discover the best ways to summarize publicly accessible data. Because this is new data, there is likely some amount of exploration required to find the aggregations that best summarize the distribution of data across locations, railroads, car types, etc. It is challenging to identify these upfront, but they could be easily identified through inspection of the full raw data. Third, it would significantly reduce the burden on railroads. Lessening this burden reduces a constraint in choosing which calculations and aggregations to distribute and ultimately leads to more and better data provided to the public.

Because it is problematic to provide service earlier than expected as well as later than expected, the metrics should be constructed to avoid early and late shipments averaging out. The Board could compute the average of the absolute value of these deviations across all shipments completed in a given week. The Board could also compute separate metrics on shipments that were early, on-time, and late.

A system-wide average would not likely be all that useful to shippers when disruptions and poor service are often localized to specific routes, regions, and commodities. Railroads will likely have very different baseline performance metrics for intermodal traffic versus carload traffic and for commodities within their carload traffic. The Board should consider grouping the delay metrics by top (on a tonnage basis) origin-destination yard pairs, top originating yards, top terminating yards, and by commodity and train types.[3] That is, each week, the railroads would submit a series of tables (or the Board would compute these tables from the raw data), where each table shows delay metrics broken out by a different grouping variable (or set of variables). From the raw data, each of these tables could be generated through a relatively straightforward query. Therefore, more complicated group variables (e.g., grouping by commodity and yard) should be considered.

The figure on the last page illustrates how USDA conceives of these metrics. It shows 2 of the 4 proposed time periods—the initial and 48-hour window prior to the actual service date. The top table in the figure represents hypothetical shipment-level data owned by a railroad. Within the table, the first set of columns shows traditional shipment-attribute data, such as that seen in the Carload Waybill Sample. The next set of columns are the estimated time of arrival (ETA) communications that would be captured by the railroad.[4] The last set of columns calculates the

[3] It is worth emphasizing that these metrics would be calculated at the shipment level and would be defined as deviation between communicated estimated time of arrival and the date service is provided *at a shipper's facility*. Aggregations over shipments might then be grouped by, for instance, the originating yard as a means of summarizing data and avoiding railroad/shipper confidentiality concerns. However the data are aggregated, the metrics would be calculated at the shipper-facility level.

[4] The Train II User Manual on the Railinc website appears to show both initial and ongoing ETA data available for a shipment: https://public.railinc.com/sites/default/files/documents/TrainII.pdf.

proposed delay metrics from the ETA columns. The two bottom tables illustrate the kinds of summary tables either the Board or the railroads would compute each week.

USDA encourages the Board to distribute some measures of variation, such as the standard deviation of these differences between planned and actual performance and/or the range. In computing any aggregate value, such as the average, calculating additional descriptive statistics measuring variability should be trivial. Each would just be an additional column added to the tables submitted each week.

USDA believes these delay metrics would nicely complement the Board's existing service metrics and any other new FMLM metrics developed in this proceeding. The proposed delay metrics would capture rail performance in a more holistic manner than existing metrics, but the delay metrics would not explain why delays arose. The existing, more operational, metrics would illuminate whether delays are arising from, for instance, slower speeds or longer dwell, but the delay metrics would also show issues in FMLM service, even if speeds and dwell times were normal.

Service Frequency Should be Included in the Metrics

While shippers have expressed many concerns over the predictability of rail service, they have also expressed concerns over frequency. The Hasa and Sanimax cases are two prominent examples of railroads cutting service frequency—in these cases, from 5 to 3 days per week.[5] USDA has heard reports of service changes like this, separate from the cases themselves, but it is difficult to know the extent of these changes without more systematic data. USDA believes this kind of data is crucial to evaluating the question of whether railroads are meeting their common carrier obligation.

USDA encourages the Board to begin collecting service frequency statistics. The delay metrics discussed above are defined at the shipment level and aggregated over variables like origin yard, commodity, or train type. In contrast, frequency metrics would be defined at the shipper facility level. The Board might count the number of times or days that service was provided to each facility in a given week and the amount of service provided, then aggregate over similar location, commodity, and train-type variables.

Conclusion

USDA appreciates the Board's invitation for comments on FMLM service and metrics. The existing service metrics have been valuable for identifying ongoing service issues. However, there appear to be gaps between shipper accounts of service and the reported data. While a few of these may be anomalous or temporary issues, the volume of shipper complaints and their similarities indicate that there may be more systematic service issues that are missed in the existing data. USDA believes that the addition of FMLM service metrics will add significant value to the existing metrics.

The FMLM data would be especially useful if historical data could be collected, which could help gauge the extent to which railroads have cut (or raised) service as they have implemented PSR. Especially when aggregated over the entire rail network, some delays will always exist. That fact makes it difficult to gauge at what "level" these metrics become indicative of a problem

[5] STB decision, docket no. NOR 42165: Hasa, Inc. v. Union Pacific Railroad Company, August 21, 2019; STB decision, docket no. NOR 42171: Sanimax USA LLC v. Union Pacific Railroad Company, November 2, 2021.

worthy of more scrutiny. Being able to compare current data to recent weeks and to prior years is a crucial way of establishing baseline levels of service and evaluating changes from those levels. The more historical data the Board can collect, the more immediately useful the FMLM data will be. Amid the massive shift to PSR and ongoing recent supply chain issues, the need for useable data is particularly keen now.

Respectfully submitted,

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Exhibit:

Example Shipment Data

Shipment Attributes						Captured ETA Info				Computed Delay Metrics				
Shipment ID	Origin Facility ID	Number of Cars	Train Type	Commodity	Shipment's Originating Yard	Initial Communication Date	Initial ETA	48-Hour ETA	Car Pick-Up Date	Initial ETA Window	Initial ETA Delay (Days)	Initial ETA Delay (Car-Days)	48-Hour ETA Delay (Days)	48-Hour ETA Delay (Car-Days)
1	AAA	10	Manifest	Grain	Kansas City	12/1	12/8	12/9	12/10	7	2	20	1	10
2	BBB	75	Unit	Intermodal	Los Angeles	12/4	12/6	12/6	12/7	2	1	75	1	75
3	AAA	110	Shuttle	Grain	Kansas City	12/3	12/12	12/13	12/13	9	1	110	0	0
4	CCC	5	Manifest	Intermodal	Chicago	12/1	12/6	12/13	12/10	5	4	20	3	15
5	DDD	110	Shuttle	Grain	Kansas City	12/1	12/12	12/15	12/20	11	8	880	5	550

Example Commodity-Aggregated Table

Commodity	Total Cars	Initial ETA Delay (Average Days)	Initial ETA Delay (Total Car-Days)	48-Hour ETA Delay (Average Days)	48-Hour ETA Delay (Total Car-Days)
Grain	230	3.67	1010	2.00	560
Intermodal	80	2.50	95	2.00	90

Example Yard-Aggregated Table

Commodity	Total Cars	Initial ETA Delay (Average Days)	Initial ETA Delay (Total Car-Days)	48-Hour ETA Delay (Average Days)	48-Hour ETA Delay (Total Car-Days)
Chicago	5	4.00	20	3.00	15
Kansas City	230	3.67	1010	2.00	560