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March 30, 2016

BY E-FILING

Ms. Cynthia T. Brown
Chief, Section of Administration
Office of Proceedings
Surface Transportation Board
395 E Street, S.W.
Washington, D.C. 20423-0001

Re: ***On-Time Performance Under Section 213 of the Passenger Rail Investment and Improvement Act of 2008*** **(Docket No. EP 726)**

Dear Ms. Brown:

Enclosed for filing in the above-referenced docket please find the Reply Comments of Canadian National Railway Company.

Yours truly,

David A. Hirsh

Enclosure

BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. EP 726

ON-TIME PERFORMANCE UNDER SECTION 213 OF THE
PASSENGER RAIL INVESTMENT AND IMPROVEMENT ACT OF 2008

REPLY COMMENTS OF CANADIAN NATIONAL RAILWAY COMPANY

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March 30, 2016

BEFORE THE
SURFACE TRANSPORTATION BOARD

Docket No. EP 726

ON-TIME PERFORMANCE UNDER SECTION 213 OF THE
PASSENGER RAIL INVESTMENT AND IMPROVEMENT ACT OF 2008

REPLY COMMENTS OF
CANADIAN NATIONAL RAILWAY COMPANY

Canadian National Railway Company and its U.S. rail carrier subsidiaries (collectively, "CN") respectfully submit these reply comments pursuant to the Board's Notice of Proposed Rulemaking in Docket No. EP 726, *On-Time Performance Under Section 213 of the Passenger Rail Investment and Improvement Act of 2008* (Dec. 28, 2015).[1]

CN's opening comments (including the opening comments of AAR that CN endorsed) made these principal points: (1) the Board lacks authority to define "on-time performance" ("OTP") to implement an OTP trigger for investigations under Section 213 of PRIIA – but if the Board rejects that position, then (2) the Board should adopt the on-time performance metrics of Amtrak-host railroad operating agreements as the basis for determining if trains are on time; and (3) the Board should state in this proceeding or in its policy statement under consideration in Docket No. EP 728, *Policy Statement on Implementing Intercity Passenger Train On-Time Performance and Preference Provisions of 49 U.S.C. § 24308(c) and (f)*, that only data from the latest four full quarters will be used as a basis for launching a Section 213 investigation. This

[1] In addition to submitting these comments, CN joins the Reply Comments of the Association of American Railroads ("AAR").

reply focuses on the comments of Amtrak and others supporting adoption of all-stations on-time performance ("ASOTP") as an investigation trigger under Section 213 of PRIIA and opposing the use of Amtrak-host railroad operating agreement metrics for such a trigger.

COMMENTS

This proceeding is about the OTP trigger for investigations under Section 213 of PRIIA. Investigations can be costly and resource-intensive for the host railroads, Amtrak, and the Board, and they should not be undertaken without reasonable assurance there is a problem worth investigating. The Board should seek to minimize the number of false positives (trains that trip the trigger for investigation, but do not merit investigation) that could activate the trigger, by adopting a trigger that is most likely to identify performance that merits investigation. The appropriate trigger is one based on the on-time performance metrics in Amtrak-host railroad operating agreements.

In Part I, below, using Amtrak's services over CN as an example, we demonstrate why ASOTP should not be a trigger. It produces too many false positives when applied to Amtrak trains with schedules that provide insufficient recovery time for intermediate stations. In Part II, we discuss why other arguments for using ASOTP as a trigger, including arguments it would better identify performance worth investigating, are flawed and unsupported. In Part III, we rebut Amtrak's arguments against using the on-time performance measures of Amtrak-host railroad operating agreements as a trigger for investigation.

I. AMTRAK SERVICES ON CN SHOW ASOTP WOULD BE A FLAWED INVESTIGATION TRIGGER BECAUSE AMTRAK'S SCHEDULES OFTEN PROVIDE INSUFFICIENT RECOVERY TIME FOR INTERMEDIATE STATIONS.

As discussed in AAR's Reply Comments, ASOTP would be a poor investigation trigger because it would produce too many false positives (*i.e.*, indications that an investigation is warranted when it is not). Many Amtrak trains operate under schedules in which recovery time is concentrated toward the endpoint of the route. Concentrating recovery time this way minimizes total recovery time and overall schedule length by assuring that all recovery time will be available to offset delays prior to performance measurement, regardless of where delays might occur in the route.[2] Such schedules, however, do not provide sufficient recovery time for individual intermediate stations.

For trains operating under such schedules, a trigger based on on-time performance at each intermediate station is unlikely to indicate the quality of overall performance, since little or no recovery time will have been provided for intermediate route segments. For segments with no recovery time, any delay in that segment will cause the train to fall behind schedule and be "late"

[2] When recovery time is spread throughout a route, it is lost if not used to offset delays that occur prior to the segment to which it is assigned. If an Amtrak train arrives early at an intermediate station because of unused recovery time, it must idle there until its scheduled departure time, and the benefit of that unused recovery time is lost. Accordingly, additional recovery time is required to maintain the same level of endpoint on-time performance ("EPOTP") when the recovery time is spread among intermediate stations rather than concentrated at the endpoint.

Many commenters miss this point and wrongly assume that measuring OTP at a train's endpoint (rather than measuring ASOTP) will increase pressure by host railroads to lengthen overall schedule time. *See, e.g.*, Comments of the Michigan Association of Railroad Passengers, Inc. ("MARP Comments") at 2; Comments of the Michigan Department Transportation ("MIDOT Comments") at 2; Comments of the North Carolina Department of Transportation ("NCDOT Comments") at 3; Comments of the States for Passenger Rail Coalition, Inc. at 3. The opposite is true. If ASOTP is adopted as an investigation trigger, additional overall recovery time would have to be added to schedules in order to provide adequate recovery time for intermediate stations.

if delays exceed schedule tolerance. For just this reason, FRA and Amtrak deferred implementing their all-stations metric for two years to provide time for necessary schedule adjustments (during that period they published ASOTP data for informational purposes only).[3] At least for the trains that CN serves, however, the schedule adjustments have not occurred.

Amtrak services on CN's lines therefore provide a good example of schedules with inadequate recovery time for intermediate stations and of how ASOTP would trigger unwarranted investigations if it were adopted as an investigation trigger.[4] For each of the four trains that constitute Amtrak's Illini/Saluki service, 100% of the recovery minutes (and over 85% of the total recovery plus miscellaneous minutes) are allocated to the final segment of the route. There are zero minutes of recovery time at any station prior to the final station. When ASOTP is applied to measure the performance of trains running on those schedules, the results can be highly misleading. Even if a train suffers only minor delays, with no available recovery time those delays will cumulate during the train's run and likely result in the train falling behind schedule at intermediate stations. If ASOTP were adopted as a trigger, it would wrongly subject such trains to investigation despite their overall good performance, simply because their schedules are designed with insufficient recovery time for intermediate stations.[5]

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[3] Response to Comments, Issuance of Metrics and Standards, *Metrics and Standards for Intercity Passenger Rail Service* at 18, Docket No. FRA-2009-0016 (May 12, 2010), http://www.fra.dot.gov/Elib/Document/1511.

[4] Although scheduling issues are within the scope of investigation under 49 U.S.C. 24308(f)(1), that does not mean that every schedule issue warrants triggering an investigation.

[5] To make matters worse, as CN demonstrated in the on-going proceeding to set the terms and conditions of CN's operating agreement with Amtrak, the "pure" run time in the schedule for Illini/Saluki trains is too low, meaning that trains are frequently unable to operate within the time scheduled between stations even when they do not experience a delay. Opening Evidence of Illinois Central Railroad Company and Grand Trunk Western Railroad Company, Joint Verified Statement of Harald Krueger, Brian Doyle, and Anne Morehouse at 36, *Application of the Nat'l*

Amtrak presents several charts as Exhibit 4 to its comments. They show station-by-station OTP for various trains in various quarters. Amtrak claims those charts demonstrate EPOTP would be a deficient investigation trigger because EPOTP can vary from the OTP experienced at intermediate stations. Amtrak Comment at 8. But what those charts tend to demonstrate instead is the insufficiency of recovery time at intermediate stations and the fact that ASOTP performance variation from EPOTP does not indicate train performance that merits investigation.

For example, because 100% of Illini/Saluki Train 393's recovery time is allocated to the final station-to-station segment, OTP at early stations naturally declines as the train cumulates delays along its route, and then rises at the final station when the recovery time finally becomes available to offset delays. This pattern and the resulting poor ASOTP do not indicate unreasonable delays between intermediate stations that require investigation. It instead demonstrates that ASOTP provides no meaningful indication of train performance when sufficient recovery time is not provided for intermediate stations. That Train 393 arrived on-time at its endpoint over 80% of the time demonstrates that the train generally experienced less total delay than the total recovery time provided in its schedule, which indicates good overall performance (*i.e.*, no excessive overall delay).

Other charts in Amtrak's Exhibit 4 also suggest that the underlying cause of low intermediate station OTP is poor schedule construction rather than excessive delays. For example, the chart for the Blue Water Train 364 shows frequent significant delays departing the congested Chicago terminal, but after that it operates more or less consistently until the endpoint.

R.R. Passenger Corp. Under 49 U.S.C. § 24308(a)—Canadian Nat'l Ry. Co., Docket No. FD 35743 (Sept. 4, 2015).

Here, more recovery time should be provided between Chicago and New Buffalo, which includes operations over Norfolk Southern Railway Company's ("NS") heavily congested Chicago Line between Porter and Chicago.[6] Such an adjustment would likely improve performance at all subsequent stations. No investigation should be required to reach that conclusion.

Given the frequent lack of sufficient recovery time for intermediate stations in Amtrak's schedules, ASOTP cannot be relied upon as a metric to reasonably identify trains for STB investigation. It would trigger too many unwarranted investigations.

II. AMTRAK AND OTHER COMMENTERS OVERSTATE THE BENEFITS AND UNDERSTATE THE COSTS OF USING ASOTP AS AN INVESTIGATION TRIGGER.

The comments advocating ASOTP as an investigation trigger also ignore its other failings and limitations. Amtrak argues that ASOTP is "the only way" to measure accurately a train's performance and avoid "distortions in the data" (Amtrak Comment at 7), as if ASOTP accomplishes either. Other comments argue that a failure to include intermediate station OTP as a trigger is tantamount to "ignor[ing]," "discriminat[ing] against," "disenfranchis[ing]," or failing to consider the needs of passengers at intermediate stations, wrongly implying that an ASOTP trigger is necessary to permit the investigation of poor performance at intermediate stations.[7] Many wrongly assume that an ASOTP trigger would do the best job of triggering potential investigations of problems at individual intermediate stations because it includes OTP

[6] NS raises a similar problem concerning an insufficient schedule for this congested portion of its network for the Wolverine service. NS Comments at 17-18.

[7] *See*, Comments of Sen. Richard J. Durbin at 1-2; MARP Comments at 2; Comments of the New York State Department of Transportation at 9.

measures of all such stations. None acknowledges, much less addresses, the fundamental problems and limitations of ASOTP that make it an unreliable indicator of train performance.

Amtrak's measurement of ASOTP is based on a single average OTP calculated by giving equal weight to all the stations served by a train over its full route, without regard to individual hosts. This produces a poor proxy for overall train performance. We discussed in Part I why one significant problem with use of ASOTP as a trigger is the false positives it would produce if applied to trains operating under schedules that do not provide adequate recovery time for intermediate stations. Other significant flaws with ASOTP stem from it giving equal weight to all stations, regardless of whether a station serves one passenger or hundreds, and the fact that it is not specific to Amtrak operations over individual hosts.

The flaw of equal station weighting can readily lead to another species of false positives because under an ASOTP trigger a train that is performing well even for the overwhelming majority of its passengers may trigger an investigation. For example, Amtrak's Train 59 serves three very high volume stations, Chicago, Memphis and New Orleans, and many lower volume intermediate stations. Its OTP at the high volume stations generally exceeds 80%, but its OTP at much lower volume stations generally drags its ASOTP below 80% if all stations are counted equally. Under an ASOTP trigger, this train would be subject to investigation even if a substantial majority of passengers was being well served.[8]

There is also no sound basis for concluding that ASOTP does a better job than on-time performance metrics under Amtrak-host railroad operating agreements or EPOTP identifying poorly performing trains that should potentially be subject to investigation. Amtrak and others

[8] Amtrak has not made public the ridership data necessary to determine the full extent of this problem for other Amtrak trains.

criticize the use of EPOTP as a trigger because high EPOTP sometimes "varies significantly from performance at other stations along the route."[9] But the same is true of ASOTP – high ASOTP does not guarantee consistent performance across all stations. In the first quarter of fiscal year 2015, Amtrak Train 351 had ASOTP of 80.5%, but on a station-by-station basis, it had an OTP high of 100% (at Pontiac, its origin) and an OTP low of 23.9% (at Chicago, its endpoint) (a difference of 76.1 percentage points). Three other stations also had OTP below 80%. Using an ASOTP metric, however, the stations with low OTP would not be subject to investigation.

In any event, the concern raised by Amtrak and others regarding instances when a train has high quarterly EPOTP and low ASOTP turn out to be rare – only about 4% of the total trains operated during the quarter. *See* Exhibit 1, attached. In addition, concerns about triggering an investigation for these rare cases are overstated for another reason – no investigation is required for trains with high EPOTP and low ASOTP to reach the conclusion they might benefit from a schedule adjustment.

Further, if as Amtrak suggests disparities between EPOTP and ASOTP should be regarded as a problem, those disparities would create an even bigger problem if ASOTP were used as a trigger instead of EPOTP. In the 4th quarter of Amtrak's 2015 Fiscal Year (the most recent quarter for which data is available), 31 trains achieved ASOTP of 80% but did not achieve EPOTP of 80%, whereas only 10 trains achieved EPOTP of 80% but did not achieve ASOTP of

[9] Amtrak Comments at 8. See also MIDOT Comments at 2 (EPOTP fails "to ensure performance for interim station stops"); Comments of the Commonwealth of Virginia Department of Rail and Public Transportation at 1 (EPOTP "does not provide a fully accurate assessment of trains originating in and operating between intermediate points along its route").

80%. This demonstrates that an ASOTP trigger would do a considerably worse job of avoiding disparities with EPOTP than the reverse.

Several others support ASOTP as a trigger because they mistakenly believe it would facilitate the investigation of isolated problems on multi-host routes that may be related to individual hosts.[10] They assume a trigger that measures OTP for individual stations will accomplish that goal, or they urge that the Board adopt a trigger that measures Amtrak train performance at the specific locations where trains are handed off between hosts (*e.g.*, MARP Comments at 2-3). These arguments underscore the confusing nature of ASOTP and the fact that many of its supporters misunderstand how it works; they actually demonstrate that the on-time performance metrics under Amtrak-host railroad operating agreements are the only logical choice for an investigation trigger.

For both single-carrier and multi-carrier routes, ASOTP as determined and published by Amtrak is based on a train's average OTP at all stations along its full route. It does not individually measure host portions of routes or otherwise isolate the performance of individual hosts. Nor does it measure performance to hand off points between carriers, unless they occur at passenger stations, which is often not the case. EPOTP shares these same limitations – it covers each train's full route across hosts and does not measure hand-off points. The only OTP metrics that provide a trigger focused on individual host portions of train movements are the on-time performance metrics under Amtrak-host railroad operating agreements, as proposed by CN, AAR, and others.

Finally, Amtrak asserts that if performance is measured only at the endpoint of a route, hosts will "place little or no emphasis on trying to deliver Amtrak trains to intermediate stations

[10] *See, e.g.*, NCDOT Comments at 2; MIDOT Comments at 2; MARP Comments at 2-3.

on time, and instead focus solely on arriving at the endpoint on time." Amtrak Comment at 8. Amtrak's assertion is inconsistent with the way CN operates in the real world. CN's dispatchers do all that is reasonably within their control to help Amtrak keep its trains on schedule, even in the face of poorly designed schedules that often have insufficient run and recovery time on many segments. CN and its dispatchers are amply motivated by the host's statutory preference obligations, by contractual incentives, by reputational concerns, and by a general organizational culture of moving trains as much on schedule and with as little delay as possible to serve customers and maintain network fluidity. Moreover, even when performance is measured at the endpoint, dispatchers strive to keep Amtrak trains moving throughout their entire movement, including to intermediate stations, because they cannot reasonably predict whether there might be subsequent delays down the line that would otherwise prevent an Amtrak train from reaching its endpoint on time.

III. AMTRAK'S CRITICISMS OF OPERATING AGREEMENT METRICS AS AN INVESTIGATION TRIGGER ARE UNWARRANTED.

Amtrak raises three untenable arguments against using metrics under its operating agreements with host carriers as an investigation trigger. Amtrak Comment at 6 n.3.

It argues that operating agreement performance measures "are not uniform across railroads." *Id*. This is true, but uniformity is not relevant to this proceeding. The question here is the best trigger for determining whether individual trains are performing so poorly as to warrant an investigation. Trains vary greatly in routes, stations, schedules, and operating conditions. Amtrak and its hosts through their operating agreements have settled on the best way to measure the performance of these individual trains, based on extensive experience and

discussions. Utilizing those measures will reflect the key elements of train performance better than a one-size-fits-all approach.[11]

Amtrak next argues that using operating agreement performance measures "do[es] not involve a simple calculation." *Id.* While simplicity is an admirable goal, it should yield to reliability and accuracy where it can reasonably do so. Whether or not the calculation is simple, operating agreement performance measures are regularly reported by the host railroads and can be easily applied by the Board. For CN's services at least, the calculation is subject to a reconciliation and dispute resolution process with Amtrak.

Finally, Amtrak argues that operating agreement metrics "bear only an indirect relationship to the experience of Amtrak passengers." *Id.* That is true, however, for any proxy for train performance, including ASOTP. By combining varying OTP across multiple stations, ASOTP produces a single number that will bear only an indirect relationship to the ridership experience of individual passengers, none of whom detrain at successive, much less all, stations. Further, by failing to weight the calculation by numbers of detraining passengers, ASOTP strays even further from a direct relationship to passenger experience.

[11] ASOTP, for example, applies the same rote tolerance to all stations regardless of the distance between stations or the total distance traveled by the train.

CONCLUSION

If the Board rejects CN's argument it lacks authority to establish a definition of "on time" to implement an OTP trigger for investigations under Section 213 of PRIIA, then CN urges the Board to adopt a definition based on the metrics under Amtrak-host railroad operating agreements.

Respectfully submitted,

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March 30, 2016

EXHIBIT 1

Endpoint and All-Stations On-time Performance by Train
in the 4th Quarter of Amtrak's Fiscal Year 2015

Service	Train #	Endpoint	ASOTP	Passes
Capitol Corridor	520	95.40%	98.10%	BOTH
Capitol Corridor	521	96.90%	97.10%	BOTH
Capitol Corridor	522	96.90%	98.30%	BOTH
Capitol Corridor	523	96.90%	98.60%	BOTH
Capitol Corridor	524	92.30%	94.70%	BOTH
Capitol Corridor	525	93.80%	96.70%	BOTH
Capitol Corridor	526	89.20%	95.40%	BOTH
Capitol Corridor	527	89.20%	89.60%	BOTH
Capitol Corridor	528	96.90%	95.30%	BOTH
Capitol Corridor	529	89.20%	94.50%	BOTH
Capitol Corridor	530	96.90%	97.90%	BOTH
Capitol Corridor	531	90.80%	96.00%	BOTH
Capitol Corridor	532	96.90%	96.00%	BOTH
Capitol Corridor	533	98.50%	98.60%	BOTH
Capitol Corridor	534	95.40%	97.70%	BOTH
Capitol Corridor	535	92.30%	93.00%	BOTH
Capitol Corridor	536	93.80%	94.10%	BOTH
Capitol Corridor	537	87.70%	91.60%	BOTH
Capitol Corridor	538	92.30%	96.30%	BOTH
Capitol Corridor	540	95.40%	95.40%	BOTH
Capitol Corridor	541	96.90%	97.70%	BOTH
Capitol Corridor	542	95.40%	96.70%	BOTH
Capitol Corridor	543	90.80%	96.60%	BOTH
Capitol Corridor	544	95.40%	94.90%	BOTH
Capitol Corridor	545	96.90%	96.70%	BOTH
Capitol Corridor	546	92.30%	90.70%	BOTH
Capitol Corridor	547	92.30%	94.00%	BOTH
Capitol Corridor	548	89.20%	91.90%	BOTH
Capitol Corridor	549	95.40%	96.40%	BOTH
Capitol Corridor	551	96.90%	99.60%	BOTH
Capitol Corridor	720	100.00%	100.00%	BOTH
Capitol Corridor	723	96.30%	96.60%	BOTH
Capitol Corridor	724	92.60%	93.40%	BOTH
Capitol Corridor	727	100.00%	100.00%	BOTH
Capitol Corridor	728	96.30%	96.60%	BOTH
Capitol Corridor	729	88.90%	93.70%	BOTH
Capitol Corridor	732	88.90%	93.50%	BOTH
Capitol Corridor	733	88.90%	97.40%	BOTH
Capitol Corridor	734	100.00%	97.60%	BOTH
Capitol Corridor	736	100.00%	96.80%	BOTH
Capitol Corridor	737	88.90%	91.00%	BOTH
Capitol Corridor	738	96.30%	95.20%	BOTH

Service	Train #	Endpoint	ASOTP	Passes
Capitol Corridor	741	88.90%	94.40%	BOTH
Capitol Corridor	742	81.50%	88.50%	BOTH
Capitol Corridor	743	81.50%	94.10%	BOTH
Capitol Corridor	744	85.20%	89.10%	BOTH
Capitol Corridor	745	96.30%	99.50%	BOTH
Capitol Corridor	746	92.60%	98.10%	BOTH
Capitol Corridor	747	92.60%	97.60%	BOTH
Capitol Corridor	748	85.20%	90.60%	BOTH
Capitol Corridor	749	100.00%	99.10%	BOTH
Capitol Corridor	751	92.60%	96.80%	BOTH
Carolinian	79	**22.80%**	**40.50%**	NEITHER
Carolinian	80	**65.20%**	**57.70%**	NEITHER
Cascades	500	81.50%	**73.30%**	Endpoint
Cascades	501	**79.30%**	**77.60%**	NEITHER
Cascades	503	96.70%	96.10%	BOTH
Cascades	505	96.40%	97.90%	BOTH
Cascades	506	80.40%	**65.80%**	Endpoint
Cascades	507	**71.70%**	**72.20%**	NEITHER
Cascades	508	81.50%	**72.90%**	Endpoint
Cascades	509	**79.30%**	**73.10%**	NEITHER
Cascades	510	**60.00%**	86.20%	ASOTP
Cascades	513	**77.20%**	**66.60%**	NEITHER
Cascades	516	**56.50%**	**68.20%**	NEITHER
Cascades	517	**76.70%**	80.80%	ASOTP
Downeaster	680	**63.10%**	**76.30%**	NEITHER
Downeaster	681	**32.30%**	**72.60%**	NEITHER
Downeaster	682	**63.10%**	**76.90%**	NEITHER
Downeaster	683	**46.20%**	82.10%	ASOTP
Downeaster	684	**52.30%**	**71.50%**	NEITHER
Downeaster	685	**36.90%**	**75.90%**	NEITHER
Downeaster	686	**61.50%**	83.60%	ASOTP
Downeaster	687	**47.70%**	**75.70%**	NEITHER
Downeaster	688	**67.70%**	85.00%	ASOTP
Downeaster	689	**63.10%**	90.40%	ASOTP
Downeaster	690	**51.90%**	**71.90%**	NEITHER
Downeaster	691	**14.80%**	**76.80%**	NEITHER
Downeaster	692	**37.00%**	**66.00%**	NEITHER
Downeaster	693	**51.90%**	83.50%	ASOTP
Downeaster	694	**59.30%**	**74.90%**	NEITHER
Downeaster	695	**51.90%**	**79.30%**	NEITHER
Downeaster	696	**70.40%**	87.30%	ASOTP
Downeaster	697	**51.90%**	81.10%	ASOTP
Downeaster	698	**55.60%**	86.00%	ASOTP
Downeaster	699	**70.40%**	89.30%	ASOTP

Service	Train #	Endpoint	ASOTP	Passes
Adirondack	68	**29.30%**	**29.60%**	NEITHER
Adirondack	69	**25.00%**	**52.00%**	NEITHER
Maple Leaf	63	**46.70%**	**48.30%**	NEITHER
Maple Leaf	64	**40.20%**	**36.80%**	NEITHER
New York - Albany	230	92.20%	97.80%	BOTH
New York - Albany	232	84.40%	96.90%	BOTH
New York - Albany	233	**48.90%**	**78.30%**	NEITHER
New York - Albany	234	90.60%	98.00%	BOTH
New York - Albany	235	**51.60%**	86.60%	ASOTP
New York - Albany	236	82.60%	92.10%	BOTH
New York - Albany	237	**42.20%**	**69.40%**	NEITHER
New York - Albany	238	**69.60%**	**79.90%**	NEITHER
New York - Albany	239	**49.00%**	80.70%	ASOTP
New York - Albany	241	**64.10%**	85.90%	ASOTP
New York - Albany	242	**42.20%**	**73.40%**	NEITHER
New York - Albany	243	84.10%	92.70%	BOTH
New York - Albany	244	**71.70%**	81.90%	ASOTP
New York - Albany	245	**68.80%**	**75.30%**	NEITHER
New York - Albany	250	89.30%	92.90%	BOTH
New York - Albany	252	80.00%	89.50%	BOTH
New York - Albany	253	**64.30%**	92.30%	ASOTP
New York - Albany	254	**76.90%**	80.80%	ASOTP
New York - Albany	255	**7.70%**	**57.10%**	NEITHER
New York - Albany	256	85.70%	87.10%	BOTH
New York - Albany	259	82.10%	93.40%	BOTH
New York - Albany	261	82.10%	91.70%	BOTH
New York - Niagara Falls	280	**57.00%**	**53.60%**	NEITHER
New York - Niagara Falls	281	**18.50%**	**38.30%**	NEITHER
New York - Niagara Falls	283	**31.50%**	**45.10%**	NEITHER
New York - Niagara Falls	284	**32.60%**	**35.10%**	NEITHER
New York - Niagara Falls	288	**30.80%**	**46.20%**	NEITHER
Ethan Allen Express	290	**45.30%**	**77.50%**	NEITHER
Ethan Allen Express	291	**55.70%**	**57.60%**	NEITHER
Ethan Allen Express	292	**28.60%**	**38.10%**	NEITHER
Ethan Allen Express	293	**69.20%**	**73.90%**	NEITHER
Ethan Allen Express	296	**76.20%**	81.30%	ASOTP
Heartland Flyer	821	**59.30%**	92.60%	ASOTP
Heartland Flyer	822	**52.20%**	**48.70%**	NEITHER
Hiawatha	329	96.20%	97.20%	BOTH
Hiawatha	330	97.50%	98.20%	BOTH
Hiawatha	331	94.60%	97.60%	BOTH
Hiawatha	332	94.60%	96.70%	BOTH
Hiawatha	333	93.50%	94.60%	BOTH
Hiawatha	334	89.10%	97.60%	BOTH
Hiawatha	335	89.10%	93.70%	BOTH

Service	Train #	Endpoint	ASOTP	Passes
Hiawatha	336	85.90%	97.20%	BOTH
Hiawatha	337	91.30%	98.50%	BOTH
Hiawatha	338	88.00%	94.60%	BOTH
Hiawatha	339	92.40%	95.70%	BOTH
Hiawatha	340	92.40%	99.30%	BOTH
Hiawatha	341	96.70%	98.50%	BOTH
Hiawatha	342	91.30%	95.00%	BOTH
Hoosier State	850	**54.00%**	**73.10%**	NEITHER
Hoosier State	851	81.60%	**74.20%**	Endpoint
Carl Sandburg / Illinois Zephyr	380	84.80%	86.80%	BOTH
Carl Sandburg / Illinois Zephyr	381	96.70%	97.00%	BOTH
Carl Sandburg / Illinois Zephyr	382	90.20%	91.40%	BOTH
Carl Sandburg / Illinois Zephyr	383	89.10%	90.50%	BOTH
Illini / Saluki	390	**35.90%**	**39.90%**	NEITHER
Illini / Saluki	391	**34.80%**	**31.50%**	NEITHER
Illini / Saluki	392	**17.40%**	**43.20%**	NEITHER
Illini / Saluki	393	**32.60%**	**26.80%**	NEITHER
Lincoln Service	300	**51.80%**	**69.30%**	NEITHER
Lincoln Service	301	**45.90%**	**65.80%**	NEITHER
Lincoln Service	302	**36.50%**	**50.20%**	NEITHER
Lincoln Service	303	**30.60%**	**44.20%**	NEITHER
Lincoln Service	304	**56.00%**	**51.60%**	NEITHER
Lincoln Service	305	**45.10%**	**56.90%**	NEITHER
Lincoln Service	306	**51.60%**	**57.50%**	NEITHER
Lincoln Service	307	**49.50%**	**59.00%**	NEITHER
Blue Water	364	**78.30%**	**59.70%**	NEITHER
Blue Water	365	**20.70%**	**74.70%**	NEITHER
Pere Marquette	370	**64.10%**	**71.70%**	NEITHER
Pere Marquette	371	**58.70%**	91.70%	ASOTP
Wolverine	350	**65.20%**	**76.10%**	NEITHER
Wolverine	351	**34.80%**	**66.80%**	NEITHER
Wolverine	352	**15.40%**	**27.40%**	NEITHER
Wolverine	353	**53.80%**	**59.30%**	NEITHER
Wolverine	354	**25.00%**	**27.90%**	NEITHER
Wolverine	355	**56.50%**	**56.10%**	NEITHER
Wolverine	359	**32.90%**	**48.60%**	NEITHER
Kansas City - St. Louis	311	83.70%	87.80%	BOTH
Kansas City - St. Louis	313	89.10%	89.70%	BOTH
Kansas City - St. Louis	314	87.00%	83.00%	BOTH
Kansas City - St. Louis	316	85.70%	84.50%	BOTH
Pacific Surfliner	562	94.60%	97.00%	BOTH
Pacific Surfliner	564	84.80%	97.80%	BOTH
Pacific Surfliner	565	85.90%	94.90%	BOTH
Pacific Surfliner	566	**52.20%**	87.90%	ASOTP
Pacific Surfliner	567	80.40%	94.30%	BOTH

Service	Train #	Endpoint	ASOTP	Passes
Pacific Surfliner	572	**78.30%**	92.70%	ASOTP
Pacific Surfliner	573	**78.30%**	91.40%	ASOTP
Pacific Surfliner	579	83.30%	88.50%	BOTH
Pacific Surfliner	580	84.80%	93.40%	BOTH
Pacific Surfliner	582	87.00%	93.10%	BOTH
Pacific Surfliner	583	**79.30%**	88.90%	ASOTP
Pacific Surfliner	591	91.30%	95.30%	BOTH
Pacific Surfliner	595	81.50%	95.30%	BOTH
Pacific Surfliner	761	**75.00%**	89.90%	ASOTP
Pacific Surfliner	763	**76.10%**	87.00%	ASOTP
Pacific Surfliner	768	**48.90%**	92.30%	ASOTP
Pacific Surfliner	769	**60.90%**	**76.40%**	NEITHER
Pacific Surfliner	774	87.00%	86.10%	BOTH
Pacific Surfliner	777	81.50%	84.40%	BOTH
Pacific Surfliner	784	80.40%	89.70%	BOTH
Pacific Surfliner	785	**77.20%**	84.30%	ASOTP
Pacific Surfliner	790	85.90%	83.10%	BOTH
Pacific Surfliner	796	**64.10%**	81.30%	ASOTP
Pacific Surfliner	1761	**75.00%**	88.70%	ASOTP
Pacific Surfliner	1790	85.70%	89.00%	BOTH
Pennsylvanian	42	82.60%	85.80%	BOTH
Pennsylvanian	43	82.60%	**77.60%**	Endpoint
Piedmont	73	80.20%	96.20%	BOTH
Piedmont	74	**60.70%**	82.60%	ASOTP
Piedmont	75	**39.30%**	**77.20%**	NEITHER
Piedmont	76	**42.90%**	**78.70%**	NEITHER
San Joaquin	701	88.00%	89.50%	BOTH
San Joaquin	702	81.50%	81.20%	BOTH
San Joaquin	703	**67.40%**	**75.40%**	NEITHER
San Joaquin	704	85.90%	87.30%	BOTH
San Joaquin	711	87.00%	88.50%	BOTH
San Joaquin	712	**72.80%**	**73.50%**	NEITHER
San Joaquin	713	**79.30%**	80.10%	ASOTP
San Joaquin	714	81.50%	82.00%	BOTH
San Joaquin	715	83.70%	81.90%	BOTH
San Joaquin	716	82.60%	82.70%	BOTH
San Joaquin	717	**64.10%**	**78.80%**	NEITHER
San Joaquin	718	82.60%	**78.10%**	Endpoint
Vermonter	54	96.40%	87.10%	BOTH
Vermonter	55	**78.10%**	83.30%	ASOTP
Vermonter	56	84.40%	**79.60%**	Endpoint
Vermonter	57	92.90%	93.10%	BOTH
Auto Train	52	**71.70%**	**76.10%**	NEITHER
Auto Train	53	**60.90%**	**70.70%**	NEITHER

Service	Train #	Endpoint	ASOTP	Passes
California Zephyr	5	**62.20%**	**35.60%**	NEITHER
California Zephyr	6	**22.80%**	**38.70%**	NEITHER
Cardinal	50	**23.10%**	**28.50%**	NEITHER
Cardinal	51	**72.50%**	**58.00%**	NEITHER
Capitol Limited	29	**30.40%**	**39.30%**	NEITHER
Capitol Limited	30	**39.60%**	**23.20%**	NEITHER
City of New Orleans	58	87.00%	**66.20%**	Endpoint
City of New Orleans	59	90.20%	**62.20%**	Endpoint
Coast Starlight	11	**75.00%**	**58.40%**	NEITHER
Coast Starlight	14	**62.00%**	**37.90%**	NEITHER
Crescent	19	**39.10%**	**55.70%**	NEITHER
Crescent	20	**59.80%**	**41.30%**	NEITHER
Empire Builder	27	**52.70%**	**39.50%**	NEITHER
Empire Builder	28	**64.80%**	**24.20%**	NEITHER
Empire Builder	7	**56.50%**	**39.60%**	NEITHER
Empire Builder	8	**7.60%**	**24.40%**	NEITHER
Lake Shore Ltd	448	**18.20%**	**21.60%**	NEITHER
Lake Shore Ltd	449	**45.50%**	**65.00%**	NEITHER
Lake Shore Ltd	48	**52.20%**	**36.50%**	NEITHER
Lake Shore Ltd	49	**15.20%**	**23.90%**	NEITHER
Palmetto	89	**33.70%**	**54.00%**	NEITHER
Palmetto	90	82.60%	**73.20%**	Endpoint
Silver Meteor	97	**54.30%**	**39.60%**	NEITHER
Silver Meteor	98	**44.60%**	**46.90%**	NEITHER
Silver Star	91	**37.00%**	**42.30%**	NEITHER
Silver Star	92	**40.20%**	**50.80%**	NEITHER
Southwest Chief	3	**50.00%**	**47.10%**	NEITHER
Southwest Chief	4	**43.50%**	**27.20%**	NEITHER
Sunset Limited	1	**74.40%**	**53.10%**	NEITHER
Sunset Limited	2	**60.00%**	**49.50%**	NEITHER
Texas Eagle	21	**40.20%**	**18.40%**	NEITHER
Texas Eagle	22	**15.20%**	**22.20%**	NEITHER

Number of trains that exceed 80% Endpoint OTP but fall below 80% ASOTP	10
Number of trains measured	253
Percent of total	4.0%

Source: Federal Railroad Administration, Rail Service Metrics and Performance Reports, https://www.fra.dot.gov/eLib/Details/L17310 (last accessed March 29, 2016).