

Surface Transportation Board

Docket No. EP 724 (Sub-No. 4)

Norfolk Southern Railway Company

Unit Train Definition

Norfolk Southern Unit Trains in the network are defined by train symbols. The coal train types are empty coal unit train (CE) and loaded coal unit train (CL). The grain train types are loaded grain unit trains (LDGR) and empty grain unit train (EMGR). The crude oil train type is petroleum unit train (UP). The ethanol train type is fuel unit train (UF). Any other unit train is assigned a generic unit train symbol (UNIT). NS automotive traffic, both auto parts and vehicle shipments, are not operated in defined unit train service. Shipments move in trains that may or may not be combined with other traffic and trains may carry multiple defined blocks. Therefore automotive traffic is not included as a Unit Train type.

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Methodology for Calculating Weekly System Average Train Speed #1

- Source: Data is sourced from Norfolk Southern's Transportation Data Warehouse.
- Metric leverages a current report process that is currently being sent weekly to the AAR.
 - Data retrieval for calculation is done weekly and stored into history.
 - Data is calculated by pulling the total train miles and train transit segment move days by train type.
 - Formula for the speed is the total miles/segment move days/24 to get MPH
 - Calculated speeds in excess of 80 MPH are not included because such speeds are indicative of incorrect data.
 - The data is grouped by the train type
- The following train types were used for this metric:
 - Intermodal
 - Grain Unit
 - Coal Unit
 - Automotive Unit (Multilevel)
 - Crude Oil Unit
 - Ethanol Unit
 - Manifest (General Merchandise)
 - System - Includes additional non-unit traffic in sync with AAR Train Speed.
- Results formatted to show the category and train speed for the previous Friday Week End date.
- Date range is Friday weekending date.

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Methodology for Calculating Weekly Average Terminal Dwell #2

“Weekly Average Terminal Dwell Time Measured in Hours Excluding Cars on Run Through Trains”

- Weekly average terminal dwell data is sourced from Norfolk Southern’s Transportation Data Warehouse.
 - Data retrieval for calculation is done daily and stored into history.
 - Arriving and Departing train cannot be the same for the equipment (Run through exclusion)
 - Excludes locomotives, EOTs, MOW equipment, Containers, Trailers, coal trains, and mine shifters, and bad ordered shipments.
 - Metric is calculated by aggregating the total dwell and total railcars by railcar type and location by day
 - Using the same source data as the current AAR process, a separate query is used that calculates the average dwell by using the formula total cars divided by total dwell and formats the results based on all locations rolled up by previous Friday Week End Date.
- Data for the 10 largest terminals is sourced from Norfolk Southern’s Transportation Data Warehouse.
- Metric leverages the same source data in the current report process that is currently being sent weekly to the AAR.
 - Data retrieval for calculation is done daily and stored into history.
 - Arriving and Departing train cannot be the same for the equipment (Run through exclusion)
 - Excludes locomotives, EOTs, MOW equipment, containers, trailers, coal trains, and mine shifters, and bad ordered shipments.
 - Metric is calculated by aggregating the total dwell and total railcars by railcar type and location by day
- Top ten 10 largest terminals (by railcars handled) as defined by Norfolk Southern Terminal Operations.
- Using the same source data as the current AAR process, a separate query is used that calculates the average dwell by using the formula total cars divided by total dwell and formats the results based on the top ten defined locations rolled up by previous Friday Week End Date.

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Methodology Total Cars On Line by Car Type #3

- Norfolk Southern will use the weekly “RPM Cars On Line” as reported by Railinc for the Railroad Performance Measures (RPM) website
<http://www.railroadpm.org/Performance%20Reports/NS.aspx>. Utilizing this data ensures we maintain consistency in publically reported Cars On Line information.
- Railinc has agreed to provide the RPM website with this information on Sunday for NS availability on Tuesday of each week for the previous Saturday to Friday.
- Date range is Friday weekend date.
- Railinc developed the specific “RPM Cars On Line” report which is derived from car counting (and locating) programs already in use by the industry and is overseen by several industry committees to ensure consistency and accuracy. The definition of the Cars On Line is as stated below on the website:

Cars On Line is the average of the daily on-line inventory of freight cars. Articulated cars are counted as a single unit. Cars on private tracks (e.g., at a customer's facility) are counted on the last railroad on which they were located. Maintenance of way cars are excluded.

Cars on Line figures are reported by car type for the following car types:

Car Type	AAR Mechanical Designation
Box	A, B or R
Covered Hopper	C
Gondola	E or G
Intermodal	P, Q or S
Multilevel	V
Open Hopper	H, J or K
Tank	T
Other	L or F

and by car ownership:

Owner Type	Description
System Car	Owned by the railroad on which it is located
Foreign RR	Owned by a railroad other than the one on which it is located
Private	Owned by a non-railroad (i.e., has a car initial that ends in “X”) and not leased to a railroad

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Methodology for Calculating Unit Train Shipments Origin Dwell Hours #4

- A query will be run each Monday morning to pull data from Norfolk Southern's Transportation Data Warehouse for the previous Saturday to Friday.
- All loaded shipments that travel in the NS Unit Train network and originate on NS served locations will be included.
- NS automotive traffic, both auto parts and vehicle shipments, are not operated in defined unit train service. Shipments move in trains that may or may not be combined with other traffic and trains may carry multiple defined blocks. Therefore automotive traffic is not included as a Unit Train type.
- Records included must have a waybill release reported event prior to the first NS train movement event. Shipments released or billed subsequent to the first movement event are excluded.
- Unit Train shipments will be identified for their respective shipment commodity groups using the shipment waybill STCC code.
- Each commodity group reported metric will reflect the aggregated total number shipments divided by the total number of dwell hours to calculate the Average Origin Dwell Hours.

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Methodology for Weekly Total Number of Trains Held Short of Destination or Scheduled Interchange #5

- A query will be run each Monday morning to pull data from Norfolk Southern's 6 AM daily trains holding in route process and 6 AM daily origin train detail process for the previous Saturday to Friday.
 - Daily "Trains Delayed >= 4 Hours at In Route Location" process capturing trains held in route.
 - Process captures last train move reported in route.
 - NS does not consider a train holding until it has been idle for 4 hours or more.
 - The 4 hour limit is the time period used to allow for normal train operational work performed at the individual terminals within route. Such as block pick-ups, set-offs, etc.
 - Daily "Major Terminal Report" process capturing trains held at origin each day.
 - Process captures each train's scheduled departure, actual departure, crew assignments and locomotive assignments and hours delayed for crew/locomotive/other.
- Delay reasons if not indicated within the source processes will be pulled from the train's delay history for the delay at the time each snapshot was run.
 - Delays will be grouped daily by Crew, Locomotive and Other.
 - The "Other" category includes all delays not attributed to Crew and Locomotive. Examples of Other category of causes for held trains includes, among other things, mechanical, causes such as trains loading ahead, weighing, correcting imbalances and overloads, dispatching issues, customs inspections, track maintenance, mechanical issue, etc.
- Final measure will be an average of the above 6AM daily figures for each Train Type grouping and an overall average.

Note: Norfolk Southern experienced a temporary change in the internal threshold used to calculate trains held. The standard threshold/definition that NS uses for trains held is four hours or greater but from the timeframe of September 13th, 2019 to December 6th, 2019 that threshold changed to two hours or greater. NS fully intends to continue to report trains held using the four-hour standard. In order to do that, NS resubmitted 11 weeks of data that used the two hour or greater threshold by recalculating item 5 using the old standard. Those weeks include: 9/25/19, 10/02/19, 10/09/19, 10/16/19, 10/23/19, 10/30/19, 11/06/19, 11/13/19, 11/20/19, 11/27/19 and, 12/04/19.

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Methodology for Calculating Weekly Total of Cars in Service That Have Not
Moved #6

- A query will be run daily to pull data from Norfolk Southern's Transportation Data Warehouse for the previous day.
- All railcars (not individual containers or trailers) in line haul service will be included. The following shipments are excluded:
 - Shipments of company material
 - Cars in Bad Order Status
 - Railcars in stored status
 - Cars available for placement but not ordered in by customer (events excluded: ABNO, ARRI, AVPL, ICHD, NOPA, PACT, PCON, PLLT, STEA, STEX, STPL, STSE, STSU, STUN)
- Only equipment that's on line of road (except those denoted as being in storage) and equipment released by the customer to be pulled will be extracted.
- Grain, coal, crude oil, automotive (loads), ethanol, and fertilizer will be identified for their respective shipment commodity groups using the shipment waybill STCC code. Intermodal and automotive (empty) will be identified using the AAR car type.
- At the end of the seven day weekly period, the seven individual snapshots will be aggregated and divided by number of days in the reporting period(7).
- Date range is Friday weekending date.

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Methodology for Calculating Total Number of Grain Cars Loaded and Billed #7

- A query will be run each Monday morning to pull data from Norfolk Southern's Traffic History table for the previous Saturday to Friday. (Traffic History is the official source for revenue carloads as it relates to the revenue billing. Utilizing this table ensures that we maintain consistency in publically reported carload information.)
- This query includes only loaded revenue shipments waybilled within the previous Saturday to Friday with Standard Transportation Commodity Codes (STCCs) beginning with: 01131 (barley), 01132 (corn), 01133 (oats), 01135 (rye), 01136 (sorghum grains), 01137 (wheat), 01139 (grain, not elsewhere classified), 01144 (soybeans), 01341 (beans, dry), 01342 (peas, dry), and 01343 (cowpeas, lentils, or lupines) where NS is listed as the origin road.
- The following statement does not apply to Norfolk Southern because we do not handle grain traffic in the manner described. *"includes cars in shuttle service; dedicated train service; reservation, lottery, open and other ordering systems; and, private cars. Additionally, please separately report the total cars loaded and billed in shuttle service (or dedicated train service) versus total cars loaded and billed in all other ordering systems,"*

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Methodology for Calculating the aggregated STCCs in total number of grain cars
loaded and billed by State #8

Source: Norfolk Southern's Transportation Data Warehouse

- Norfolk Southern will run, for each week, the total number of empty cars ordered through the NS empty car request system, by state, for all cars designated with the designated pool number assigned to manifest grain traffic. Customers do not provide STCC information as part of the NS empty car order process. Therefore, Norfolk Southern cannot provide specific STCCs. Norfolk Southern's item #8 will be filed with a Monday through Sunday timeframe, since this is how we collect the data in the ordinary course of business.
- Norfolk Southern will determine, for each week, the total number of cars placed at customers' facilities during that week. Cars that were placed during a given week above those ordered for that week will NOT be included. This means that in any given week, Norfolk Southern will not report a fulfillment rate above 100% for an individual car order.
- Customers input new empty car orders every week. Orders partially or fully not filled during a given week do not carry over to the next week. Norfolk Southern will therefore not have any data to provide for the stated requirement for the number of orders that are 11 or more days past due.

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Methodology for Calculating Coal Metric #9

- A query will be run each week to pull data from Norfolk Southern's Commodity Transportation Management System (CTMS) for the previous Saturday to Friday.
- Only includes shipments from an origin coal basin served by NS where the number of cars requested is greater than fifty (50).
- The number shown in the "Loadings Plan" column represents the number of trains that had originally scheduled load dates within the reporting period, divided by seven to show an average daily number for the week. These trains may have received revised loading dates one or more times before being loaded, or may have been canceled for any number of reasons and never loaded.
- The number shown in the "Loadings Average" column represents the number of trains that actually loaded within the reporting period, divided by seven to show an average daily number for the week. These trains may have had originally scheduled load dates before, during or after the reporting period.

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Originated Carloads by Commodity Group #11**

- This report is currently provided to the AAR on a weekly basis. Fertilizer will be added as an additional section.
- The current report process pulls weekly data from Traffic History/Carloadings and displays both Originating traffic and Received traffic by the AAR Commodity group requested.