

## Bangor to Boston Passenger Trains --- Part 2: A Look at Comparable Services Offered Today

Sources: Amtrak, 2020 Census, VTrans

In March/April 2024 issue of Maine Rail News, we looked back at the diesel passenger rail services being offered between Bangor and Boston in the 1930s and 1940s. The introduction of streamlined diesel-powered train sets allowed 5-hour trips between Bangor and Boston and 2-hour trips between Portland and Boston. In this issue, we look at some comparable Amtrak services offered today between smaller urban areas (under 200,000 population) and large urban areas (over 2 million population).

Four Amtrak services have been identified for comparison: two from the Northeast and two from the Midwest. The Northeast services include the Downeaster (Brunswick, ME to Boston) and the Ethan Allen Express (Burlington, VT to New York City). The Midwest services are Illinois Zephyr / Carl Sandberg trains from Quincy, IL to Chicago and the Illini / Saluki trains from Carbondale, IL to Chicago. These are also the “peer” services used in the MaineDOT-sponsored transit propensity study undertaken in 2022. Route maps of four Amtrak services (highlighted) are shown below.

Routes of the Ethan Allen Express and the Downeaster



Routes of the Illinois Zephyr / Carl Sandberg (left) and the Illini / Saluki (right)



The following table provides a comparison of various characteristics of the route corridors and passenger services. Following the table are comparative observations about these characteristics.

State of Origin	Illinois	Illinois	Vermont	Maine
Passenger Rail Service	Zephyr/CS	Illini/Saluki	Ethan Allen	Downeaster
Origin City	Quincy	Carbondale	Burlington	Brunswick
urban population	43427	31448	118032	31361
Destination City	Chicago	Chicago	New York	Boston
O-D Distance (mi)	258	310	309	145
Round Trips Daily	2	2	1	5
Avg Travel Time (h:m)	4:22	5:30	7:32	3:20
Intermediate Stops	8	9	13	10
Avg Stop Spacing (mi)	29	31	22	13
Overall Speed (mph)	59	56	41	44
FFY 2023 Ridership	114521	270017	86638	542639

Origin City and Urban Population: All four origin cities have urban populations under 200,000, but only Burlington is what the Census Bureau would consider an “urbanized area” (an urban area with more than 50,000 population, serving as the core of a “metropolitan area”). Urban population is a good indicator of population density, as well as overall population. (The urban population of Bangor is over 60,000, more than all of the comparable origin cities, except Burlington.)

Destination City: All four destination cities have an urban population over 2 million. Chicago, New York, and Boston all have robust transit systems that allow people to travel within the city without the need for a private automobile. For many, using transit and walking would be the preferred way to get around in these three cities. (A close look at the Amtrak ridership statistics for these comparable routes shows that the destination city is the main attraction for passenger trips.)

O-D Distance: For three of the service routes, the origin city is between 250 and 310 miles from the destination city. The exception is the Downeaster route, where Brunswick is 145 miles from Boston. (Bangor, as the origin city for a service to Boston, has an O-D distance of about 250 miles.)

Round Trips Daily: The two Illinois services offer two daily round trips to Chicago. The Downeaster offers the most daily round trips (five) to Boston. The Ethan Allen Express offers a single daily round trip between Burlington and New York. Only since 2022, has the train originated in Burlington. (Before 2022, the Ethan Allen Express route was shorter --- originating in the smaller Vermont city of Rutland.) The state rail plan for Vermont calls for an additional round trip between Burlington and Albany, NY (via Bennington) to supplement the Ethan Allen Express.

Average Travel Time: The two Illinois services keep an average scheduled travel time around 5 hours between the origin and destination cities. The Ethan Allen Express service is about 7 ½ hours between Burlington and New York. The Downeaster, with its shorter O-D distance, covers the route between Brunswick and Boston in a little more than 3 hours. (Recall that Bangor to Boston travel time was around 5 hours in the 1930s and 1940s.)

Intermediate Stops and Stop Spacing: The number of intermediate stops between origin and destination for these four routes ranges between 8 on the Quincy-Chicago route to 13 on the Burlington-New York route. However, both Illinois routes average about 30 miles between stops, whereas the Vermont and Maine routes have shorter average distances between stops --- 22 miles for the Ethan Allen Express and 13 miles for the Downeaster.

Overall Speed: The two Illinois services have a scheduled average overall speed approaching 60 mph between the origin city and Chicago. The Vermont and Maine services have a scheduled average overall speed over 40 mph. The table shows that the average spacing between stops is highly correlated with the average speed that can be maintained.



FFY 2023 Ridership: Ridership on the four services is related to the number of daily round trips and inversely related to the average travel time between origins and destinations. For all services except the Quincy-Chicago service, the 2023 riderships for the 2023 Federal Fiscal Year have exceeded pre-pandemic (2019) ridership levels of 200,000 passengers per year.

So, what does all this mean for Bangor to Boston passenger trains? What the comparison shows is that smaller urban areas that are 250 to 300 miles from large urban areas can have successful intercity passenger rail services. Bangor compares favorably to the smaller urban areas of this comparison, in terms of both its population size and its distance from a large urban area. Bangor is larger than the origin cities of Quincy, Carbondale, and Brunswick, each of which is successful in supporting two or more round trips to their respective destination cities. The O-D distance (250 miles) from Bangor to Boston is shorter than the distances from Carbondale to Chicago and from Burlington to New York and on par with the distance from Quincy to Chicago.

Bangor to Boston also has potential intermediate stops that would add to the ridership already generated in the Downeaster corridor. Lewiston-Auburn is another urbanized area of more than 60,000 population. Augusta (Maine's state capital) and Waterville each have urban populations of about 25,000 each. These three communities are larger than many of the intermediate stops along the comparable Amtrak service routes.

Another takeaway from the comparison is that a travel time of 5 ½ hours (or less) between origin city and destination city is part of a formula for success. This allows for same-day round trips in which activities can be completed in the destination city while getting the traveler out of and back to the origin city at reasonable times. This is the type of schedule used by the two Illinois services to Chicago and by the historic Pine Tree service connecting Bangor to Boston.

To cover the 250 miles from Bangor to Boston in 5 hours or less, the overall average speed must be 50 mph or higher. The Flying Yankee of the 1930s did this by limiting intermediate stops to five (Waterville, Lewiston, Portland, and two more). That meant an average station spacing of 42 miles or more --- much wider spacing than the 13-mile average spacing of stops on the Downeaster.

Therefore, a future Bangor to Boston passenger rail service would likely be most effective as a limited or express service, stopping at a select list of stations. This type of operation would not only shorten travel time between Bangor and Boston, but between Portland and Boston (down to 2 hours) as well. To connect Bangor with communities not served by the express trains, schedules could be coordinated between the express trains and the trains making all stops so that timely transfers could be made between one and the other at Portland.

*Based on the characteristics of comparable Amtrak passenger rail services from small origin cities and large destination cities and past success in the Bangor-Boston corridor, Bangor to Boston passenger rail service deserves to be part of Maine's passenger rail planning.*