

Sunday Train: Breaking Free of the Population Density Myth

by [BruceMcF](#)

Sun Oct 04, 2009 at 04:29:32 PM PDT



Today, the focus is on one lovely rhetorical ploy used by anti-rail advocates to try to put one over on people with limited experience with trains. This relies on the false framing that "trains is trains", and uses something that is true about *a particular kind of local rail transport* to mislead people about 110mph Emerging High Speed Rail in particular.



For example, Randall O'Toole:

- High capacity, high frequency local mass transit rail systems thrive best with high population densities
- Therefore the higher the population density, the better for High Speed Rail
- Therefore the Northeast Corridor shows the best that is possible for High Speed Rail

Didja catch it? Local mass transit rail and intercity High Speed Rail do not have near enough in common to support the weight of the "therefore".

Indeed, the Northeast Corridor could well be over the threshold where population density starts to undermine High Speed Rail operating ratios.

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crossposted from [The Hillbilly Report](#)

No, really, he does use this argument

Randall O'Toole, working for [The Cato Institute](#) (Sourcewatch), recently completed another of his series of propaganda pieces against High Speed Rail, for the "Show-Me Institute".

Sourcewatch does not have much on the "Show-Me Institute", but it does note that in 2006, a contribution of \$50,000 to the "[Show-Me Institute](#)" appeared in the annual report ... of the Cato Institute.



I am not going to *force* anyone to actually open up and wade through the blizzard of half truths, hypothetical «if this, then that» arguments where there is no reason to expect «this», and rhetorical flourishes in place of empirically grounded argument that makes up an O'Toole **report**. I'll wade in and pull out this thread of his argument:

Despite optimistic forecasts by rail proponents, passenger fares would rarely if ever cover high-speed operating costs. Amtrak operations currently cost federal and state taxpayers more than \$1 billion per year.³⁴ According to the bipartisan Amtrak Reform Council, Amtrak's trains between Boston and Washington lost nearly \$2.30 per passenger in 2001. [35] If trains in the most heavily populated corridor in the United States cannot cover their costs, no other trains will come close.

Before jumping into the main flaw in this argument, I do want to look at the *two* acts of deceptive cherry-picking of information. The first is the year. O'Toole's piece was just issued, and the most recent preceding

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attack job against High Speed Rail in another state was also this year, *so this paragraph was presumably written this year*. Why look to 2001 Amtrak figures? After all, the table that is referred to as an appendix of a proposal to dismantle Amtrak is just the Amtrak route performance data, which they publish each year. Fiscal Year 2008 Route Performance is in the **most recent Amtrak Business Plan (pdf)** (Appendix, page 8 {sheet 35}).

Except, in FY2001, the operating ratio (passenger revenue over operating costs) of the Acela line was 123%, in FY2008, the operating ratio was 129%. In FY2001, the operating ratio of the Northeast Corridor Regional services was 82%. In FY2009, the operating ratio was 96%.

Acela and Northeast Regional combined, the operating ratio in FY2001 was 96%. In FY2009, the combined operating ratio was 110%.

Second, if addressing 110mph Emerging High Speed Rail - why include the conventional rail operating ratio at all? Well, it is necessary to pool the conventional rail of the NEC conventional rail services and the "Emerging" High Speed Rail of the Acela together, otherwise **even in 2001** there is an operating ratio over 100%. And this has to be *on top of* using outdated information, since if newer figures are used, then even taking conventional rail and High Speed Rail together, they are above 100%.

But What About the Main Argument

But critiquing O'Toole presents a problem like a dog that has flushed four rabbits from hiding: which rabbit do you chase?

Sure, O'Toole is quite clearly and blatantly trying to mislead his readers about the financial performance of the existing Emerging High Speed Rail services in the Northeast Corridor.

However, that this can easily distract from the *main* fallacy. How does O'Toole "prove" that performance on the Northeast Corridor is the ceiling for High Speed Rail performance nationwide?



Its proof by assertion: "If trains in the most heavily populated corridor in the United States cannot cover their costs, no other trains will come close."

As is often the case, if you don't stop to think about it and don't know better, the claim seems plausible. However, in reality its a steaming pile of bullshit.

What the statement assumes is that **no other transport operator will notice that there are all those people living in the Northeast**. O'Toole is, in other words, assuming an incredible degree of stupidity on the part of private and public intercity bus operators, stupidity on the part of airline management, stupidity on the part of local intercity rail operators.

After all, think about demand in *any* market. Everything else equal, the more alternative choices available, the more responsive customers are to changes in prices, and so the less a seller can rely on margin per item and the harder they have to chase volume.

Suppose a region is as densely populated as the Northeast Corridor. What does that mean for the transport market? It means more options: a greater variety of more frequent transport services available. Airline shuttles, specialized intercity bus services, commuter rail services that run between distinct cities - there is a wide range of intercity transport options.

Now, compare it to a less densely populated region. Consider Ohio, which has an overall population density similar to Germany. Taking that notch down in population density means more expensive and less frequent commuter airline routes that would be shuttles in the Northeast. Taking that notch down in density means a once a day Greyhound through route operates where a higher population density would support multiple dedicated intercity bus routes.

Just in terms of private operators, taking the population density down a notch means that there are fewer transport services as an alternative to driving, and those that exist are much less frequent.

And that lower population density also means that there is less political demand for subsidies to alternatives to driving, which also translates into fewer local and state public subsidies for intercity transport.

The *total* transport market increases in size with population, but there are both positives and negatives in that for the financial performance of a High Speed Rail service. Which means it is absurd to make the claim that O'Toole does. Instead, you have to evaluate each corridor on a case by case basis.

So O'Toole's argument here (as is true so often) is little more than a bluff. He hopes that you follow along his argument as he has framed it, and accept an authoritatively stated claim as if it is self-evidently true.

Given how strongly O'Toole states his bluff, we can be confident that it is false to say "If trains in the most heavily populated corridor in the United States cannot cover their costs, no other trains will come close."

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For intercity rail, the more likely truth is, "If High Speed Rail covers its operating cost in the most crowded intercity transport market in the US, we should find some corridors that can do even better."

Consider, for example, the Ohio Hub

One advantage of the "do another study" approach used by the Bush administration to delay the introduction of High Speed Rail is that a lot of these corridors have been quite extensively studied. So it is that the Ohio Hub has not only pretty maps to look at, but **Sample Timetables** available in its detailed modeling.



Consider a sample main afternoon Express service on the Triple C corridor:

- Cleveland (dep): 2:00pm
- Columbus: 3:38pm
- Dayton: 4:33pm
- Cincinnati: 5:28

Which is to say: Cleveland|Columbus in 1:38, Columbus|Cincinnati in 1:50, Columbus|Dayton, Dayton|Cincinnati: 0:55. For comparison, Google Maps gives driving time Cleveland|Columbus 2:20; Columbus|Cincinnati: 1:49; Columbus|Dayton: 1:17; and Dayton|Cincinnati: 0:55.

So with the Triple C tying together three 1m+ metro areas, it is most time competitive for Cleveland|Columbus, while on the Columbus|Cincinnati route, the 500K+ metro area of Dayton lies along the route to provide additional patronage.

And of course, the Ohio Hub is developing in the context of the development of the Midwest Hub, which will provide 110mph rail service Cleveland/Toledo/Chicago and Cincinnati/Indianapolis/Chicago, providing through passengers at the ends of the routes to fill in for passengers taking shorter trips to destinations in the middle of the corridor.

So it is no surprise that in the **financial projections for performance in 2025** in "Cleveland Hub" layer of the system - Cleveland to Cincinnati, Toledo, Niagara Falls and Pittsburg - the Triple C corridor performs the best.

What is surprising is the projected operating ratio of 199%. According to O'Toole, this is impossible - no rail corridor in the country could conceivably outperform the Acela services on the Northeast Corridor. Yet what stands out in the projection is the *limited range of travel alternatives that Ohio travelers are faced with*. In the **Ridership and Revenue Forecast**, 78% of trips diverted to rail were originally car, 13% by air, and 9% by bus.

And yet this implies rail dominating bus and air transport in this corridor: **199% operating ratios are when 96.86% of total transport is by car**, 1.95% by train, 0.80% by air, and 0.39% by bus.

And this is what gives the greatest confidence that once this corridor is brought up to 110mph, it will be very successful. A ridership of 2.56m would be a runaway success in terms of financial performance - but that is against the conditions in the transport market in 2005.

What will happen when the next oil price shock hits? Clearly, when people are looking to economize on gasoline purchases, the sticker shock for a longer distance trip is more dramatic, and it is normally less difficult to make a switch of transport for a single long distance trip than for a daily commute.

So, just as happened in 2007 and 2008, when the next oil price shocks hit, these projections are going to turn out to be conservative.

What is the Strategic Implication of all of this?

What difference does it make? First, none of this should be confused with "running at a profit". Given massive capital subsidies to road and the capital subsidies to air, expecting rail to cover all of its capital costs is unrealistic.



However, the road system requires massive operating subsidies as well, while High Speed Rail - even, in the right corridors, 110mph High Speed Rail - is able to cover operating costs and yield an operating surplus. And operating surpluses mean that a state can finance further improvements out of operating revenue, rather than out of the general fund.

So, to take an example near and dear to my heart, once the Triple C corridor is up and running and has built up its ridership - a process that normally takes about five years - that provides a stream of revenue that finance electrification of the line and construct dedicated track (shared with high speed but not heavy freight), and build it up to a full 125mph Regional HSR system.

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This is why O'Toole is roaming the country on a mission to issue a rehash of his misleading claims and cherry picked information for each state in the nation. Because the opponents providing travelers freedom of choice have to act now.

Once they have had a chance to prove themselves, it will be too late to stop them.

Midnight Oil: Truganini



And the world it won't stand still

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When you ask O'Toole to write about trains, ... (30+ / 0-)

... you are, of course, saying, "Tell me, tell me, tell me lies".



If you join the twitter #HSrail swarm, find me @BruceMcF

by BruceMcF on Sun Oct 04, 2009 at 04:14:35 PM PDT

I've heard (3+ / 0-)

that the long-distance routes are actually more profitable for Amtrak than the NE Corridor.

Starboard Broadside: Firing all guns at the Right since September 2008!

by Cpt Robespierre on Sun Oct 04, 2009 at 05:11:52 PM PDT

[Parent]

Two related thoughts (4+ / 0-)

that's probably in large part due to what you were saying about limited transportation options in those areas vs. saturation in the corridor.

And I want to clarify that I don't expect mass transportation to turn a profit (I agree with you on that, of course), I'm just stating that I've heard the distance routes lose less.

Starboard Broadside: Firing all guns at the Right since September 2008!

by Cpt Robespierre on Sun Oct 04, 2009 at 05:15:07 PM PDT

[Parent]

And yes, the better return of ... (3+ / 0-)

... passenger-miles per dollar on the long haul routes is largely due to the fact that when they are running through lightly populated areas, they are often the only common carrier choice *available* in that county.

That's one reason that the state of North Dakota is part of the MidWest Rapid Rail consortium, even though the map does not extend to North Dakota - one the one hand, North Dakota benefits directly because Amtrak services will operate more efficiently with fewer delays *through* Chicago as a result of the Midwest Hub ... and North Dakota benefits indirectly from the connections between the long haul Amtrak service to the Twin Cities and transfers into the 110mph services from Minnesota east.

If you join the twitter #HSrail swarm, find me @BruceMcF

by BruceMcF on Sun Oct 04, 2009 at 07:06:59 PM PDT

[Parent]

It does depend on how you do the accounting ... (3+ / 0-)

... but clearly when you judge them in terms of how much transport is provided per dollar subsidy, the short corridor routes *outside* the NEC substantially underperform the long corridor routes.



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