

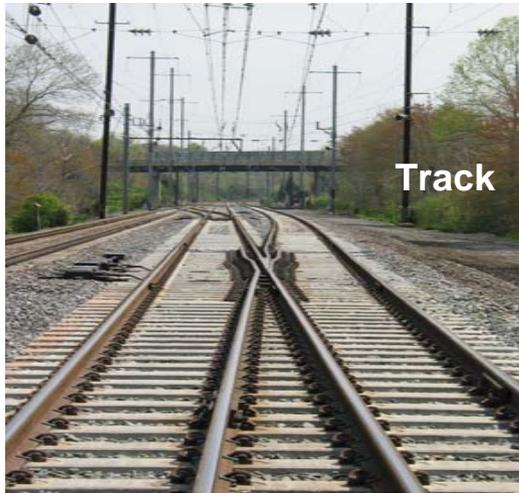
---

# The Opportunities and Challenges of High-Speed Rail

Tom Carper

October 14, 2009

# High-speed rail is a big part of what we do



- More than *half* of Amtrak's daily trains operate at or above 100 mph
- High speed (110+ mph) operation is supported by
  - Almost 40% of Amtrak T&E crew hours
  - More than half of Amtrak's Mechanical Department force (2,162 of 4,239)
- Amtrak maintains almost a thousand miles of track for 100+ mph service
  - This would stretch from DC to Chicago and most of the way back

# High-Speed Rail in Europe

---

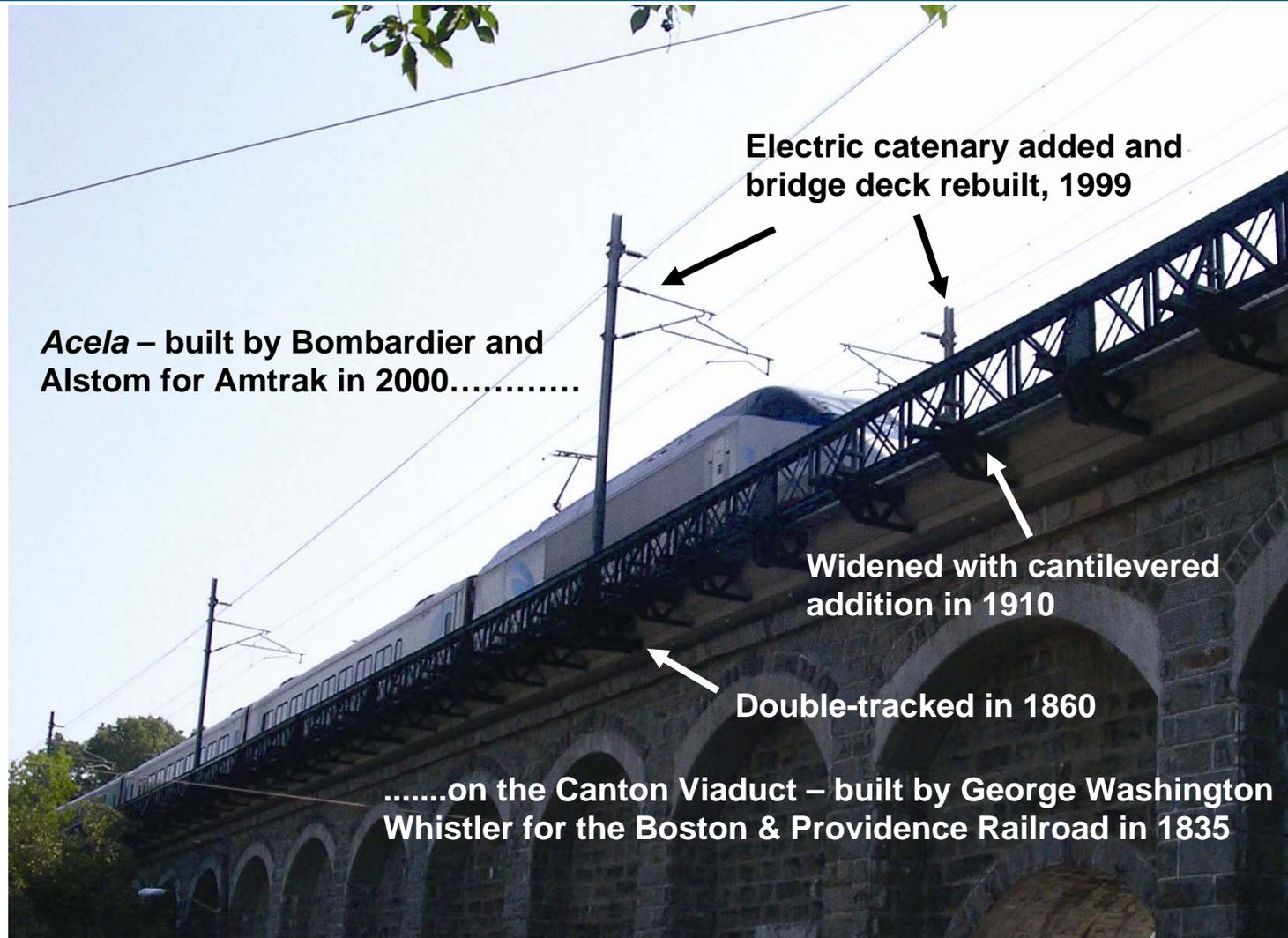
**AVE Class 102 train – built by Talgo and Bombardier for RENFE (Spanish national rail operator) in 2005.....**



**....on the Paracuellos de Ribera viaduct, part of the Madrid-Barcelona high speed line, opened in 2003**

**Infrastructure designed to realize the potential of the equipment**

# High-Speed Rail in America



**Acela – built by Bombardier and Alstom for Amtrak in 2000.....**

**Electric catenary added and bridge deck rebuilt, 1999**

**Widened with cantilevered addition in 1910**

**Double-tracked in 1860**

**.....on the Canton Viaduct – built by George Washington Whistler for the Boston & Providence Railroad in 1835**

**Equipment designed to operate within the constraints imposed by the infrastructure**

## **“The Big Bang”**

- Dedicated ROW
- High capital cost
- Extensive land use and community impact issues
- Takes years (sometimes decades) to realize, BUT:
  - Delivers very high speeds
  - Builds large market share

## **“Incremental Improvement”**

- Improve speeds and trip times on existing ROW
- Limit capital costs and impacts
- Produces a string of small trip time improvements
  - Over time, these accumulate
  - Can begin quickly
  - Build ridership and market share as you go

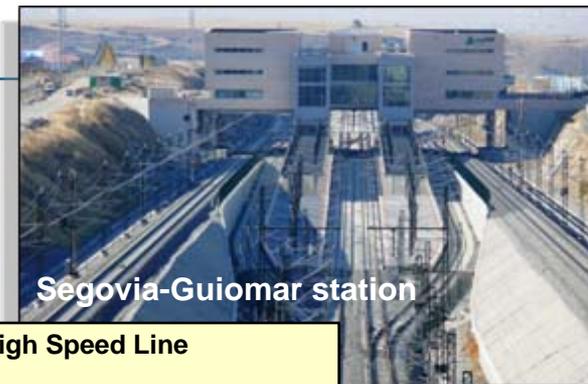
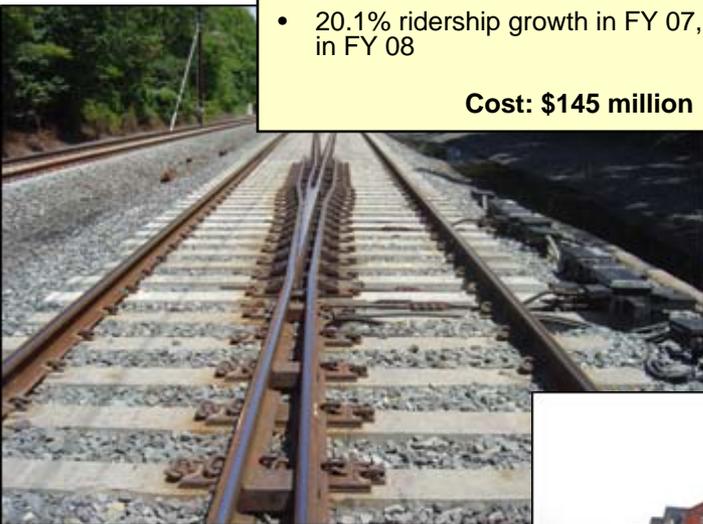
**We have the expertise to make both approaches work here – so let’s take a look at them**

# It isn't just about speed.....

## Amtrak Keystone Corridor

- 104 mile line (Philadelphia-Harrisburg)
- Right of way dates in places to the 1830s, periodically improved and electrified in the 1930s
- In 2006, Amtrak restored existing electrification, improved track and signals for 110 mph service, reconfigured switches and crossovers
- 10 intermediate stops
- Harrisburg-Philly trip cut from 2 hours to 1:45
- Carried 1,183,821 riders in FY 08
- 20.1% ridership growth in FY 07, 19.8% growth in FY 08

**Cost: \$145 million**



Segovia-Guiomar station

## Madrid-Valladolid High Speed Line

- 111 mile line
- Brand new line with minimal curvature, opened for service in Dec, 2007
- Constructed a dedicated ROW for 186 mph service; included a 28 km tunnel
- 1 intermediate stop
- Time cut from 1:30 to 55 minutes
- Carried 825,043 riders in 2008

**Cost: \$5.9 billion**



Harrisburg station

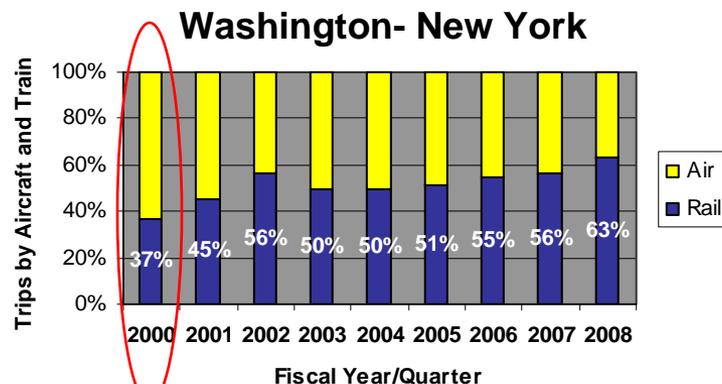


Alberto Saviejo photo

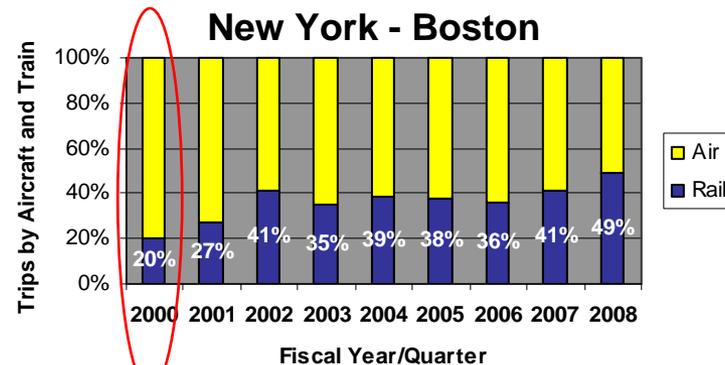
# How well does an incremental approach work?

- Northeast Corridor services are a product of incremental development:
  - ~100 mph in 1976 (on a good day)
  - 125 mph in 1980s on South End
  - 135-150 mph in 2000
- Market share is a product of trip time – but also frequency, convenience, comfort and reliability

- Incremental development has delivered speed and trip time improvements elsewhere – and can continue to do so
  - PTC will soon allow 110 mph on Amtrak's Michigan line
  - Rest of Detroit-Chicago line would be an excellent opportunity for similar improvements
  - Chicago-St. Louis line another opportunity for 110 mph service



**Acela service introduced**



**Acela service, electrification, and 125 mph Regional service introduced**

# American Recovery and Reinvestment Act (ARRA)

---

- Discretionary Rail Grants - \$8B (HSR, Intercity, congestion)
  - Available through Sep 30, 2012
- Amtrak - \$1.3B
  - \$850M for capital investment (infrastructure and equipment)
  - \$450M capital security grants
- State Transportation Plan funds - \$27.5B
  - Highway formula funding – now eligible for rail transportation projects
- Grants to be administered by the FRA
  - 3 track\* program
    - Track 1 (Design and Construction)
    - Track 2 (Programs)
    - Track 3 ( Planning)

# Some opportunities – Track Two Projects

- Inaugurate service on the Florida East Coast Railway (Jacksonville to Miami)
- Accelerate service on the Keystone Corridor to 125 mph
- Establish Chicago-Iowa City passenger service
- Chicago-St. Louis corridor – increased frequencies, PTC, 2<sup>nd</sup> main
- Englewood Flyover (CREATE)
- Madison-Milwaukee corridor service (110 mph)



# Bringing it all to fruition

---

- Mobility is a vital component of economic competitiveness
- At long last, we have the framework and funding that will allow us to invest
  - Need strong state partnerships
  - Local and regional participation will be vital
  - Freight railroad partners will
- The benefits are tremendous
  - Economic competitiveness
  - Development and growth
  - Community livability and quality of life

**We will need strong partnerships to realize our goals – but this is the opportunity of a lifetime**