
Amtrak Fleet Strategy

Section 305 Executive Committee

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- Intercity Passenger Rail in United States has unprecedented opportunity that must be addressed
- Amtrak, as the nation's passenger railroad, will play a vital role
 - Amtrak's fleet is and will be at the heart of its ability to deliver competitive service, impacting all aspects of Amtrak services
 - History of underinvestment has constrained Amtrak's ability to deliver modern and reliable services our customers deserve
 - Average age of equipment in the existing Amtrak Fleet is approaching 25 years
 - Essential need to develop a strategy for recapitalization of the fleet to sustain and grow the business
 - Develop a strategy that rebuilds and stabilizes supplier base

Things our fleet plan must do

- Replace our aging fleet with modern equipment
- Buy equipment in a manner that will develop and support a viable manufacturing base and fleet
 - Orders of sufficient size to attract, develop and sustain a robust car building industry
 - Deliveries spread out over period of years, to allow for economical use of manufacturing plant, ease of incorporation into fleet
 - Allows us to ‘debug’ issues on small batches of new equipment at the beginning of a production run
- Establish guidelines for the commercial life of new equipment
- Develop a picture of the need
 - We need to make some determinations of demand so that we can estimate costs, capacities, and fleet size
 - The numbers in here aren’t chiseled in stone – we expect them to change somewhat as the plan develops in the years to come, as economic and technical conditions change

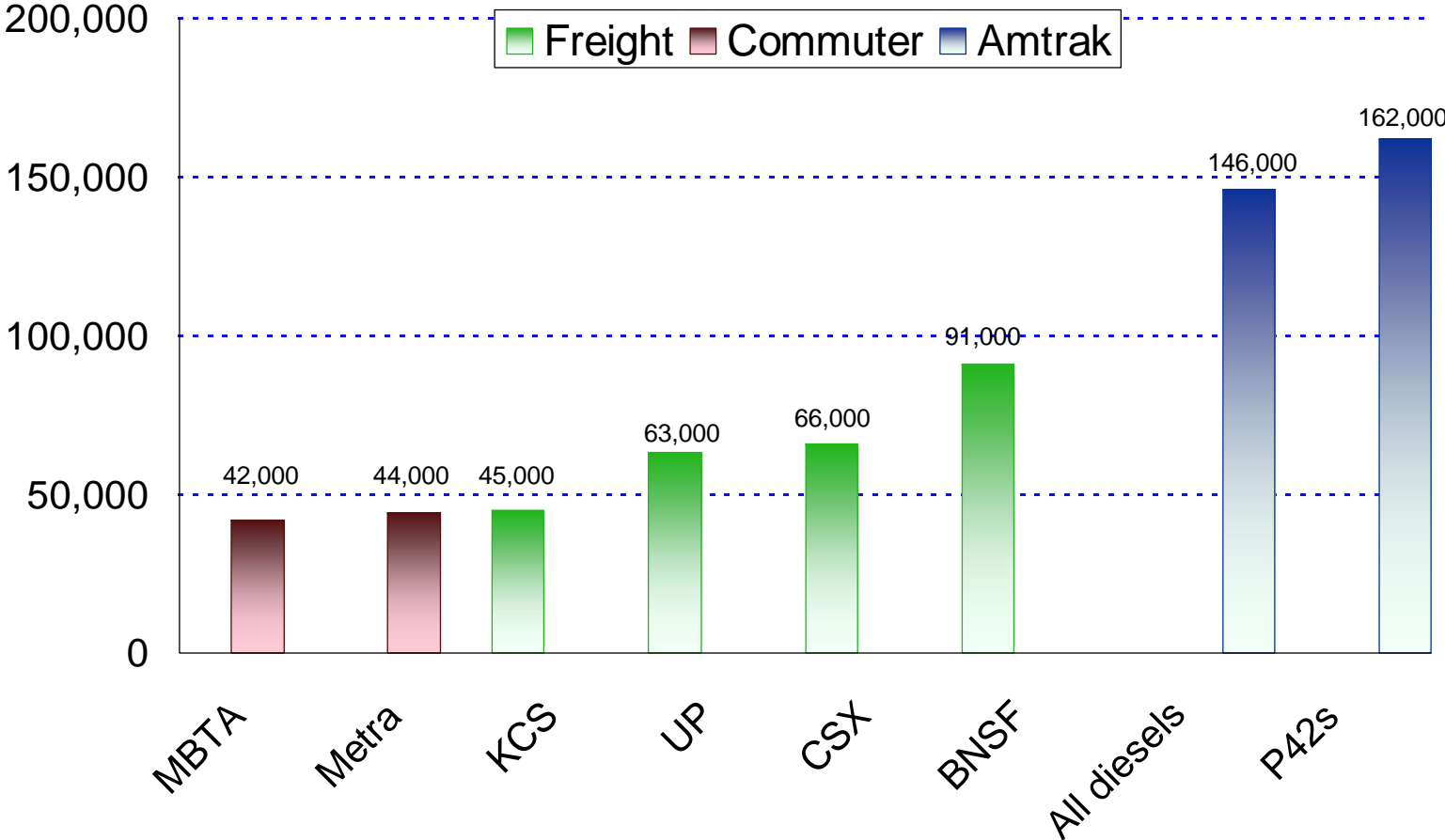
Why is this such an urgent need?

Context of Amtrak Fleet Plan

- Fleet Plan is based upon a thorough understanding of intercity passenger rail in the US
 - Conservative
 - Flexible
 - Scalable
- Addresses major business lines
 - Northeast Corridor
 - Long Distance
 - State supported/corridor services
- The Amtrak fleet plan is a living document

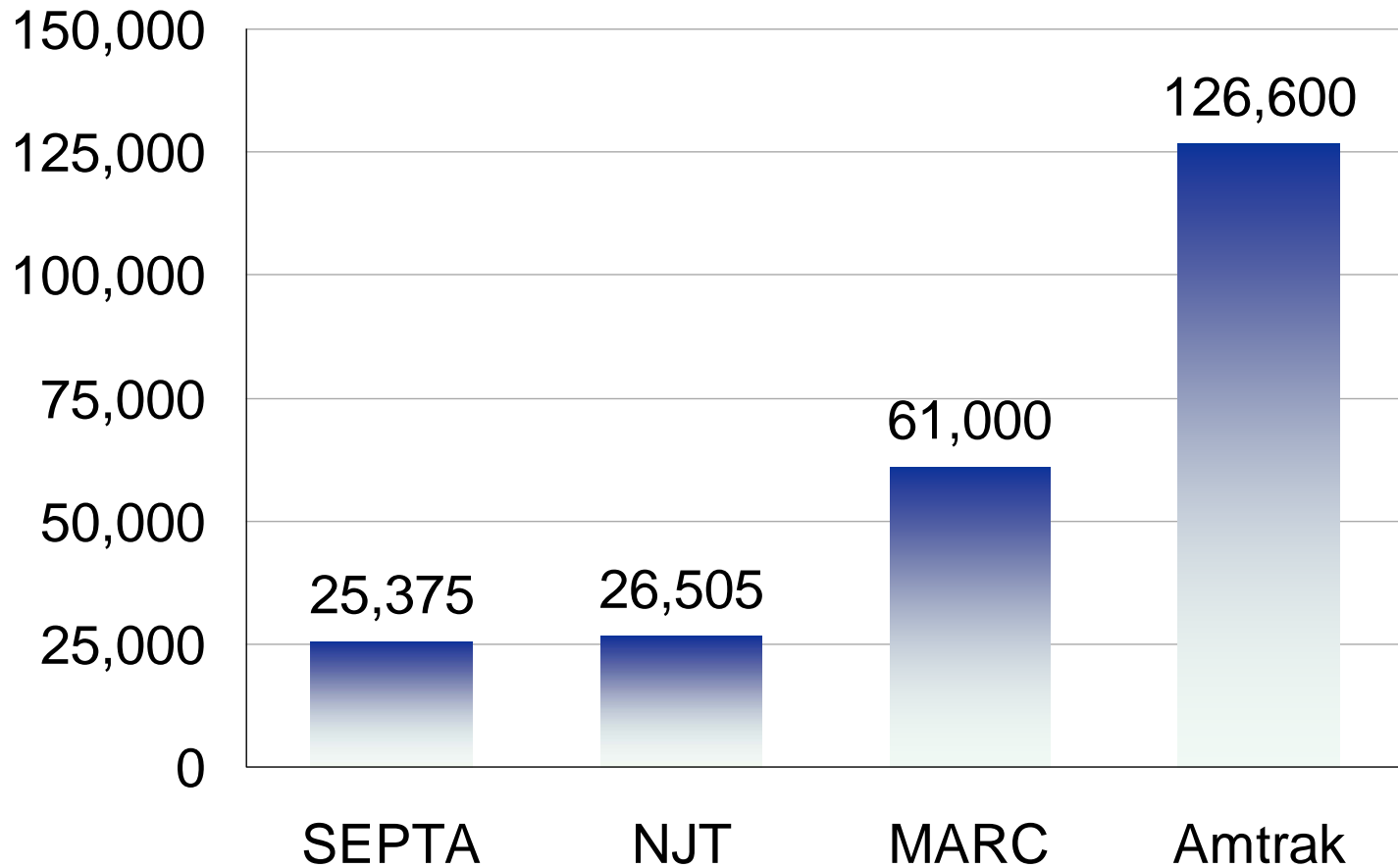
Amtrak's Diesel Locomotive Utilization

Average annual miles



Amtrak Electric Locomotive Utilization

Average annual miles



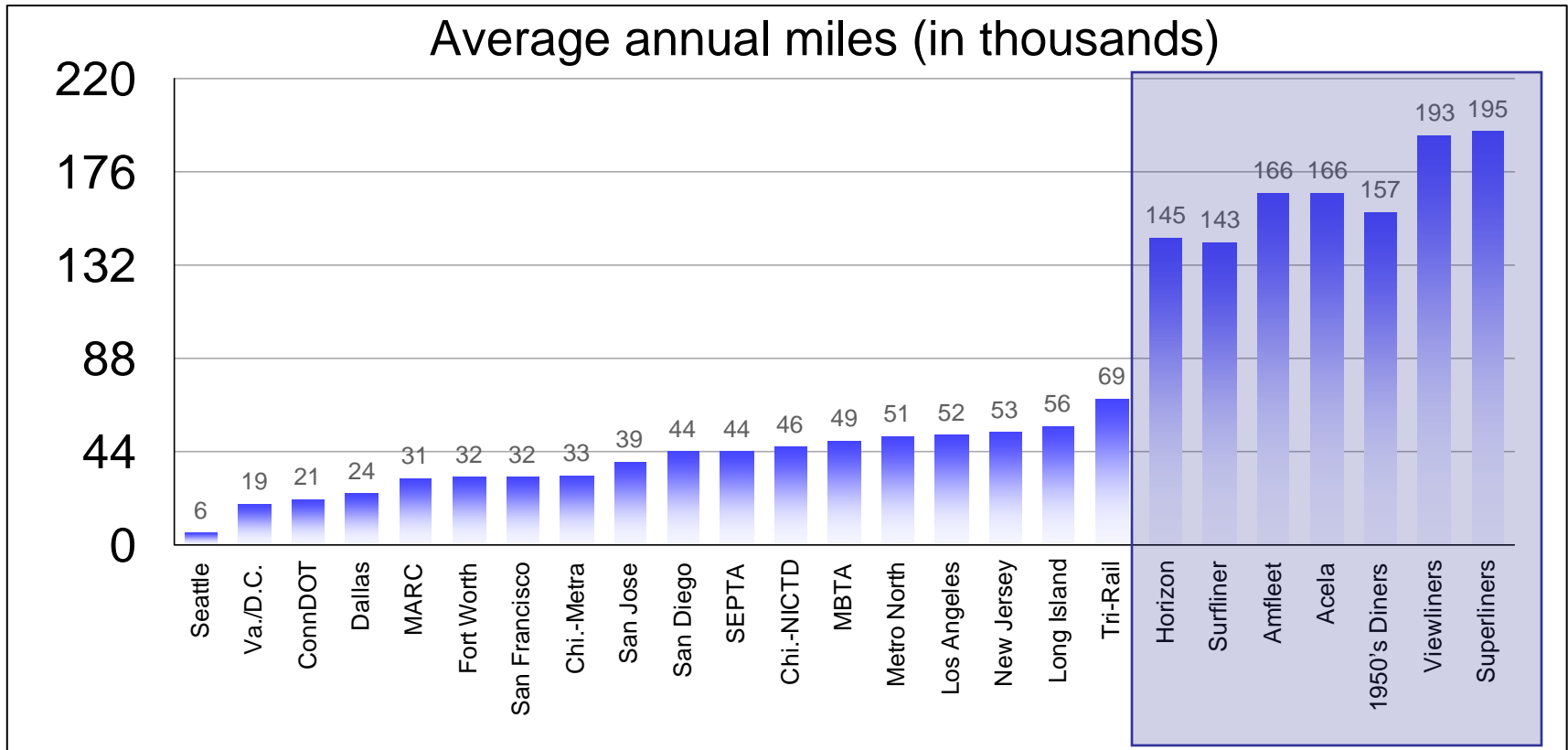
Amtrak's Average Annual Car Miles - Highest in US Passenger Rail

Commuters:

Maintained nights, weekends, off-peak

Amtrak:

Operate 24x7, turnaround in 4 to 6 hours



Amtrak

2010 Fleet Composition – Road Locomotives

	Equip Type	In Service	Build Year	Age in 2009	Average Mileage
<div style="display: flex; flex-direction: column; align-items: center; justify-content: center;"> <div style="background-color: green; color: white; padding: 5px; margin-bottom: 5px;">Electric</div> <div style="background-color: red; color: white; padding: 5px;">Diesel</div> </div>	Acela Power Cars	40	1999-2000	9-10 years	1.2 million
	AEM-7	49	1980-1988	21-29 years	3.5 million
	HHP-8	15	1999-2001	8-10 years	750,000
	P-32 DM	18	1995-1998	11-14 years	1.4 million
	P32	18	1991	18 years	1.9 million
	P40	0*	1993	16 years	1.8 million
	P42	207	1996-2001	8-13 years	1.9 million
	F-59PHI	21	1998	11 years	1.3 million

***15 will be returned to service with ARRA funding**

2010 Fleet Composition - Cars

Equip Type	In Service	Build Year	Age in 2009	Service	Average Mileage
Acela	120	1999-2000	9-10 years	NEC	1.2 million
Talgo	29	1999	10 years	SD	1.7 million
Amfleet I	412 [†]	1974-1977	32-35 years	NEC/SD	3.8 million
Amfleet II	144 [‡]	1980-1981	28-29 years	LD/SD	5.1 million
Superliner I	249 [§]	1979-1981	28-30 years	LD	5.5 million
Superliner II	184 ⁺	1994-1996	13-15 years	LD	2.9 million
Viewliner	50 [±]	1995-1996	13-14 years	LD	2.5 million
Horizon	97	1989-1990	19-20 years	SD	2.4 million
Metroliner	17	1967	42 years	NEC	Unknown*
Heritage	92	1948-1956	53-61 years	LD	Unknown*

[†]55 will be returned to service with ARRA funding

[‡]5 will be returned to service with ARRA funding

[§]14 will be returned to service with ARRA funding

⁺6 will be returned to service with ARRA funding

[±]1 will be returned to service with ARRA funding

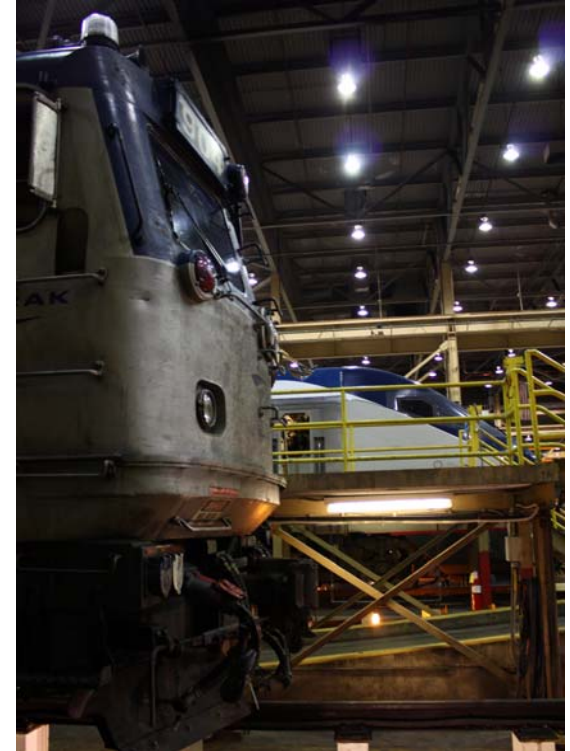
***Mileage for equipment that predates Amtrak is unknown – but in some cases includes 20+ years of daily revenue service**

Major fleet issues

- Age of equipment is at an all-time high:
 - Average Amtrak car is now older than the average car we inherited in 1971
 - Heritage equipment is pushing (and in some cases past) sixty years
- Lack of homogeneity (multiple classes of equipment for short and long distance and corridor service) complicates maintenance
 - Complete standardization will never be possible – but we need to reduce the number of classes and mechanically distinct variants
- Sizes of equipment classes vary widely, and mass obsolescence is a problem
- Supply base is limited – lack of market demand led to market exit
 - Transit and commuter rail have taken attention of remaining manufacturers
 - Amtrak needs to take a lead, or:
 - Market will offer equipment not optimized for intercity service
 - Limited range of choices may lead to increased cost and risks
 - Industry may continue to atrophy

Major components of this fleet plan

- Set limits on maximum equipment age (“lifing”)
 - Need to get away from 60 year old equipment
 - Need to determine useful life and commercial life
 - Useful life is the maximum period we want to have equipment in service – 30 years for engines, 40 years for passenger cars
 - Commercial life is the period when the equipment is maintainable, technically viable and commercially attractive for its designed service
- Model ridership demand in future years
- Develop assumptions for costs and production/purchase rates
- Include associated costs (acquisition, maintenance, etc.)
- Create demand for every type of equipment, and provide potential economies of scale and consistency for suppliers and state partners



Major components of this fleet plan (cont'd)

- Commercial life of equipment is set in plan; from 20-30 years (depending on equipment type)
- Plan designed for 2% ridership growth on existing services – but procurement model allows us to easily expand order sizes based on
 - Requirements of new corridors (Sec 305 committee)
 - Large-scale growth beyond conservative levels
- Average cost is about \$743 million per year
- Total anticipated cost in 2009 dollars will be
 - \$11 billion through 2023
 - \$23 billion through 2040
 - These costs include associated improvements to maintenance facilities, provision of spare parts, and provision of fleet overhaul services for the period
- Total fleet procurement over a 30 year period will include more than 2,500 cars and 700 locomotives, independent of needs for projected state-supported corridors and new services



Equipment life policy

- Drives all demand for new equipment
- Different services and equipment types have different needs
- Commercial life goals used for all planning
 - Comprehensive view of equipment
 - Aim is to avoid “functioning obsolescence”
- Commercial life is a planning tool
 - Actual life will probably vary in practice

Average car age exceeds 24 years– need to get below 15 years

Fleet Plan—Equipment Life Policy

- Amtrak defined equipment life policy
 - Careful analysis of needs throughout the organization was performed
 - Marketing/Customer focus
 - Mechanical
 - Financial considerations
 - Commercial life goals for each fleet type developed for fleet recapitalization
- Commercial life goals:
 - Electric Locomotives - 25 years
 - Diesel Locomotives - 20 years
 - Single Level Coach - 30 years
 - Bi-Level Coach - 30 years
 - Tier I Trainset - 25 years
 - Tier II Trainset - 20 years
- Actual life of equipment will depend on tactical requirements

Acquisition plan

	Single level cars	Bi-level Cars	Diesel Locomotives	Electric Locomotives	Acela Coaches*	Acela Power Cars*	Tier I† trainsets	Switchers
2012-2023	780	420	264	70	150	50	2	41
2024-2040	648	431	225	60	120	40	0	0
Total	1,428	851	489	130	270	90	2	41

- These numbers are approximate – and will vary, depending on variables such as actual growth, seating capacity, etc.
- Acquisition of larger equipment runs spread over period of years
- Production runs of smaller equipment will come in blocks
- Batch sizes and composition to be determined as needed
 - Larger orders will translate into decreased cost-per-unit
 - Additional orders for state-supported corridors could benefit greatly from economies of scale

*Configuration of future *Acela* equipment TBD

†Trainsets compliant with FRA Tier I safety standards for service up to 125mph

Amtrak Fleet Acquisition Plan

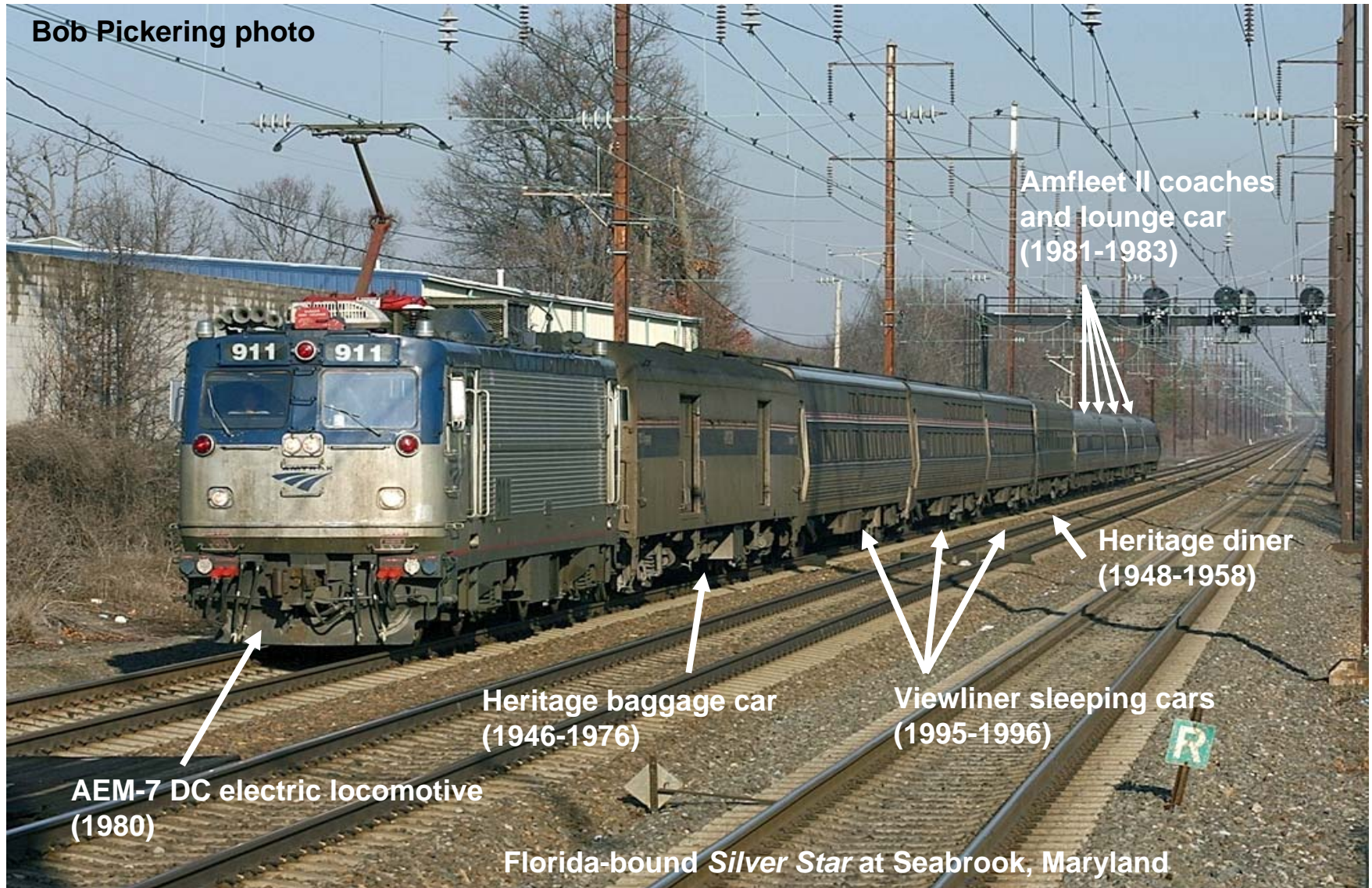
- Provides for a smoothed acquisition of high volume vehicle types
- Grouped acquisition of lower volume vehicle types
- Steady state procurement
 - Approximately 65 single level cars per year
 - Approximately 35 bi-level cars per year
 - 70 electric locomotives under present procurement
 - Begin acquisition of 265 diesel locomotives at rate of 25 per year
 - Replace switcher fleet at rate of 10 per year
- Actual batch sizes and composition will be determined as necessary
- Coordination with PRIIA Section 305
 - Baseline that is scalable to accommodate state needs

Acela Express development and replacement

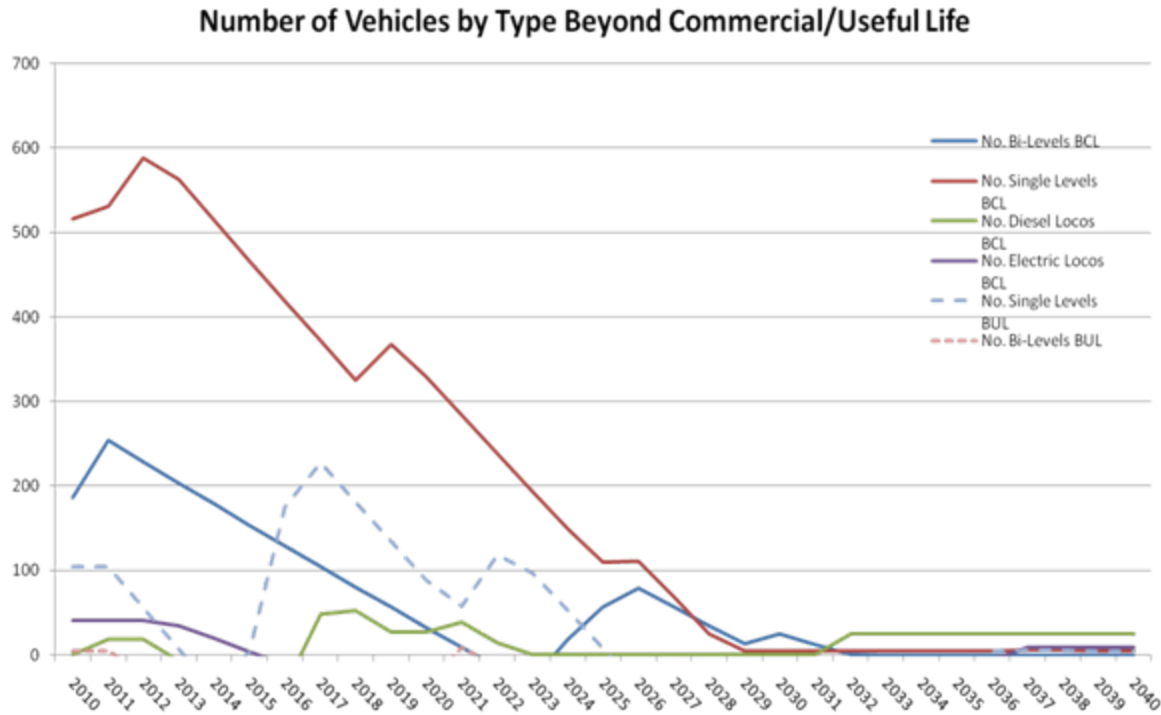
- Smaller fleet makes for a more difficult technical solution
- Factors influencing approach include
 - Need for capacity growth in the short term
 - Plan to replace the fleet by 2020
 - Availability of parts for current fleet
 - Modernization of supporting infrastructure
- Build short term capacity with additional cars and other potential solutions
 - Adapting existing HHP-8 power for additional trainsets
 - Convert *Acela* bistro cars to expand seating
- Commence planning for the next generation within two years



A snapshot of the present



A vision for the future



- Double the existing fleet by 2040
- Maintenance of a “younger” fleet thereafter
- Acquisition and maintenance policies that support the projected age profile
- Work with states on equipment pool committee (sec 305 of PRIIA) for additional acquisition needs
- A thriving railcar industry that supports our equipment needs