

EQUIPMENT COMMITTEE REPORT

Dick Bruss April 3, 2019

Overview of Presentation

- Amtrak's Documents
- Review of Amtrak Fleet Makeup
- Review each of Amtrak's Fleets Now and Future
- Interoperability
- Power Changes in the NEC
- Trainset versus Discrete Cars
- Questions

Amtrak's Service Line & Asset Plans

Congress requires Amtrak to annually provide in February 5-year business line and asset plans for these three services:

- Northeast Corridor
- State Supported Routes
- Long-distance Routes

Amtrak has released 4 documents which relate to Rolling Stock:

1. “Amtrak Five Year Service Line Plans
Base 2018 + Five Year Strategic Plan (FY 2019-2023)”
Business plans for the 3 service lines
2. “Amtrak Five Year Equipment Asset Line Plan
Base 2019 + Five Year Strategic Plan (FY 2020-2024)”
Fleet plans for the 3 service lines
3. “Strategic Fleet Planning”
September 2018
Preliminary fleet plan discussion
4. “General and Legislative Annual Report
& Fiscal Year 2020 Grant Request”
Grant requests for rolling stock

What's In the Fleet Plan?

- Review of Fleet Today
- “..the time to launch the 2nd generation of Amtrak re-fleeting is now.”
 - In 5 years, new Acela, new Diesels, complete CAF, “procure and acquire first new equipment to replace Amfleet -1 ...”
 - Identifies need to “replace Amfleet and Superliner”
- No quantities specified- over next 1-2 years fleet size to be set:
 - What's proposed by vendors,
 - Whether Congress changes Amtrak's long-distance route or service structure
 - Willingness of State Partners to participate
 - Food service model
 - **No specific mention for growth or new routes**

Fleet plan continued

- Principles of Re-fleeting: (paraphrasing)
 - Convert to modern efficient equipment...
 - Use off-the-shelf, proven equipment where possible
 - Standardize equipment across the board where possible
 - Utilize performance-based specs where possible
- **Identifies Capital required for fleet as 3.5 Billion 2019-2024**
- Identifies possible new routes, but doesn't really say much about it.

- Recommended Initiatives (paraphrased):

1. Complete Viewliner-2 Order
2. Complete Acela-2 Order
3. Acquire 75-175 Diesel Locos: Replace LD fleet, possibly some State
4. Replace Amfleet with order of trainsets, self-propelled MU's and/or individual cars
5. Acquire dual power propulsion: by diesel or order to replace Amfleet
6. Execute Multilevel replacement plan for service FY 2026-2031
7. Refresh Amfleet-2, Superliner, Horizon & Viewliner-1
8. Dispose of old retired equipment
9. Review terminals & shops to determine changes per new fleet maintenance practices

Amtrak Fleet Review

- Road Locomotives
- Corridor Trainsets
- Corridor Single Level
- Corridor Bi-Level
- Long Distance Single Level
- Long Distance Bi-Level

Road Locomotives Now

Mode	Type	Where Used	QTY	Age	Status
Electric	ACS-64	NEC and Philadelphia to Harrisburg	70	New	
Diesel	P40/42	Outside NEC; can operate south of NY tunnels	204	Old	Some replaced by new State locos
	P-32-8	Mostly in CA	18	Old	
	F59	CA, OR & WA	21	Old	Replaced by new State SC-44 locos; -Old acquired by RTA
State Diesel	SC-44 Charger	State supported corridors: CA, IL, MI, WA, MO	57	Brand new	Replacing Amtrak locos in West coast & Midwest
Dual Mode	P32AC-DM	Westside connection out of NYP: routes in New York State	18	Old	

Road Locomotives- The Future

Amtrak road locomotives are all quite old. Amtrak is addressing by:

- State “PRIIA” Siemens SC-44 “Chargers” are replacing some Amtrak locomotives, which can then be used elsewhere as needed
- Amtrak has placed an order 12/21/2018 for 75 “Near-PRIIA” ALC-42 locomotives from Siemens, similar to the states’ Charger.
 - Delivery to start 2nd half 2021; Options for up to 100 more
- Amtrak considering options for replacing Dual-Modes:
 - New York MTA will order some of their own- Amtrak could use similar units
 - Amtrak could exercise Dual-mode option for its Charger locomotives
 - Refer to Amfleet-1 replacement discussion --later

Amtrak Passenger Car Fleet

Corridor Trainset	Auto carriers for Autotrain
Corridor- Single Level	Long Distance Single Level
Corridor- Bi-Level	Long Distance Bi-Level

Corridor Trainsets

Trainsets are groups of cars semi-permanently coupled.

ACELA

- 28 ACELA-2, known as Avelia, on order, due starting 2021
- 20 Acela will be returned to the owner (Amtrak leases them)

Talgo

- 29 “Units” + those owned by OR and WA
- Amtrak may order some new ones with Amfleet replacement?

Corridor Single Level Cars- Now

Where Used:

- NEC itself
- State corridors that enter NEC
- Midwest State Supported
- Downeaster

Equipment Types:

- Amfleet-1
- Metroliner cab cars; also NPCU (depowered loco cab cars)
- Horizon

Corridor Single Cars-Future

- Horizon will be “refreshed”
- Amtrak issued 1/18/2019 RFP (Request for Proposals) for Amfleet-1 Replacement, (replaces all cars but Horizon, which are younger)
- Proposals due 5/01/2019; Evaluation summer 2019
- Can be discrete cars and/ or trainsets
- Includes cab cars: Amtrak wants to operate Push-pull where possible
- Car types include: Cab car, coach-end, coach, business, food service
- Trainsets can be 3 to 12 in length
- Trainsets will be interoperable with standard Amtrak locos
- Can be loco-hauled or self-propelled (EMU or DMU)
- If self propelled, can be either single mode or dual mode

Corridor Bi-Level Cars- Now

Where Used:

- California

Equipment Types:

- Surfliner
- California Cars (state owned)

Corridor Bi-Level Cars- Future

- Surfliner: No immediate plan at this time.
- California Cars: State owned
- A multistate PRIIA (California, Illinois) order was placed for 130 Corridor Bi-Level cars with Sumitomo. (Essentially a Surfliner-3):
 - Nippon Sharyo (builder) proved unable to build cars
 - Contract changed to Siemens' *single* level cars instead;
 - 49 cars for CA, 88 for Illinois (137 cars)
 - Cars based on the Brightliner, though modified
 - CA cars 7-car trainset; IL cars 3-two car pairs for 6 car consist
 - 1st Delivery starts 3/2020

Long Distance Single Level Cars-Now

Where Used:

- All long distance routes (6) in NYP + several State trains from NYP

Equipment Types:

- Amfleet-2
- Viewliner-1
- Viewliner-2 (CAF order)

Long Distance Single Level Cars- Future

- Amfleet-2 Cars: recognized need to replace, but not defined yet
Will undergo “refresh”
- Viewliner-1:
“refresh” + Maybe Modify to have same room/ toilet arrangement as Viewliner-2
- Viewliner-2:

Order will be completed!

Baggage: all 70 delivered and in use

Diners: all 25 delivered; about ½ are in use

-Consideration of modifying galley for “different” style of food service

Sleepers: 1 delivered; rest to be delivered by end of 2020

-Consideration of using cars to expand eastern capacity; maybe reinstate “Owl”

Bag dorms: 1 delivered; rest to be delivered by end of 2020

-Consideration of using on some Superliner trains to allow present sleeper-dorm to be full passenger sleeper!

Long Distance Bi-Level Cars- Now

Where Used:

- All western long distance routes + Capitol
- Autotrain
- Sometimes used in Midwest, since they handle cold weather better

Equipment Types:

- Superliner-1
- Superliner-2
- (Auto carriers for Autotrain)

Long Distance Bi-Level Cars- Future

- **Amtrak recognizes the need for replacement of Multilevel cars and suggests a window of 2026-2031 when this would be done!**
- **Amtrak: desire to work with CA to develop a common platform for these cars.** (Long distance and CA short corridor) Possibly PR11A-305?
- **Would aid in developing a larger order size & more attractive pricing**
- **Long Distance car types “include sleeper and other long-distance specific configurations”**
- Dates identified coordinate with generally with retirement ages for both Amtrak Superliner, Surfliner, and several types of California cars.
- Challenge: vastly different floor plan and interior arrangements of LD and SC car types will be hard to accommodate. (Superliner plan is quite efficient with maximizing revenue seating/ accommodations while SC coach uses a lot of space for the stairways).

Interoperability

- Currently essentially all Amtrak cars can operate together in one train:
 - All single levels are inter-operable
 - All Bi-levels are inter-operable
 - All locomotives are inter-operable with all cars
- When new equipment is considered, how will it fit with current fleet?
 - For example, if you change from Bi-level to single level, equipment can't intermingle, which can have huge operational impact
- Long transition time for actually getting new rolling stock, so deployment can be complex.

Power Changes In the NEC

Trains operating partly within NEC and partly outside all experience power change issues. This has schedule impacts, as well as operational ones. Three situations:

- Diesel & 3rd rail (Penn Station to New York state routes)
- Diesel & Catenary (NEC to Harrisburg, Springfield CT, all long distance and State Supported trains south of Washington DC)
- Power changes can be achieved by:
 - changing locomotives
 - dual mode locomotives
 - dual mode EMU or DMU

Power changes continued

- Changing locomotives means more locos required, but each loco type is then optimal for service
- Dual mode equipment is complicated, less reliable, more expensive;
-probably appropriate for locos on New York routes out of NYP
- Power change in DC could be done fairly quickly if station track plan is appropriate with a pocket; since DC is also a crew change, that takes time too, but could happen at the same time.

Single Level Trainset	Discrete Cars
<p>“one design must fit all”</p> <ul style="list-style-type: none"> - Probably not optimal for anyone - But does it work well enough? 	<p>Great flexibility</p> <ul style="list-style-type: none"> -customize within reason for specific service
<p>-once ordered, can't change consist You can't really order more of the same cars later</p>	<p>Change consist size easily:</p> <ul style="list-style-type: none"> - in-route if needed - Adjust consist capacity, say for special event or if ridership changes
<p>If single car fails, the whole trainset is lost</p>	<p>If single car fails, can be cut out & shopped</p>
<p>probably requires major shop changes; eg, wheel shop needs to accommodate full trainset length on both sides of machine. This may use a lot of real estate.</p>	<p>No need to change shop</p>
<p>-can introduce very different “feel to cars” Talgo & Acela are completely different experience than Amfleet</p>	<p>Easier to integrate with existing fleets, esp during deployment</p>
<p>-intercar diaphragms much more weather-tite -can use single vestibule to service two ADA cars</p>	
<p>Easier to provide high performance electronics, such as WiFi</p>	

737 Myth

It has been suggested Amtrak would benefit from the “737 model”

- The 737 is a near universal airplane, but the lines that use it exclusively also select the routes on which they operate to best use the characteristics of the plane. You wouldn't use this plane a 90 mile flight, nor a 6000 mile flight. Amtrak has very diverse route needs
- The core issue with 737 is really that all were built by the same company to the same design. The same company has made the same plane for many years and is likely to continue.
- Amtrak would benefit if it bought an entire fleet (eg, LDSL) from the same company at the same time. Since Amtrak is likely the only customer, the order is likely unique, though there are possibilities of basing coach equipment on the same platform.

QUESTIONS?