Building a SamTrans Bus

Community Relations Committee
Nov. 2, 2016
Agenda Item 7

In The Beginning

- How a SamTrans Bus is Designed?
  - What is the design process?
  - Who is involved – stakeholders?
  - What are the key elements for a SamTrans bus?
- Evolution of the SamTrans Bus
- Building a Bus
- Continuous Improvements
- Benefits
- Next Generation of SamTrans Buses
Design Process

• Fixed route buses are replaced after 12-years
• Technical specifications are developed by the Maintenance Team in collaboration with a variety of stakeholders
• Contracts and Procurement issues a Request For Proposal (RFP)
• Board of Directors approves the award of the contract
• Notice to Proceed (NTP)
• Prep-production meetings with the manufacturer
• Production schedule
• Build, delivery, and acceptance
• In revenue service
Who is involved - stakeholders?

- ADA – SamTrans Accessibility Advisory Committee (SAAC)
- C&P (Contracts and Procurement)
- Citizens Advisory Committee (CAC)
- Finance, Budgets, and Grants
- Information Technology (IT)
- Intelligent Transportation Systems (ITS)
- Legal
- Maintenance, Transportation and Operations Training
- Marketing
- Safety and Security

Key Elements

- Regulatory Compliance
  - California Code of Regulations Title 13 – Division 3 Air Resource Board (CARB)
  - Federal Motor Vehicle Safety Standards (FMVSS)
  - American with Disabilities Act (ADA)
  - Federal Transit Administration (Altoona)
- Safety
- Customer Comfort
- Durability and Reliability
- Ease of Maintenance
- Aesthetics and Ergonomics
- Performance and Cost Effectiveness
Evolution of the Bus

Power steering?  
Air Conditioning?  
ADA compliant?  
Dependability?  
Emissions?

Evolution of the Bus

Comfort, Elegance, Reliability, and more…
Building a Bus

From raw materials to...

engines, transmissions, and hybrid drives

Building a Bus

Parts and components make sub-assemblies
Simultaneously, sub-assemblies (roof) are assembled...
Structures are joined to make the bus frame.

Once the frame is assembled, the interiors and outer skin are added. Final assembly is well on its way!
Building a Bus

Paint, decals, and testing complete the process...at the factory

Building a Bus

Post Delivery and Acceptance
- Internal Quality Controls
- Connect AVL Hardware
- Install Fare Boxes and Program Destination Signs
- Train – Maintenance and Bus Operators
- Design Maintenance Program
- Add Informational Items – Ad Cards, Schedules
Continuous Improvement

Safety Lights
Activated by night run and turn signal

Continuous Improvement

Multi-function door controller.
Enables the Bus Operator to kneel and deploy the ramp from a single location.
Continuous Improvement

**Bus Operator Window – ThermoGuard Glass**
Improves cabin comfort. The light blue colored glass reduces the driver slider glare, reduces skin burn, and protects the Bus Operator from IR and UV rays.

Continuous Improvement

Keeping pace with the times…mobile technology
Continuous Improvement

Marketing’s new schedule rack

Continuous Improvement

3-Bike Rack
Continuous Improvement

Six electric fans replace one hydraulic fan. Improves fuel efficiency, operating temperatures, and lowers noise.

Electric door actuators replace the pneumatic door actuators. The new actuators are a prelude to the electric systems found in all-electric buses.
Continuous Improvement

Low floor buses have a wheelchair ramp versus a wheelchair lift.

Continuous Improvement

- Onboard camera system
- Rear view mirrors
- Transmission
- Electric starter
- LED lighting
- Passenger information system
- C.L.A.S.S. Doors (acoustic sensing)
- On board diagnostics
- GPS and advance vehicle locator systems
- Registering fareboxes
- …and more!
Benefits

- Improved reliability and dependability
- Improved customer experience
- Improved OTP
- Managing operating costs
- Improved safety features
- Significant reduction in emissions
- Bus availability maintains FTA’s spare ratio
- Improved ergonomics for the Bus Operators

Next Generation SamTrans Bus

Low floor articulated buses
Next Generation SamTrans Bus

All-electric buses