LRV4 Project Update

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SFMTA Light Rail Fleet

SFMTA is in the process of a fleet transition. 68 Phase I expansion vehicles (LRV4) have been purchased from Siemens. Phase II replaces the Bredas (2021 to 2025).
Recent Activities

Accepted delivery of final expansion vehicle!
Authorized Siemens to begin work to address flat wheels (track brake work)
Continuing to resolve outstanding technical issues (e.g. HPU)
Continuing to work to improve on-board cameras and screens for operators
# 90-Day Plan

LRV4 initiatives in the most recent 90-Day Plan included the following targets:

<table>
<thead>
<tr>
<th>Availability</th>
<th>Delivery</th>
<th>Doors</th>
<th>Reliability</th>
<th>Track Brakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase vehicle availability to 35 vehicles per day</td>
<td>Complete delivery of the first phase of 68 vehicles</td>
<td>Correct issues with doors and couplers, remove all restrictions</td>
<td>Increase reliability to 8,000 miles MDBF or greater</td>
<td>Submit new design for track brakes to CPUC</td>
</tr>
<tr>
<td>✔️ Averaging 35+</td>
<td>✔️ Arriving first week of Oct.</td>
<td>✔️ Completed</td>
<td>✔️ August at 7,793 miles</td>
<td>✔️ Completed</td>
</tr>
</tbody>
</table>
Building Reliability

Mean Distance Between Failures

Siemens Reliability Program Target

Mileage Between Failures

Target MDBF
Siemens MDBF
Contract Mod. No. 6 Summary

LRV4 Contract Modification 6 includes a number of changes based on input from customers and our transit operators and maintenance staff:

• Phase I design enhancements, such as improved operator switch functionality and easier maintenance through relocation of equipment
• Adding track brakes to the power trucks to Phase I vehicles
• Addressing long lead engineering items for Phase II (seating improvements)
• Initiating long-lead activities to preserve the opportunity to accelerate the retirement of the Breda fleet
## Seating Layout Summary

<table>
<thead>
<tr>
<th>FLEET</th>
<th>INTERIOR DESIGN MODIFICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 replacement</td>
<td>Convert half of longitudinal seats to single transverse</td>
</tr>
<tr>
<td>101 replacement</td>
<td>Convert half of longitudinal seats to double transverse</td>
</tr>
<tr>
<td>68 expansion</td>
<td>Retrofit bench seating style to individual seats, convert half of longitudinal seats to single transverse</td>
</tr>
</tbody>
</table>
Seating Arrangement – Single
Seating Arrangement - Double
Project schedule

We have the opportunity to compress delivery of vehicles to retire the Breda fleet ahead of schedule:

- Increase production rate with delivery of final LRV 14-16 months early
- Federal Transit Administration has approved early retirement of the Breda fleet
Fleet Saturation Rate

Original Schedule

Accelerated Retirement

LRV4  Breda
Ongoing Work

We continue to work to address ongoing feedback we have received and will incorporate into final Phase II production

• Pole placement at front entrance to enhance accessibility
• Improved monitors for Operators
• Improved customer information
• Determining location and number of additional blue seats
Next Steps

• Continue progress on reliability and availability
• Oversee initial retrofit work
• Anticipate returning with Phase II next steps in early 2020 (Modification 7)