MEMORANDUM

Southeastern Pennsylvania Transportation Authority
Operations Division
1234 Market Street, 10th Floor, Philadelphia, PA 19107-3780

Courtesy • Cleanliness • Communication • Convenience

TO: Distribution

FROM: L. Diggs

DATE: October 7, 2010

SUBJECT: Silverliner V Fleet Procurement Progress Report September 2010

Attached is the Progress Report for the acquisition of the Silverliner V Rail Car Fleet, which summarizes overall project activity through September 2010. Please contact me if you have any questions or comments.

GENERAL MANAGER
J. Casey

AUDIT & INVESTIGATIVE SERVICES
J. Sullivan

Inspector General
M. O'Donnell

BOARD OFFICE
S. Jobs

BUSINESS SERVICES
N. Patel

Information Technology
B. Zebrowski
A. Duckett

DBE Program Office
L. Claitt

Procurement
A. Abdallah
A. Tarter
J. Kerrigan
E. Bongard

CUSTOMER SERVICE
K. Heinle

Communications
E. Mintz

ENGINEERING, MAINT., & CONSTRUCTION
J. Knueppel

Project Control
J. Grosso

FINANCE AND PLANNING
R. Burnfield

Capital Budgets
C. Popp-McDonough

Operating Budgets
F. Gormley

Strategic Planning & Analysis
B. Comati

Service Planning
C. Webb

HUMAN RESOURCES
S. Van Buren

Recruitment
D. Amspacher

Training
T. Innaurato

LEGAL
N. Staffieri, Esq.

OPERATIONS

Admin. & Finance
P. Morris

Surface Transportation
M. Liberi

Control Center
R. Hopkins

Labor Relations
F. Keating

Rail Transportation
R. Hanratty
A. Andrijiwskyj

Vehicle Engineering & Maint.
L. Curley
J. Brattelli

New Vehicle Programs
D. Casper
J. Coppedge
J. Cox
D. Gibbone
C. Tuzzo
E. Williams

PUBLIC & GOV'T. AFFAIRS
F. Kelly

Media Relations
R. Maloney

Gov't & Community Affairs
F. Jones

PUBLIC & OPER. SAFETY
J. Jordan

System Safety
J. Fox

Rail Locations

Frazer Shop
S. Hilbert

Overbrook Shop
P. Norcini

Powelton Ave. Yard
G. Fisher

Roberts Ave. Shop

Wayne Junction Shop
P. Norcini

Other Locations

FTA:
R. Kanzler

Hill International (FTA PMO)
A. Keltos

PENNDOT:
E. Bonini

STV Inc.:
C. Holliday
T. Janssen

Delaware Transit Corp.
L. A Loyola

Attachment

Silverliner V Rail Car Procurement

Progress Report

September 2010

Southeastern Pennsylvania Transportation Authority

Silverliner V Rail Car Procurement Project

Progress Report

September 2010

Executive Summary

Activities in September focused on pilot car and climate room testing as well as production activities at the Weccacoe plant and the communication system.

UTS continued dynamic testing of the pilot cars. These daily test runs are primarily completed at this time. Overall the testing is going quite well and the vehicles have been meeting the requirements. Minor corrections and adjustments continue and are normal for this stage of the program. In late September, the cars started simulated revenue service testing, which exposes the vehicles to regular, day-to-day operation and will reveal any remaining issues that might persist. This test will likely continue until mid-October. In addition, the pilot cars continue to be used for SEPTA employee training.

The communication system suppliers, Woojin and KTCC, continued to resolve the outstanding open issues. In mid-September the Type Test and First Article Inspection (FAI) took place. While few items remain open, the test results demonstrated good progress. At this time there should be no additional delays to vehicle delivery resulting from these open items.

At UTS' South Philadelphia final assembly facility, the number of carshells remains at 69, with 20 more carshells stored at the Philadelphia port due to lack of storage space at the Weccacoe plant. At the end of August, the Changwon plant shipped an additional 17 shells that are due to arrive in Philadelphia in early October. It is expected that these shells will also be stored at an off-site location.

At the Changwon plant removal of surface rust on carbon steel components of improperly stored carshells has been completed. SEPTA inspectors report good results of the applied processes. The remaining 11 carshells are currently awaiting installation of floor panels.

Labor expertise and experience levels of the workers at the local plant continue to be a challenge. To minimize the impact, UTS maintains additional workers from the Changwon plant to train the local workers as well as help to catch up to the production schedule. UTS is continuing to implement new processes and procedures to streamline production flow.

In Summary.....

All but one vehicle subsystem have completed First Article Inspections (FAI) and Type Tests, while the pilot cars continue dynamic testing at SEPTA.

Schedule	The pilot cars continue dynamic testing at SEPTA. Production car delivery is planned for October 2010 for the first, and August 2011 for the last production car.
Weight	A single car weight of 146,600 pounds has been confirmed, which is 7% over the target weight. UTS has confirmed that this weight increase will not result in performance or material problems.
Costs	Payments to UTS total $65M.
Construction	120 carshells have been assembled, and 111 pre-outfitted at the Changwon facility.
Production	69 carshells are currently at the Weccacoe plant in Philadelphia, with 20 additional carshells stored off-site. 17 more carshells will arrive at the Philadelphia port in early October.

The first production car (#702) was shipped early July to the National Research Council in Ottawa, Canada, for

climate room testing. Early tests revealed the need for design improvements, which are being tried out at the test facility before implementation into the production cars commences. Because some factory tests could not be finished before shipment, this car will return to the Weccacoe facility for completion of the test and inspection programs.

Contract Scope

This project provides for an acquisition of 120 new regional rail cars for the SEPTA Regional Rail commuter service. Four of these are being purchased by the Delaware Transit Corporation (DTC) so that SEPTA can meet future ridership growth on the Wilmington Line.

These new electric multiple-unit (EMU) commuter cars will replace the existing Silverliner II and III rail cars as well as provide additional cars to supplement the fleet in response to current and projected ridership increases.

The rail car supplier is United Transit Systems (UTS), a consortium of Hyundai-Rotem, South Korea, and Sojitz Corporation of America.

Suppliers of Major Equipment	
Hyundai-Rotem	Carbody
Columbus Steel (CSC)	Truck Frame
UTC	Truck Assembly
Mitsubishi Electric (MELCO)	Propulsion, High Voltage
Transtechnik	Auxiliary Power
Westcode	HVAC
Faiveley	Doors
Wabtec	Brakes, Couplers
Woojin, KTCC	Communications
Quester Tangent	Central Diagnostic
Kustom Seating	Seats

In addition to the rail cars, the program also includes: spare parts; publications and training; special tooling; and coupler heads (to enable coupling to Silverliner IV).

Changes and Change Orders

Change Order No. 1, the exercise of 16 option cars, was executed in June 2007. Change Order No. 2, a four month project time extension, including a six month delivery extension for the pilot cars due to excusable delays, was executed in November 2008. Further included is the use of drawbars between married pair cars, rather than mechanical couplers, and the change of the flooring material to an Altro product. Also part of this change order is a revision of the spare parts list, which has been adjusted based on the actual vehicle design, and a correction of payment milestones.

Budget Status

BUDGET	BASE-LINE	CURRENT	EXPENDED
	(06/2006)	(EAC)	TO DATE
	($x1,000)	($x1,000)	($x1,000)
Professional Services	8,665	11,030	7,653
Cars/Spares	244,237	274,084	64,986
Surveill. System	0	3,533	0
Autom. Pass. Count. system	0	2,098	0
Project Management	7,890	7,890	4,327
Travel	785	875	863
F/A Labor/Engineering Support	1,463	1,463	519
F/A Labor/F/A Material	1,500	1,500	126
Tools & Equipment	500	500	20
Training	1,750	1,750	96
Indirect Support	17,328	19,807	3,972
Contingency	15,882	5,469	0
TOTAL PROJECT	300,000	330,000	82,560
Expended as of 9/18/10 :			**$82,560,347**

Note: the CURRENT figures include the 16 option cars.

Progress Payments

On May 16, 2007, the first milestone payment was made to UTS. A payment for the option cars followed on July 3, 2007. Since November 2008, payments for the completion of major system FAIs, the carbody load test, and the pilot car delivery and conclusion of the Buy America Post Delivery audit have been made. Combined, all payments add up to $64,986,050.

Weight Report

After completion of the first pilot car in fall of 2009, UTS confirmed that, with 146,600 pounds for the single car, the vehicles are about 7% over the target weight.

UTS has provided statements and calculations from suppliers that confirm that this increase will have no impact to the materials or the performance of these systems.

Project Schedule

In July 2008, the SEPTA Board granted UTS a project extension of four months due to delays that were out of UTS' control. In addition, a six-month extension for delivery of the pilot cars was granted.

In March 2009 UTS stated that there are additional project delays. Although UTS has been working under a mitigation plan that attempted to reduce the pilot car delivery delay to six months, UTS was unable to meet this targeted mitigation schedule. The pilot cars arrived at SEPTA in March of 2010, and we now anticipate a production car delivery in late October.

Start-up activities at the new facility in Philadelphia, such as the hiring and training of a new workforce, remain the main reason for a slower than expected progress of the production cars. The slow advancement of new production processes also add to a delayed incorporation of efficient work flows.

ACTIVITY	CONTRACT SCHEDULE	CURRENT STATUS[1]
Notice to Proceed	June 2006	June 2006 (A)
Approval of Major Equipment Suppliers	October 2006	December 2006 (A)
Completion of Carbody Load Test (Pilot Vehicle)	March 2008	December 2008 (A)
Completion of First Article Inspections (FAI's)	May 2008	October 2010 (F)[2]
Pilot Vehicle Delivery	June 2009	March 2010 (A)
First Production Vehicle Delivery	January 2010	October 2010 (F)
Last Production Vehicle Delivery (car 104)	October 2010	June 2011 (F)
Last Option Vehicle delivery (car 120)	December 2010	August 2011 (F)

(A) = Actual, (F) = Forecast
1) Contract Schedule based upon current contract, which includes a four months delivery extension. Forecast based on current UTS schedule.
2) Except for the wayside communication system all FAIs have been completed.

Project Progress Summary

Below table summarizes the estimated progress of key project activities:

Subsystem FAI completion:	99%
Completion of pilot car outfitting:	100%
Completion of pre-delivery car testing:	100%
Completion of pilot car testing	85%
Number of assembled carshells:	120
Carshells at the Weccacoe facility:	69 (+20)
Completion of first production car outfitting:	99%

Test of Passenger Information System on Pilot car 701

Quality Assurance

With the manufacturing conclusion of the last carshell at the end of June, the remaining carshells are now in the pre-outfitting phase at the Changwon plant. A total of eleven carshells remained in Korea awaiting floor panel installation.

With the upcoming completion of carshell manufacturing at the Changwon plant, the focus of activities is now shifting to the Weccacoe facility. At the end of September, a total of six cars were in the production test area of the shop. A number of factors are impacting test activities, including issues associated with the quality of wiring and cable installations. During the last week of September, UTS was focusing on mitigating the wiring issues identified. SEPTA inspectors are continuing to monitor activities on the shop floor in support of the upcoming pre-delivery inspections, which are expected to begin in October.

A follow-up review of material control issues was conducted by SEPTA during the second week of September. Again we observed only moderate progress being made to address material control issues on the

production line. However, UTS is continuing to work through their processes for implementing these new changes. Additional employee training also appears to comprise part of the process improvement plans. A follow up review will be conducted in mid-November.

Pilot Cars

During the month of September, UTS continued to close outstanding open items on the pilot cars. At this point very few items remain.

Dynamic testing of the pilot cars on the SEPTA and Amtrak operating network continued. To date most test runs have been successful and confirmed specification compliance. While some functional problems have been discovered, UTS and its suppliers are taking immediate action to resolve those.

In late-September simulated revenue service testing of the pilot cars commenced. During these tests the vehicles are operating as if they were in regular revenue service. No failures resulting in service interruption are allowed. This test is also referred to as a "shake-down" test for the discovery of potential remaining issues prior to actual revenue service.

Production Cars

The tenth shipment of seventeen carshells is expected to arrive at the port in Philadelphia by early October. These carshells will be stored off site until additional space can be made available at the Weccacoe facility.

Insulation installation in Changwon on one of the last cars

The shortage of composite floor panels that is impacting the final shipment of eleven carshells has now been mitigated. Resident inspectors in Changwon reported that floor panel installations started again in mid-September.

Approximately forty carshells are in various stages of outfitting at the Weccacoe facility with six cars in the static test area.

Static testing of production cars at Weccacoe

Static testing of the first production car (702) was not completed before shipment to Canada for climate chamber testing. Once this testing is completed, the car will return to the Weccacoe facility to continue the test program.
UTS continues to refine the flow of production cars at Weccacoe. To date the sequencing of carshells has been presenting problems. Driven by material shortages and staging of materials to the production floor, UTS continues to establish a repetitive process for the outfitting of cars. With the stabilization of material deliveries to Weccacoe and efforts to improve material staging and availability for the production workers, we anticipate a gradual improvement to the carshell flow rate beginning in October.

Issues and Concerns

Communication System: After unsuccessful equipment testing during the previous months, a communication system type test and FAI in mid-September showed great improvements, resulting in the close-out of most open items. While some items require additional corrections and modifications, they are not preventing the cars from conducting simulated revenue service testing. The remaining items will be corrected over the next month or two and will be monitored closely.

Final Assembly: Assembly activities at the Weccacoe plant are not yet proceeding as smoothly as originally hoped for. While some initial problems have been

expected for this new facility with newly hired staff, production, and especially quality, processes need improvement. A combination of material delays and labor qualifications appear to be the main reasons for the slow progress at that facility. In order to mitigate some of these delays, UTS dispatched additional workers from their Changwon plant to the final assembly facility to assist and train the newly hired workers. Recently UTS added many new local workers in an attempt to alleviate this problem. While improvements have been noticed, this situation continues to be monitored closely.

Climate Room Testing: The climate room testing at the National Research Council in Ottawa, Canada, revealed that some modifications are required for the insulation and heating systems of the vehicles. UTS continues the investigation of various changes. These modifications will have to be implemented into the current production vehicles, which for a few vehicles will require some rework, while for most vehicles these changes will be part of the normal outfitting process and therefore should have little impact on the vehicle delivery schedule.

One Month Look-Ahead

The following confirmed activities are scheduled for the coming month:

Technical Meetings/Discussions:

- Weekly Engineering Meetings

Project Management:

- Monthly Progress Meeting – October 6
- Weekly Project Meetings

First Article Inspections (FAI) / Type Tests:

- N/A

Pilot Car Activities:

- Simulated Revenue Service Tests continues
- Training continues
- Implementation of remaining open items

Production Car Manufacturing:

- Car 702 remains at the climate testing facility in Ottawa, Canada as of the end of September. Testing was expected to conclude by mid-September but a number of test related issues have resulted in UTS having to extend their test activities into October.
- Testing of the first production cars at the Weccacoe plant is expected to resume in early October following completion of wiring corrections.
- Surface rust on the improperly stored carshells in Changwon has now been removed and these shells are in the final stages of pre-outfitting. A total of eleven carshells are undergoing completion activities and are expected to ship to the US around the end of October.
- The eleventh shipment of seventeen carshells is expected to arrive at port in Philadelphia in early October.