



METRO

FUEL MANAGEMENT & CONTROLS AUDIT (20-05)

Terry Follmer, VP of Internal Audit

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EXECUTIVE SUMMARY

The Fuel Management & Controls audit was originally listed as a contingent project in our FY2019 - 2020 Audit Plan approved by the Capital Metro Board, however, management requested that it be completed this year because a new Fuel Management System was implemented. The audit covered Capital Metro's fuel program and determined whether internal controls over fuel management were effective and critical contractual obligations were being performed and adequately monitored. The audit results including the objective, scope, and conclusion are as follows.

Background

Capital Metro purchased a new Fuel Management System called Gasboy that was installed by Petroleum Solutions, Inc. (PSI) for \$384,950 from 2016 to 2018. The installation was at three bus/paratransit locations (Gasboy was not installed at a fourth Paratransit location) and included equipment (e.g. rings, badge ID's, pedestal, pump), technical support, and training. Gasboy helps automate and track dispensing of fuel and other liquids (e.g. oil, coolant) at the pumps and in some of the work bays. The Gasboy system includes RFID (Radio-Frequency Identification) rings installed on each vehicle which allows eight fields to auto-populate (Vehicle ID, Serial Number, Station Name, Date, Time, Product, Pump Number, and Quantity) and requires manual entry for two fields (Fueler ID and Mileage). Capital Metro also purchased badge ID's to auto-populate the Fueler ID, but this has not been implemented. Additionally, an automatic mileage reader feature is available for purchase to auto-populate the mileage.

In CY 2019, Capital Metro paid \$14 million for fuel (unleaded gasoline, diesel, and red-dye diesel) which is the fourth highest operating expense (see Appendix A for a summary of fuel cost and quantity for 2019). The Gasboy system is used to dispense fuel by service providers within Cap Metro's Bus Operations, Paratransit, Rail, Security, and Real Estate & Asset Management departments and stored in 18 tanks across four Capital Metro locations. (See Appendix B for a flowchart of the fuel dispensing process and Appendix C for pictures of Gasboy equipment.) Capital Metro uses several systems to manage fuel including Gasboy (fueling), Veeder Root (tank measurement), Sharepoint, a webpage used to verify fuel payments, and AX Accounting System for payment. Capital Metro pays for fuel and monitors the management of fuel by the service providers. Because service providers do not actually pay for fuel, it is especially important for Capital Metro staff to have strong fuel controls in place to monitor the service provider's performance.

The Gasboy system allows you to control access to fuel while also providing improved analysis and feeds data to other systems. Data from Gasboy is automatically uploaded into Spear (Cap Metro's Asset Management System) and is important for the preventative maintenance of the vehicles. For example, when a bus is fueled the Service Island Attendant manually enters the mileage from the hubodometer (attached to the wheel) into Gasboy and this data is uploaded into Spear. Once the bus reaches 6,000 miles, Spear alerts staff that the bus needs preventative maintenance to help keep the buses in good condition. Gasboy also acts as a preventative control

and only allows authorized fuelers and vehicles numbers to be entered into the system and as a detective control because historical data can be analyzed by fueler name, vehicle number, date, pump, liquid type, or quantity to look for outliers and unusual patterns.

Audit Objective & Scope

The primary objective of this audit was to determine whether internal controls over fuel management were effective and contractual obligations were being performed and adequately monitored. The audit scope included a review of the project management and installation of Gasboy system, analysis of Gasboy data from January 2019 through January 2020, and controls testing. Additionally, we performed a process walkthrough of the fuel dispensing controls.

Opinion

Overall, we determined that Capital Metro needs to strengthen fuel controls and assign one-person responsibility over the whole fuel program. We made the following recommendations (see finding table below for full listing):

- Update fueling procedures and improve Gasboy controls.
- Improve data analytics and investigate unusual variances.
- Increase monitoring for special equipment codes.
- Improve controls for overrides.

The detailed audit report that follows provides more context and understanding on the audit opinion and recommendations above.

This audit was conducted in accordance with US Government Accountability Office's Generally Accepted Government Auditing Standards (GAGAS) and the Institute of Internal Auditor's International Standards for the Professional Practice of Internal Auditing. These standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. The audit was conducted by the following staff members in the Capital Metro Internal Audit Department:

- Sarah Daigle, Internal Auditor II (Project Lead)
- Terry Follmer, VP of Internal Audit

Recommendations to strengthen controls and improve accountability were provided to management. Management agrees with the internal audit recommendations and has provided target completion dates which are included in the detailed audit report below. A follow-up audit is performed semi-annually (i.e. May and November) to ensure management action plans for all issued audit reports are completed timely.

We appreciate the cooperation and assistance provided to us throughout this audit.

<i>Issues & Risk</i>	<i>Recommendation</i>	<i>Management Action Plan</i>
<p><u>1. UPDATE FUELING PROCEDURES & IMPROVE GASBOY CONTROLS</u></p> <p>The Gasboy system is very important because it controls and records who dispenses fuel together with other details (e.g. gallons dispensed, Vehicle ID, mileage, pump number, etc.). We reviewed user access controls related to the dispensing of fuel and noted the following weaknesses:</p> <ul style="list-style-type: none"> • Fueling Procedures were last updated in 2017 but have not been updated to reflect the new Gasboy system, staffing changes, and other current practices. According to management this is because they are still addressing some system issues. • We noted that 434 employee ID numbers have been programmed to allow them to dispense fuel which seems unnecessarily high. • One Gasboy system administrator also had the ability to dispense gas. • Two terminated Fueller ID’s still had access to dispense fuel. • Security camera in the following area was broken: 2910 (camera facing unleaded gasoline pump). • Location 817 (Paratransit) did not have Gasboy and there was no automated fuel system used for monitoring. CY 2019 unleaded fuel dispensed was \$142,479 at location 817. • CMTA security vehicles are not required to enter a Fueller ID into the Gasboy system and instead enter a generic code which does not provide an audit trail. 	<p>The Chief Customer Officer/Chief Operating Officer, VP of Bus Operations & Maintenance, Director of Vehicle Maintenance, Director of Security & Emergency Management, and VP of Demand Response and Innovative Mobility should complete the following:</p> <ol style="list-style-type: none"> a) Assign a single member of management with direct responsibility over the entire Capital Metro fuel system and program. b) Update the Fueling Procedures to reflect current practices and expectations for all users. c) Each department and respective service provider should determine which positions have a need to dispense fuel and formalize this into a written document. Additionally, review the Vehicle ID’s and 434 Fueller ID’s with access to pump fuel and eliminate any that are unnecessary. d) Request that the service providers send list of terminations to Gasboy administrators on at least a monthly basis to ensure they are removed from the system in a timely manner. e) Ensure the security camera facing the gas pump at 2910 is functioning and repaired. f) Establish monitoring controls for dispensing fuel at the 817 Paratransit location since there is no Gasboy system. g) Identify a process for establishing a monthly review of fuel data for security vehicles to monitor consumption and review for reasonableness. 	<p>Management agrees with the recommendations.</p> <p><u>Target Completion Date:</u> March 31, 2021</p>

<i>Issues & Risk</i>	<i>Recommendation</i>	<i>Management Action Plan</i>
<p><u>2. IMPROVE DATA ANALYTICS & INVESTIGATE UNUSUAL VARIANCES</u></p> <p>We performed data analytics on Gasboy data from January 2019 to January 2020 to ensure controls are working properly and identified the following unusual variances:</p> <ul style="list-style-type: none"> • Improper Fuel Type: There appears to be data and system limitations because 775 gallons of gas were recorded as being dispensed into 35 diesel-using vehicles. Additionally, 515 gallons of diesel were recorded as being dispensed into 14 gas-using vehicles. For example, some staff used a vehicle number instead of a special equipment code to track fueling. • High Frequency of Fueling: One Fueler ID at 9315 location fueled 1,278,606 gallons of diesel and gas (27,826 instances) which represented 13% of total fueling instances. • Zero Vehicle Mileage: Gasboy has a system control that prevents the pump from being activated when odometer/hubodometer mileage is 500 miles greater or less than the last fueling mileage. However, we found 274 transactions where mileage was zero and the system control did not work as intended. <p>The unusual variances listed above should be investigated to ensure that the Gasboy system is properly configured and functioning as intended and staff are not misusing fuel.</p>	<p>The VP of Bus Operations & Maintenance and Director of Vehicle Maintenance should complete the following:</p> <ol style="list-style-type: none"> a) CMTA monitoring should include data analytics to identify unusual trends and outliers that might indicate theft or improper fueling on an annual basis and send results to each department for further investigation. b) Evaluate configuration of Gasboy system to prevent the following: wrong fuel (diesel or unleaded) for Vehicle ID; blank fueler ID; blank Vehicle ID; and vehicles with unusual odometer/hubodometer mileage. 	<p>Management agrees with the recommendations.</p> <p><u>Target Completion Date:</u> March 31, 2021</p>

<i>Issues & Risk</i>	<i>Recommendation</i>	<i>Management Action Plan</i>
<p>3. SPECIAL EQUIPMENT CODE FOR FUELING NOT MONITORED</p> <p>Special equipment codes are used by service providers and some Cap Metro employees to dispense unleaded fuel for gas cans, generators, weed-eaters, lights, etc. These types of equipment do not have a Vehicle ID so staff use a “catch-all” code for the three locations. They are monitored and reviewed on a quarterly basis by management by looking for high quantities over 10 gallons and other anomalies. The unleaded fuel consumption for the 3 special codes from January 2019 through January 2020 was:</p> <ul style="list-style-type: none"> • 2910 Location: 443 gallons of gas dispensed. • 9315 Location: 284 gallons of gas dispensed. • 509 Location: 106 gallons of gas, diesel, motor oil, transmission oil, and coolant dispensed. <p>After analyzing Gasboy data for the 509 location, we found that 13% (9 out of 69) of dispensing instances were over 10 gallons (11-28 gallons) and 5 different types of liquid were dispensed instead of just gas which is used in the equipment. All of these could indicate improper fueling. Additionally, we found that the 509 location special equipment code was not monitored and reviewed on an ongoing basis like the other two codes used at locations 2910 and 9315.</p>	<p>The VP of Bus Operations & Maintenance, Director of Vehicle Maintenance, and VP of Demand Response and Innovative Mobility should complete the following:</p> <ol style="list-style-type: none"> a) Appoint one CMTA employee responsible for reviewing and monitoring all three of the special equipment codes. b) If possible, set a quantity limit for the special equipment codes in Gasboy to help prevent improper fueling over 10 gallons. c) Location 509 data analytics and unusual usage of fuel should be shared with Paratransit for possible investigation. 	<p>Management agrees with the recommendations.</p> <p><u>Target Completion Date:</u> March 31, 2021</p>

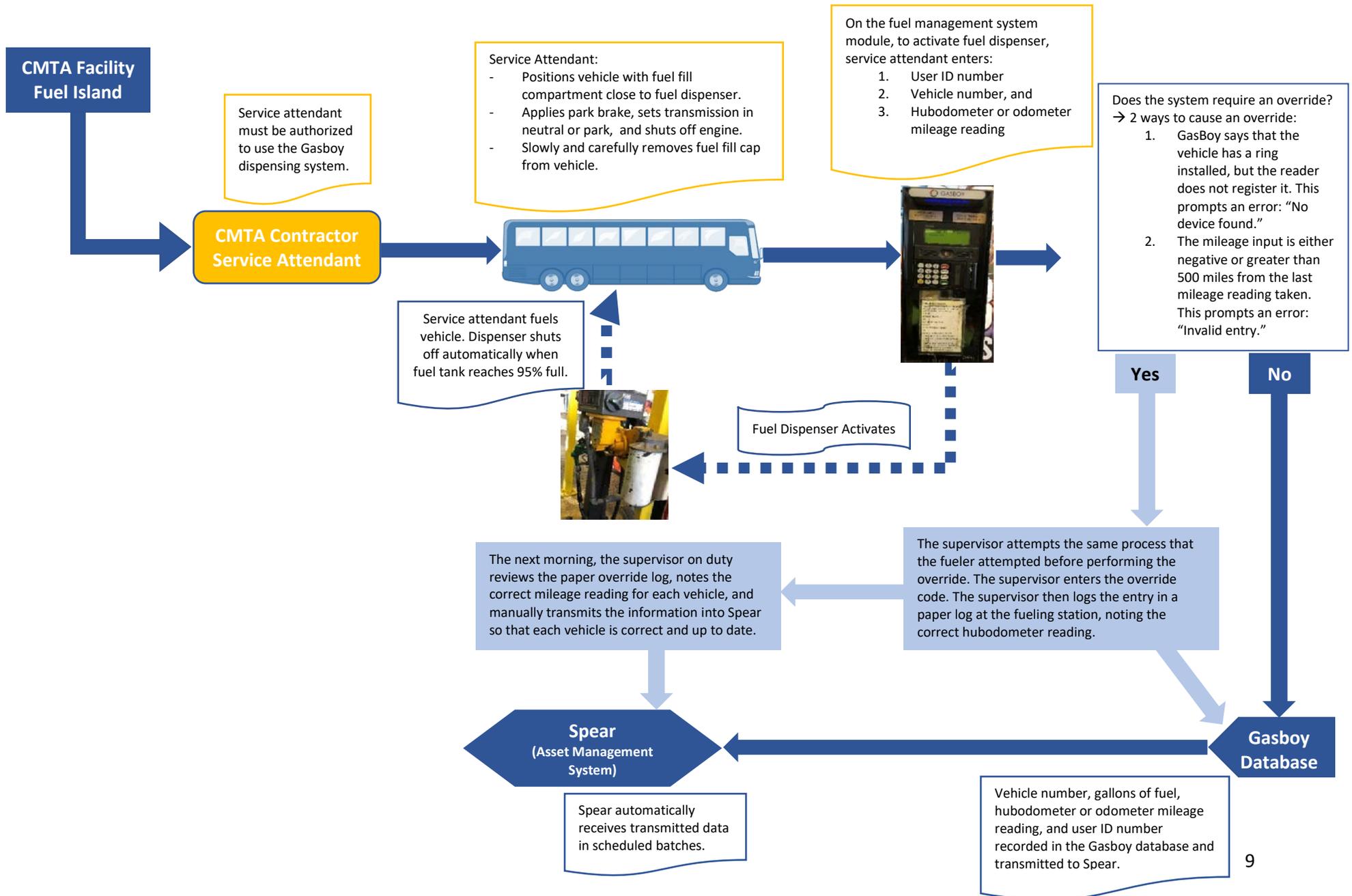
<i>Issues & Risk</i>	<i>Recommendation</i>	<i>Management Action Plan</i>
<p>4. IMPROVE CONTROLS FOR OVERRIDES</p> <p>According to the Fueling Procedures, only supervisors should enter an override which is a ghost bus code (one of 4 specific Vehicle ID's) into Gasboy when the ring is not working or the hubodometer is defective and the 500-mile system control prevents fuel dispensing. When an override code is used, mileage is not automatically uploaded into Spear and MV has to manually update Spear and Cap Metro staff have to manually update Gasboy (to prevent the 500-mile system control from being triggered the next time and requiring another override.) The service provider is contractually required to monitor and address override issues and Capital Metro oversees the service provider's monitoring. According to management, these special codes were designed to address system issues by improving dispensing efficiency and allow management to document which vehicle received the fuel later. Override codes from January 2019 through January 2020 were as follows:</p> <ul style="list-style-type: none"> • 2910 Location: 2,302 instances • 9315 Location: 2,293 instances • 509 Location: 0 instances • Override Code for Test Equipment: 2 instances <p>We analyzed Gasboy overrides and identified the following areas of control weakness:</p> <ul style="list-style-type: none"> • High Frequency of Overrides: On average, 354 overrides were completed each month for all locations which means MV and Cap Metro staff had to complete a manual mileage update for each one of these to ensure mileage was tracked accurately. 	<p>The VP of Bus Operations & Maintenance and Director of Vehicle Maintenance should complete the following:</p> <ol style="list-style-type: none"> a) Appoint a CMTA employee with responsibility for monitoring all overrides to ensure that the service providers and Cap Metro staff are tracking the reasons for overrides and working towards reducing overrides. b) If possible, add a system control to Gasboy that only allows overrides to be performed by supervisor Fueler ID's. c) Change the override codes on a yearly basis and delete the override code for test equipment since it was only used twice. d) Ensure the service providers properly train staff on when/how overrides are used (e.g. make 3 attempts before overriding, only supervisors can complete overrides, etc.) 	<p>Management agrees with the recommendations.</p> <p>Target Completion Date: December 31, 2020</p>

<i>Issues & Risk</i>	<i>Recommendation</i>	<i>Management Action Plan</i>
<ul style="list-style-type: none"> • Reasons are Not Adequately Tracked: MV records a generic reason for an override (e.g. Invalid Number for the Vehicle ID) in Spear, however, this doesn't capture the underlying reason for the override. Cap Metro also does not track reasons for overrides. • Non-Supervisors Performing Overrides: Only supervisors are authorized to perform overrides, however, out of the top 5 individuals who completed overrides, only 2 were supervisors and the other 3 were service island attendants who are not authorized to perform overrides. These 3 attendants performed 1,095 overrides during the year. 		

Appendix A: Summary of Fuel Cost and Quantity For Calendar Year 2019

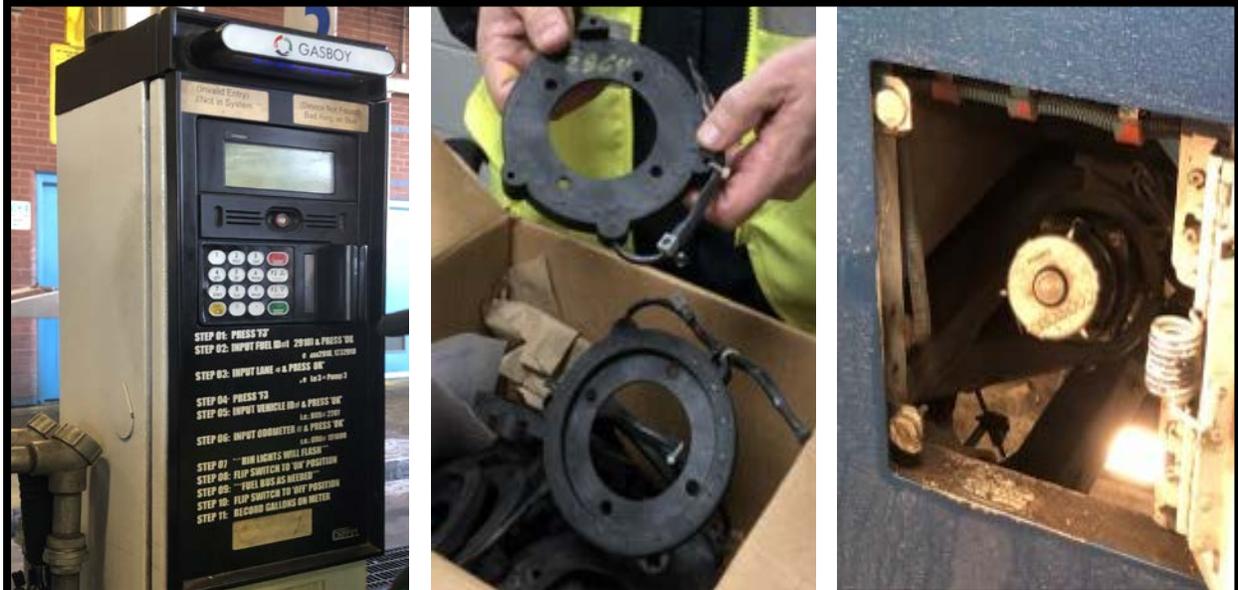
Fuel Cost and Quantity Calendar Year 2019		
Fuel Type	Cost	Quantity
Diesel	\$ 12,553,607	5,706,081
Gas	\$ 993,358	426,184
Red-Dye Diesel	\$ 488,385	No Data
Total:	\$ 14,035,351	6,132,265
*Note: One Paratransit location was excluded from the quantity because they do not have Gasboy installed.		

Appendix B: Flowchart of Gasboy Fuel Dispensing Process



Appendix C – Pictures of Gasboy Equipment

The following pictures show a Gasboy pedestal and RFID rings:



The fueler enters their ID number and mileage reading from the hubodometer to begin fueling. The other 8 fields are automatically populated. Once the correct information is input, the dispenser can begin fueling and performing other maintenance on the vehicle. The "rings" are RFID (Radio-Frequency Identification) devices that identify each unique large revenue vehicle. Smaller vehicles use a fuel cube instead of a ring.