



August 14, 2008

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VICE PRESIDENT, SOUTHWEST AREA

SUBJECT: Audit Report – Vehicle Maintenance Facilities – Scheduled
Maintenance Service in the Southwest Area
(Report Number DR-AR-08-006)

This report presents the results of our self-initiated audit, Vehicle Maintenance Facilities (VMF) – Scheduled Maintenance Service in the Southwest Area (Project Number 06XG031DR000). The overall objectives were to assess whether the Southwest Area accomplished all required scheduled maintenance and whether they integrated both VMFs and local commercial resources for optimum efficiency. Click [here](#) to go to Appendix A for additional information about this audit.

Conclusion

The Southwest Area did not complete scheduled preventive maintenance (SPM)¹ on all vehicles and did not always integrate both VMF and local commercial vendor resources for optimum use of available resources. As a result, the U.S. Postal Service's vulnerability to vehicle breakdowns and accidents could increase. In addition, better optimizing its resources could save the Southwest Area an estimated \$34 million over 10 years.

Scheduled Maintenance Performance

VMF units and commercial vendors completed an average of 79 percent of the SPMs, leaving the remaining 21 percent incomplete.² Four units completed all of the SPMs, while the other six completed between 58 percent and 91 percent of the required SPMs.

Management stated that a shortage of assigned maintenance technicians contributed to these conditions. While some locations required additional staff, our analysis did not support an overall need for additional maintenance technicians. We believe several additional issues caused these conditions.

¹ An SPM usually includes a preventive maintenance inspection and any repairs needed to maintain the vehicle or meet safety and reliability standards. See Appendix H for other terms used in this report.

² In fiscal year (FY) 2007, approximately 27,604 SPMs were required in the 10 units we reviewed in the Southwest Area.

- An inadequate process for VMF units to manage available maintenance and repair resources.
- The practices of changing vehicle status from “maintenance not performed” (also called “maintenance in arrears”) to “maintenance performed” by performing maintenance for only 1/10 of 1 hour (6 minutes), or adjusting the SPM schedule.³
- Vehicle Post Offices (VPO) were often reluctant to release a vehicle for an SPM because the VMF could not provide them with a reserve vehicle.⁴
- District and area officials did not conduct sufficient oversight to ensure completion of all SPMs.

Without completing all required scheduled maintenance and repairs, the Postal Service’s vulnerability to vehicle breakdowns could increase, creating mail delays and service problems. Further, the number of vehicle accidents could increase, which would raise costs and affect the well-being of employees and the public. Since the Postal Service does not plan to begin replacing its current fleet of Long Life Vehicles (vehicles that are more than 20 years old) until 2018, we believe it is critical that these vehicles receive SPMs in a timely manner. Click [here](#) to go to Appendix B for additional information about this topic.

We recommend the Vice President, Southwest Area, direct district managers to:

1. Assess vehicle maintenance technician positions at individual vehicle maintenance facilities to ensure sufficient staff is available for maintenance service.
2. Monitor and track key maintenance activities to ensure timely completion of all required scheduled maintenance and repairs.
3. Require vehicle maintenance facility officials to immediately conduct all maintenance in arrears and properly record vehicle status if maintenance was not conducted.
4. Discontinue the practice of performing maintenance for 1/10 of 1 hour and adjusting the vehicle maintenance schedule to appear to eliminate situations where maintenance was not performed.
5. Assess the reserve vehicle requirements of individual vehicle maintenance facilities and allocate or reallocate resources, as necessary.

³ Performing maintenance for 6 minutes and adjusting the SPM schedule are practices used to avoid reporting vehicles that did not have all required SPMs accomplished at the end of the fiscal year.

⁴ Reserve vehicles are used to replace vehicles until SPM is completed.

6. Monitor and review vehicle maintenance facilities' maintenance operations and performance, according to guidance in the Model Vehicle Maintenance Facility Performance Review.

Optimum Use of Resources

The Southwest Area did not always optimize its resources to ensure that maintenance and repair funds were expended in the most efficient and cost-effective manner. Specifically, maintenance officials often used local commercial vendors (LCV) for vehicle maintenance and repairs when using VMF resources would have been more efficient and economical. Likewise, VMF resources were often used when LCVs would have been more efficient and economical. Additionally, VMF officials used maintenance employees to shuttle vehicles between facilities for maintenance and repairs when more economical means existed.

The following factors contributed to these conditions. Although VMF units had a vehicle maintenance plan, it did not include provisions for all required SPM and repairs for all vehicles. Specifically, the vehicle maintenance plan did not:

- Consider the optimal combination of VMF resources and LCVs for performing scheduled maintenance and repairs.
- Include an evaluation of the cost-effectiveness of using LCVs instead of VMF resources to shuttle vehicles between facilities for maintenance and repairs.

In addition, area officials' oversight was not effective in managing vehicle maintenance programs because they did not have sufficient performance data. We also found the vehicle maintenance organizational structure was not conducive to effective program management.⁵

As a result, the Southwest Area expended more resources than necessary to complete vehicle maintenance and repairs. By optimizing its resources, the Southwest Area can better manage maintenance technician requirements and reduce operating costs by about \$3.4 million annually, or approximately \$34,522,159 projected over 10 years. Click [here](#) to go to Appendix C for additional information.

⁵ This issue requires action by Postal Service Headquarters and will be addressed in the national capping report.

We recommend the Vice President, Southwest Area:

7. Direct district managers to work with vehicle maintenance facility officials to modify the annual vehicle maintenance plan to provide for all scheduled vehicle maintenance to better manage and improve efficiency. The plan should:
 - Make optimal use of both vehicle maintenance facilities and local commercial resources for repairing and maintaining vehicles based on the vehicles' geographical location.
 - Make optimal use of the Postal Service's national vehicle shuttle agreement or other local commercial shuttle services, when cost-effective, for transporting vehicles to and from maintenance facilities.
8. Require the Area Vehicle Maintenance Program Analyst to modify the existing vehicle maintenance program to provide the necessary data that would help ensure sufficient oversight of the scheduled maintenance and repair program at vehicle maintenance facilities, according to Handbook PO-701, *Fleet Management*.

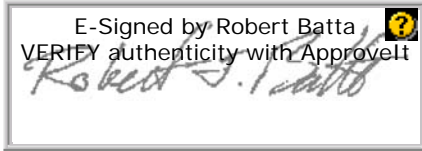
Management's Comments

Management agreed with our findings and recommendations. Management initially expressed concerns about the accuracy of the monetary impact we identified, which was based on 2.5 hours as the minimum requirement for a full SPM. However, after subsequent discussion, management stated they agreed, in principle, with the potential monetary impact. Southwest Area management also issued district managers a letter of instruction with a 30-day timeframe to provide an action plan and a date when they will address each of the requirements in the action plan. We have included management's comments, in their entirety, Click [here](#) to go to Appendix I and [here](#) for Appendix J.

Evaluation of Management's Comments

The U.S. Postal Service Office of Inspector General (OIG) considers management's comments responsive to the recommendations and management's corrective actions should resolve the issues identified in the report.

We appreciate the cooperation and courtesies provided by your staff. If you have any questions or need additional information, please contact Rita Oliver, Director, Delivery, or me at (703) 248-2100.



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Attachments

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APPENDIX A: ADDITIONAL INFORMATION

BACKGROUND

The Postal Service has invested more than \$3 billion in vehicle assets for the purpose of transporting and delivering the mail. The vehicle inventory consists of 219,522 delivery, transport, and administrative vehicles, of which delivery and collection vehicles (see the examples in Figure 1) account for 195,211 or about 89 percent of the total fleet. The Postal Service acquired these vehicles between 1987 and 1994 and planned to maintain them for 24 years. About 7,700 of these vehicles purchased in 1987 are approaching the end of their useful life. However, the Postal Service recently stated that capital constraints now dictate that many of these vehicles must stay in service until 2018 — 7 years more than the planned lifespan.

Figure 1.
Delivery and Collection Vehicles in VMFs for SPM



Source: Postal Service

Management established 190 main and 131 auxiliary VMFs to maintain these assets in a technically reliable, safe, clean, and neat condition for efficient mail transportation. Vehicle maintenance includes selecting and training maintenance technicians; providing garages, tools, and equipment; performing repairs; and monitoring and maintaining preventive maintenance standards. The geographic location of VMFs and auxiliary VMFs varies in each area as needed to support vehicle maintenance and reduce transportation costs. Auxiliary VMFs were established for situations where vehicle maintenance requirements exceed VMF resources or when shuttle time or geographical distances warrant the use of an auxiliary VMF.

Area officials are responsible for validating staffing requirements for vehicle-related positions and ensuring an adequate scheduled maintenance program. Vehicle maintenance managers have overall responsibility for oversight of all maintenance and repair services performed at VMF units, as well as any work contracted to commercial vendors. Although the VMF manager has overall responsibility for vehicle maintenance, vehicles are usually assigned to VPO. VPOs can be post offices, branches, stations, associated offices, or other

delivery and support facilities. Post office officials at VPOs can also contract with LCVs for maintenance and repair services, but they are required to document the repairs and obtain the VMF manager’s approval for repairs and services costing more than \$250.

The Postal Service developed Handbook PO-701, *Fleet Management*, to assist operating personnel in maintaining the vehicle fleet in the most economical manner possible. The handbook requires a maintenance plan that provides for regular examination and service of Postal Service-owned vehicles. VMF managers must prepare a vehicle maintenance plan designating where and when each vehicle will receive scheduled maintenance. The handbook also emphasizes that preventive or scheduled maintenance is preferable to reactive or unscheduled maintenance. (Click [here](#) to go to [Appendix F](#), “Scheduled Maintenance Process,” for a flowchart.)

The Postal Service also established a Model Vehicle Maintenance Facility Performance Review program. The review program is an integral part of VMF operations, and is a key tool for determining the efficiency of a unit at a given time and identifying areas that need corrective action. Districts must ensure that self-reviews are performed quarterly in all VMFs. A VMF must achieve a score of 85 or more to be certified. The area must certify or recertify each unit at least every 3 years.

The Postal Service uses the Vehicle Management Accounting System (VMAS) to code and track costs. VMAS is a computer-based support system designed to collect, process, store, present, and communicate vehicle maintenance data. The table below shows VMF expenses, including commercial vendors’ expenses, for FYs 2006 and 2007.

Table 1. Maintenance Expenditures for FYs 2006 and 2007 by Area

Postal Service Area of Operation	VMF and Commercial Expenditures					
	VMF Expenses in FY 2006	Commercial Vendor Expenses in FY 2006	Total Expenses in FY 2006	Commercial Vendor Expenses in FY 2007	VMF Expenses in FY 2007	Total Expenses in FY 2007
Southeast	\$50,027,167	\$11,107,056	\$61,134,223	\$13,867,484	\$52,648,111	\$66,515,595
Great Lakes	44,199,932	14,746,580	58,946,512	15,152,866	46,536,525	61,689,391
Eastern	51,149,527	13,219,956	64,369,483	12,213,149	45,085,152	57,298,301
Western	37,111,558	8,664,149	45,775,707	10,382,055	45,808,493	56,190,548
Pacific	44,995,543	7,309,597	52,305,140	9,105,547	42,819,217	51,924,764
Northeast	36,350,523	10,547,210	46,897,733	10,821,346	37,860,317	48,681,663
New York Metro	34,895,166	11,496,123	46,391,289	12,433,942	36,814,803	49,248,745
Southwest	35,819,600	5,934,289	41,753,889	7,194,386	36,503,347	43,697,733
Capital Metro	22,846,137	6,045,786	28,891,923	7,643,667	32,808,458	40,452,125
Total	\$357,395,153	\$89,070,746	\$446,465,899	\$98,814,442	\$376,884,423	\$475,698,865

Source: Postal Service Category Management Center

OBJECTIVES, SCOPE, AND METHODOLOGY

The objectives of this audit were to assess whether the Southwest Area accomplished all required scheduled maintenance and whether they integrated both VMFs and local commercial resources for optimum efficiency.

To accomplish the objectives, we randomly selected and reviewed vehicle service files from the 10 VMFs in the Southwest Area. We documented the scheduled maintenance and number of SPMs required and whether they were conducted in a timely manner, and reviewed work order files to document whether SPMs performed were considered actual SPMs, based on the time required for maintenance. We reviewed the Web-Enabled Enterprise Information System (WebEIS) to analyze vehicles in “maintenance in arrears” status, and compared the number of SPMs completed to actual maintenance records. We also obtained and reviewed Web-based Complement Information System (WebCOINS) data on the complement of vehicle maintenance technicians.

We obtained a random sample of 10 of the Southwest Area’s auxiliary VMFs from all districts except the Louisiana District⁶ (Click [here](#) to go to [Appendix E](#)), and reviewed VMAS data for scheduled maintenance services for all of FY 2006 and updated our results with FY 2007 data. We identified the number of Preventive Maintenance Inspection (PMIs)⁷ to be performed at each auxiliary VMF, the VPOs where the vehicles were located, and the distance from the VMF, and also documented the number of vehicle maintenance technicians assigned to each VMF.

We identified each VMF’s expenditures and LCVs’ expenditures for scheduled maintenance. In discussions with VMF managers and review of maintenance records, we documented the number of SPMs and SPM inspections required for each location on a yearly basis. Using the VMAS vehicle work order history, we analyzed the average time to perform an SPM at the top three performing units in our sample. We also identified a best practice unit and developed a matrix of key performance characteristics to compare with performance at other VMFs.

We developed an optimization model that used the above operational data to establish a baseline, standards, key characteristics, shuttle usage and cost. Using this data, along with other assumptions and conclusions, we established an optimum operating efficiency for each VMF. Based on the above analyses, assumptions, and constraints, we estimated that the Southwest Area could increase overall VMF efficiency, and we projected the cost savings for the Southwest Area’s universe of 15 VMFs. Click [here](#) to go to [Appendix D](#),

⁶ The Louisiana District was excluded from our sample because area officials stated the district was not stable after Hurricane Katrina.

⁷ A PMI is that portion of required scheduled maintenance a vehicle must receive to determine if mechanical and safety systems are functioning properly.

“Calculation of Cost Savings,” for the model and assumptions we used to compute monetary benefits.

We conducted this performance audit from September 2006 through August 2008 in accordance with generally accepted government auditing standards and included tests of internal controls that were considered necessary under the circumstances. Those 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 objectives. We believe the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We relied on data from VMAS and WebEIS. We did not audit these systems, but performed a limited review of data integrity to support our reliance on the data. We discussed our observations and conclusions with management officials on June 9, 2008, and included their comments where appropriate.

PRIOR AUDIT COVERAGE

As shown in the table below, the OIG issued two reports related to our objective.

Report Title	Report Number	Final Report Date	Monetary Impact
<i>Maintenance and Repair Payments to Commercial Vendors Using Postal Service Form 8230, Authorization for Payment</i>	DR-MA-07-005	September 21, 2007	\$1,571,517
<i>Management of Delivery Vehicle Utilization</i>	DR-AR-06-005	June 14, 2006	\$22,796,487

The 2007 audit concluded that using the Postal Service (PS) Form 8230, Authorization for Payment, process to pay commercial vendors for maintenance and repair services was not cost-effective and did not include controls to reconcile payments and ensure repair costs were reasonable. The situation existed primarily because management officials did not always realize the cost and time impact of using PS Form 8230, and therefore, did not monitor its use. As a result, the Postal Service will spend at least \$1,269,718 more than necessary; not have sufficient assurance that vehicles were appropriately repaired; and not receive revenues of more than \$301,799 from Voyager Card rebates. We recommended district management discontinue the use of the PS Form 8230 to pay commercial vendors for maintenance and repair, with some exceptions. Management agreed with our findings, recommendations, and monetary impact.

The 2006 audit concluded that Postal Service officials made significant strides in reducing costs associated with delivery vehicle expenditures over the previous 3 years. However, delivery management officials could further improve the use of vehicles that support delivery operations. Postal Service officials maintained excess and underused delivery vehicles, and they leased delivery vehicles from employees and commercial vendors when Postal Service-owned vehicles were available. Additionally, delivery officials did not monitor the reasonableness of payments or the need for contracts with employees for use of their personal vehicles. These conditions existed primarily due to management not consistently following guidance and not having visibility and control of excess Postal Service-owned delivery vehicles within their areas. Additional controls over payments to employees could also reduce the potential for mismanagement or uneconomical payments. Management agreed with our findings, recommendations, and monetary impact.

APPENDIX B: SCHEDULED MAINTENANCE PERFORMANCE

The vehicle maintenance process did not consistently ensure that all vehicles receive required and timely SPM. Although four of the 10 VMF units completed all of the required SPMs, the other six completed between 58 percent and 91 percent of the required SPMs. (See Table 2.)

Table 2. Scheduled Preventive Maintenance Performed in FY 2007

VMF Location	Required in FY 2007	Performed	Percentage Performed
Albuquerque	2,352	1,991	85
Austin	1,900	1,900	100
Corpus Christi	1,502	1,502	100
El Paso	918	835	91
Houston	9,688	5,620	58
Little Rock	2,270	1,624	72
Oklahoma City	2,813	2,376	85
San Antonio	3,709	3,709	100
Tulsa	1,684	1,385	82
Waco	768	768	100
Total/Average	27,604	21,710	79

Source: VMAS and OIG optimization model

This condition was caused by several factors. Postal Service VMF management told us there was insufficient staff to perform all the required SPMs, although our analysis showed that sufficient maintenance staff was generally available. This difference in staffing requirements occurred, in part, because management did not consider that LCVs should service more than 1,700 of the 12,000 assigned vehicles. In addition, the Postal Service does not have a formal policy for staffing VMF maintenance technician positions, resulting in some VMFs using the “rule of thumb” ratio or the SPM-per-technician ratio to determine staffing requirements. The “rule of thumb” method showed that a shortage existed; however, the SPM-per technician ratio and the OIG’s model did not support the need for additional staff.⁸ (See [Appendix G](#).)

Furthermore, several other factors contributed to vehicles not receiving proper maintenance.

- o “Maintenance in Arrears” and Schedule Adjustment. The Southwest Area VMFs sometimes changed a vehicle’s status from “maintenance not performed” (also called “maintenance in arrears”)⁹ to “maintenance

⁸ The “rule of thumb” ratio showed a need for 12 additional positions, while the SPM-per-technician scenario showed an excess of five positions.

⁹ The practice of performing maintenance for 6 minutes and adjusting the SPM schedule is used to avoid reporting vehicles that did not have all required SPMs accomplished at the end of the fiscal year, which is known as maintenance in arrears.

performed.” For example, in September 2007, documentation showed that 2,862 vehicles had maintenance in arrears, but only 2,123 vehicles were reported in that status as of September 30, 2007.¹⁰ Thus, 835 vehicles were removed from the list by performing maintenance for 1/10 of 1 hour or adjusting the maintenance schedule.¹¹ Consequently, these vehicles did not receive proper scheduled maintenance.

- Maintenance Reserve Vehicles. SPMs were not performed because of an insufficient number of reserve vehicles.¹² VPOs were often reluctant to release a vehicle for SPM because the VMF could not provide them with a substitute or reserve vehicle. The 10 VMF units in our sample had 396 reserve vehicles assigned.¹³ The guidance authorizes a 3 percent reserve for vehicles assigned to city delivery routes and a 4 percent reserve for rural routes. Our analysis showed that four of the 10 VMFs had shortages, one had the right number, and the other five had overages. Although the analysis did not identify an overall overage or shortage of reserve vehicles, it highlighted the need for better allocation of vehicles. For example, San Antonio had 11 excess reserve vehicles, while Houston had a shortage of 24 reserve vehicles. (See Table 3.)

Table 3. Estimated Reserve Vehicles Available

VMF Location	Number of Vehicles per VMF	Percentage of Reserves Vehicles	Reserve Vehicles Assigned	Estimated Rural Route Reserves (4%)	Estimated City Route Reserves (3%)	Estimated Reserve Requirements	Overage or Shortage
Albuquerque	1,105	4.00	44	13	23	36	8
Austin	883	3.30	29	11	19	29	0
Corpus Christi	707	3.60	14	8	15	23	-9
El Paso	395	2.90	11	5	8	13	-2
Houston	4,307	2.90	118	52	90	142	-24
Little Rock	743	3.20	32	9	16	25	7
Oklahoma City	1,311	3.70	46	16	28	43	3
San Antonio	1,356	4.20	56	16	28	45	11
Tulsa	853	4.30	35	10	18	28	7
Waco	351	3.20	11	4	7	12	-1
Totals	12,011	3.53	396	144	252	396	0

Source: VMAS and VMF managers

¹⁰ The “vehicles in arrears” status is a performance measure for VMFs.

¹¹ Adjusting the SPM schedule will remove all vehicles from the list of vehicles in arrears. This issue will be addressed in a national capping report to Postal Service Headquarters.

¹² VMFs provide reserve vehicles to VPOs as a replacement while an assigned vehicle is undergoing scheduled maintenance.

¹³ The OIG previously reported on maintenance reserve vehicles in *Management of Delivery Vehicle Utilization* (Report Number DR-AR-06-005, dated June 14, 2006).

- Review and Monitoring of Maintenance Performance. Except for one location,¹⁴ area and district officials did not conduct Model VMF Performance Reviews at VMFs, as required by Handbook PO-701. Additionally, because the process was insufficient, VMF managers did not consistently review the maintenance status of vehicles assigned to VPOs, as required by Handbook PO-701. These reviews would have helped to ensure vehicles received the proper maintenance.

Without completing all required scheduled maintenance and repairs, the Postal Service's vulnerability to vehicle breakdowns may increase, creating mail delays and service problems. Further, the number of vehicle accidents could increase, which would raise costs and affect the well-being of employees and the public. Since the Postal Service does not plan to begin replacing its current fleet of Long Life Vehicles (vehicles that are more than 20 years old) until 2018, we believe it is critical that these vehicles receive the required maintenance.

¹⁴ Management conducted a Model VMF Performance Review at the Oklahoma City VMF because of concerns about mismanagement by the VMF manager.

APPENDIX C: OPTIMUM USE OF RESOURCES

The Southwest Area did not always optimize its resources to ensure that maintenance and repair funds were expended in the most efficient and cost-effective manner. Specifically, maintenance officials often used LCVs for vehicle maintenance and repairs when using VMF resources would have been more efficient and economical. Likewise, VMF resources were often used when LCVs would have been more efficient and economical. Additionally, VMF officials used maintenance employees to shuttle vehicles from the VPO to the VMF when more economical means existed.

Several factors contributed to these conditions.

- Optimum Use of VMF and Commercial Resources. The vehicle maintenance plan did not consider an optimum combination of both VMF and commercial resources.¹⁵ Generally, it is more cost-effective¹⁶ for the VMF to perform SPMs on vehicles within 50 miles of the VPO. However, a local commercial vendor should perform SPMs on vehicles when the VPO is more than 50 miles from the nearest VMF. We determined that 1,974 SPMs should have been performed at the opposite site — either the VMF or the commercial facility. (See Table 4.)

Table 4. VMF and Local Commercial Vendor Resources

VMF Location	SPMs Performed by		Total SPMs Performed	SPMs Performed Inefficiently by		Total Inefficiently Performed SPMs
	VMF	Local Vendors		VMF	Local Vendors	
Albuquerque	1,109	723	1,832	1	133	134
Austin	1,903	105	2,008	0	46	46
Corpus Christi	1,316	269	1,585	334	44	378
El Paso	835	0	835	0	0	0
Houston	5,249	145	5,394	0	146	146
Little Rock	1,315	239	1,554	50	57	107
Oklahoma City	1,625	751	2,376	11	573	584
San Antonio	3,448	443	3,891	25	73	98
Tulsa	669	689	1,358	15	465	480
Waco	782	1	783	0	1	1
Total	18,251	3,365	21,616	436	1,538	1,974

Source: VMAS data and OIG optimization model.

¹⁵ The Postal Service VMAS system does not track the number of SPMs accomplished. The OIG's efficiency and optimization model estimated the number completed by analyzing all work orders assigned to (scheduled maintenance), and with some adjustment considered all work over 2.5 hours as an SPM.

¹⁶ Cost-effectiveness is based on the overhead costs to transport vehicles between the VMF and the VPO using a vehicle maintenance technician or other VMF personnel to shuttle the vehicle.

- Vehicle Shuttling. In most cases, we found that the Postal Service’s national vehicle shuttle agreement or local commercial shuttling services were more cost-effective than using VMF maintenance technicians. The Southwest Area used more than 16,800 workhours for vehicle maintenance technicians¹⁷ to shuttle vehicles rather than perform maintenance. The shuttle hours related to SPM were equivalent to 10 vehicle maintenance technician positions at a cost of \$725,000.¹⁸ (See Table 5.)

Table 5. Vehicle Maintenance Technician Hours Used for Shuttling

VMF Location	Number of Vehicle Maintenance Technicians Assigned	Estimated Maintenance Hours Available (Scheduled Maintenance only)	Total Shuttle Hours Used in FY 2007	Percentage of Direct Maintenance Hours Used for Shuttling	Shuttle Hours Used for Scheduled Maintenance	Equivalent Maintenance Technician Positions	Cost of Shuttle Hours Used by Maintenance Technicians
Albuquerque	14	19,645	4,007.80	20	306	0.17	\$13,170.24
Austin	16	22,451	1,656.50	7	235	0.13	10,114.40
Corpus Christi	12	16,838	4,016.50	24	2,055	1.17	88,425.68
El Paso	9	12,629	2,060.00	16	784	0.44	33,743.36
Houston	77	108,046	21,128.00	20	8,012	4.56	344,836.48
Little Rock	16	22,451	2,707.30	12	1,142	0.65	49,164.59
Oklahoma City	23	32,274	5,298.10	16	2,066	1.17	88,907.73
San Antonio	28	39,290	3,823.10	10	507	0.28	21,812.67
Tulsa	15	21,048	3,632.10	17	921	0.52	39,626.93
Waco	7	9,822	1,382.00	14	826	0.47	35,533.82
	217	304,494	49,711.40	16	16,854	10	\$725,335.90

Source: VMAS and OIG Optimization Model

- Area Oversight. The Southwest Area’s program did not validate staffing requirements or ensure a complete preventive maintenance program.¹⁹ This occurred because existing data were insufficient and sometimes unreliable. If sufficient data existed, Southwest Area management would have understood that 45 vacant staff positions requested by the 10 VMFs were not necessary. If data were more reliable, then vehicles would receive the requisite maintenance.²⁰

¹⁷ The vehicle maintenance plan did not include an evaluation of the cost-effectiveness of using LCV instead of VMF resources for shuttling vehicles between facilities.

¹⁸ This estimate of equivalent technician positions applies only to the hours used for shuttling. It does not relate to any actual reductions in this report.

¹⁹ Handbook PO 701, *Fleet Management*, requires a complete preventive maintenance program.

²⁰ For example, for FYs 2006 and 2007, two VMFs in our sample completed less than 70 percent of their required SPMs, although maintenance status reports did not show any vehicles requiring maintenance.

In addition, the Postal Service's organizational structure²¹ was not conducive to effective management of vehicle maintenance. Area Vehicle Maintenance Program Analysts (VMPA) are responsible for working directly with VMF officials to manage the vehicle maintenance program. However, the VMPA is aligned under the plant maintenance manager, who has no direct line of authority to district vehicle maintenance functions or individual VMF operations.

A comprehensive vehicle maintenance plan addressing the optimum use of both commercial and VMF resources will increase efficiency. Further, increased efficiency, coupled with eliminating or reducing the use of VMF resources for shuttling, will lower overall VMF operating costs by an average of \$3.4 million annually. These efficiencies, when projected for the 15 VMFs in the Southwest Area over a 10-year period, can save \$34,522,159. (See [Appendix D](#).)

²¹ This issue requires action by Postal Service Headquarters and will be addressed in a national capping report.

APPENDIX D: OIG CALCULATION OF COST SAVINGS

The OIG identified \$34,522,159 in funds put to better use over the next 10 years for the Southwest Area’s 15 VMFs.

Savings in Dollars

VMF Location	Annual Savings	Savings Over 10 Years
Albuquerque ²²	\$145,868	\$1,458,683
Austin	\$195,463	\$1,954,633
Corpus Christi	\$123,496	\$1,234,961
El Paso	\$78,671	\$786,714
Houston	\$1,023,039	\$10,230,392
Little Rock	\$192,146	\$1,921,456
Oklahoma City	\$150,000	\$1,500,000
San Antonio	\$259,154	\$2,591,541
Tulsa	\$102,997	\$1,029,974
Waco	\$30,642	\$306,419
Totals	\$2,301,477	\$23,014,773
<u>Projected Savings Over 15 VMFs in Southwest Area</u>		\$34,522,159

Source: OIG Optimization Model

We calculated the savings based on the following methodology and assumptions.

- Each VMF has a list of VPOs for which it is responsible for vehicle maintenance. Each VPO has a number of Postal Service vehicles that require regular SPM. The number of SPMs that a vehicle requires is determined at the beginning of the year based on the demands that the assigned route places on the vehicle. All SPMs for a given year must be performed on each vehicle; however, the VMF may delegate some of this workload to commercial vendors that are near the VPOs. We refer to this contract labor as LCVs.
- The purpose of this audit was to determine the optimal use of the SPMs to be performed by the VMFs’ LCVs. We took into consideration the mechanic labor costs and all relevant shuttling costs. As with the SPMs, VMFs may contract out shuttling. The Postal Service has a national vehicle shuttle agreement; the OIG

²² For the Albuquerque VMF, the OIG optimization model calculated savings in efficiency and shuttling of \$74,316 and \$110,030 respectively, for total savings of \$184,346. The total savings was multiplied by a discount factor of 0.791275 for an annual estimated savings of \$145,868 and a 10-year savings of \$1,458,683. The same formula was used for the nine other VMFs and projected to the 15 VMFs in the Southwest Area.

used that rate in the analysis. However, VMFs can use a less expensive local shuttle contractor if one can be identified.

- We developed the optimization model to find a least-cost solution based on performing all required SPMs. We used the VMFs' FY 2007 operational data to establish a baseline, assuming that any SPMs not currently performed by VMFs are completed by LCVs.²³ We restricted the scope of this audit to maintenance technicians' time spent performing scheduled maintenance and shuttling activities. This analysis draws no conclusions regarding the time dedicated to other activities or how maintenance technicians used the remainder of their time.
- The Postal Service VMAS system does not track the number of SPMs accomplished for each vehicle. The OIG's efficiency and optimization model estimated the number of SPMs completed by analyzing all work orders assigned to ██████ (scheduled maintenance), and with adjustments (i.e., new vehicles and commercial repairs) considered all work of at least 2.5 hours²⁴ as an SPM. We explained the process and confirmed/adjusted the number of SPMs required and completed with VMF managers during the audit or the out brief process.
- We optimized the VMFs' scheduled maintenance and shuttling time for each of the next 10 years, assuming that the Postal Service would reduce the labor contingent by 4.6 percent per year, the historical attrition rate.²⁵ This optimization gives the least-cost solution and specifies how the SPMs at each VPO should be distributed between the VMFs and the LCVs. The model shows which shuttling jobs should be done by both the VMFs and by contractors. The model analyzes all costs and hours (for SPMs at VMFs, SPMs at LCVs, VMF shuttling, and contract shuttling). The model also compares the baseline solution to the 10-year solution and specifies the number of SPMs that are currently being performed by VMFs that should be done by LCVs, and the reverse.
- In these optimizations, we assumed that each VMF would operate at a standard efficiency. We used the average of the top three Southwest Area's VMFs' average time per SPM as a standard for the time it takes to complete an SPM in that area. If a particular VMF performed better than this standard, we assumed that the VMF maintained its current efficiency.

²³ We obtained the current number of SPMs performed by VMFs and LCVs from VMAS databases located at the VMFs and transmitted to the mainframe computer at San Mateo Information Technology and Accounting Service Center. Because a VMF may not perform all its required SPMs, we assumed that LCVs would perform the remaining SPMs. In addition, in some cases, a VMF performed more SPMs than required at a VPO. We credited the VMFs with these additional SPMs and determined a comparable solution by reassigning this SPM to the closest location with a shortfall. We accomplished this in part by assuming that the baseline case kept the scheduled maintenance hours and shuttling hours constant at current levels.

²⁴ We used 2.5 hours because of the Postal Service's requirement for a "Type A and Type B" maintenance inspection prior to any repair work. These inspections require between 1.5 and 2.5 hours.

²⁵ The historical attrition rate for Southwest Area maintenance technicians was determined by averaging the past 6 years (2001 - 2007) of data obtained from the Enterprise Data Warehouse.

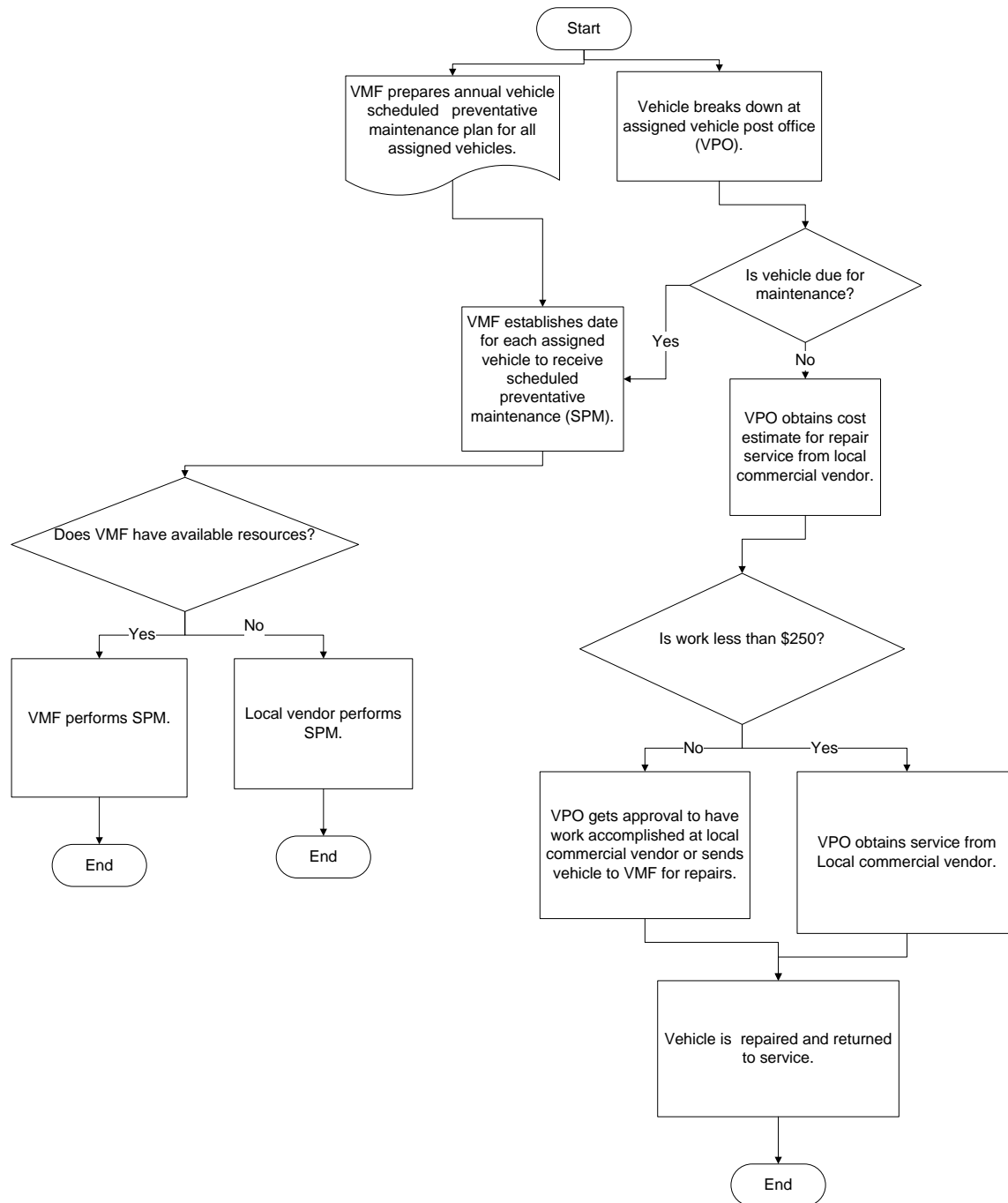
- From the baseline solution, we identified cost savings if the VMF was not efficiently using its shuttling time. We compared the VMF's total shuttling time to the aggregate time that should be needed to perform all of the VMF's shuttling, assuming that two vehicles were transported on each trip. The cost of any excess time was time that could have been saved, although the actual amount of time that could be saved was likely to be higher because the VMFs probably did not perform all of their own shuttling.
- For our model, we made certain assumptions regarding the minimum and maximum levels of overtime. The minimum overtime is 2 hours per week for 90 percent of the maintenance technicians. The maximum overtime is 8 hours per week for 90 percent of the technicians and an additional 8 hours per week for 50 percent of the technicians. We assumed that the current level of overtime was 90 percent for the technicians – an additional 8 hours per week. The number of hours of straight time worked for each mechanic per year is 1,754.²⁶ At some locations, where additional SPMs were required or LCVs were not used to the extent possible, the VMF managers helped us identify additional LCVs that could perform the SPMs.
- Based on the above analyses, assumptions, and constraints, we estimated that the Southwest Area could increase overall VMF efficiency and reduce costs by using local commercial resources for shuttling and SPM requirements when appropriate. This increased efficiency, when projected over the Southwest Area's universe of 15 VMFs, will reduce costs by approximately \$3.4 million annually, or over \$34 million over a 10-year period. These savings include an overall reduction of two vehicle maintenance technician positions through attrition.

²⁶ Source: Finance Memorandum dated March 6, 2006, "Workhour Rates for Fiscal Years 2005 - 2007."

**APPENDIX E: SELECTED DISTRICTS AND
VEHICLE MAINTENANCE FACILITIES**

District	VMF
Arkansas	Little Rock
Oklahoma	Oklahoma City
	Tulsa
Houston	Houston
Rio Grande	San Antonio
	Corpus Christi
	Austin
	El Paso
	Waco
Albuquerque	Albuquerque

APPENDIX F: SCHEDULED MAINTENANCE PROCESS²⁷



²⁷Source: Postal Service Handbook PO-701, *Fleet Management*, March 1991.

APPENDIX G: OIG STAFFING ANALYSIS

Estimated VMF Staffing Requirements Based on “Rule of Thumb” Ratio

VMF Location	Current Operations – VMFs Perform All Maintenance				Optimum VMF Operations – Local Vendor Included			
	Currently Assigned Vehicles	Technicians Assigned	Technicians Required (Average of 45)	Overage or Shortage	Vendor-Serviced Vehicles	Net Vehicles Serviced by VMFs	Technicians Needed by “Rule of Thumb”	Overage or Shortage ²⁸
Albuquerque	1,105	14	25	-11	493	612	14	0
Austin	883	16	20	-4	10	873	19	-3
Corpus Christi	707	12	16	-4	323	384	9	3
El Paso	395	9	9	0	16	379	8	1
Houston	4,307	77	96	-19	0	4,307	96	-19
Little Rock	743	16	17	-1	507	236	5	10
Oklahoma City	1,311	23	29	-6	57	1,254	28	-5
San Antonio	1,356	28	30	-2	56	1,300	29	-1
Tulsa	853	15	19	-4	272	581	13	2
Waco	351	7	8	-1	10	341	8	-1
Total	12,011	217	269	-50	1,744	10,267	228	-12

Source: VMF management, VMAS data, and OIG analysis.

Estimated VMF Staffing Requirements Based on Scheduled Preventive Maintenance Actions per Technician

VMF Location	Number of Required SPMs	SPMs to be Performed by Local Commercial Vendor	Net SPMs Required to be Performed by VMF	Number of Vehicle Maintenance Technicians Assigned to VMFs	Number of Technicians Required - 110 SPMs per Technician	Estimated Overage or Shortage
Albuquerque	2,352	985	1,367	14	12	2
Austin	1,900	19	1,881	16	17	-1
Corpus Christi	1,502	645	857	12	8	4
El Paso	918	31	887	9	8	1
Houston	9,688	0	9,688	77	88	-11
Little Rock	2,270	1,013	1,257	16	11	5
Oklahoma City	2,813	114	2,699	23	25	-2
San Antonio	3,025	112	2,913	28	26	2
Tulsa	1,684	544	1,140	15	10	5
Waco	768	20	748	7	7	0
Total	26,920	3,483	23,437	217	212	5

Source: VMAS, VMF management, and OIG analysis.

²⁸ Overages and shortages in these tables are designed to show the need for a standardized staffing matrix. The number of staff positions does not relate to the numbers based on increased efficiency.

APPENDIX H: ACRONYMS/ABBREVIATIONS OF TERMS USED IN REPORT

FY	Fiscal Year
LCV	Local Commercial Vendors
OIG	Office of Inspector General
PMI	Preventive Maintenance Inspection
SPM	Scheduled Preventive Maintenance
VMF	Vehicle Maintenance Facility
VMAS	Vehicle Management Accounting System
VMPA	Vehicle Maintenance Program Analyst
VPO	Vehicle Post Office
WebCOINS	Web-based Complement Information System
WebEIS	Web-Enabled Enterprise Information System

APPENDIX I: MANAGEMENT'S COMMENTS

ELLIS A. BURGOYNE
VICE PRESIDENT, SOUTHWEST AREA OPERATIONS



July 22, 2008

LUCINE WILLIS
DIRECTOR, AUDIT OPERATIONS
OFFICE OF INSPECTOR GENERAL
UNITED STATES POSTAL SERVICE

SUBJECT: Draft Audit Report – Vehicle Maintenance Facilities – Scheduled Maintenance Service in the Southwest Area (Report # DR-AR-08-DRAFT)

We have reviewed the above referenced report, including the eight recommendations to ensure compliance and completion of all scheduled maintenance and to better optimize VMF resources. We are concerned about the accuracy of the stated monetary impact, due to the exclusion of [REDACTED] work orders with less than 2.5 hours, not being an SPM (Appendix C, page 13, Footnote 15) however, we are in concurrence with all of the findings and recommendations as follows:

RECOMMENDATION 1: The Vice-President, Southwest Area, direct district managers to assess vehicle maintenance technician positions at individual maintenance facilities to ensure sufficient staff is available for maintenance service.

RESPONSE: Management concurs that assessment of vehicle maintenance automotive technician positions (and all vehicle maintenance positions) are in the best interest of the Service; Southwest Area continues to assess said positions, however, seeks immediate relief and guidance from Vehicle Operations, Headquarters, in the form of a sanctioned VMF staffing matrix. As mentioned in the report (Appendix B; Footnote 8 and Appendix G; Footnote 28) a standardized staffing matrix is very much needed and has been repeatedly requested, via the Area Vehicle Maintenance Programs Analyst.

COURSE OF ACTION: The Vice President, Southwest Area, has generated a letter of instruction (attached), directing district managers to assess vehicle maintenance automotive technician positions, to better ensure sufficient staff availability for vehicle maintenance service.

RECOMMENDATION 2: The Vice-President, Southwest Area, direct district managers to monitor and track key maintenance activities to ensure completion of all required scheduled maintenance, repairs, and maintenance requirements are met in a timely manner.

RESPONSE: Management concurs; monitoring and tracking key maintenance activities will promote desired results of ensuring completion of all required

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scheduled maintenance, repairs, and maintenance requirements are met in a timely manner.

COURSE OF ACTION: District managers have been directed to monitor and track key maintenance activities to ensure completion of all required scheduled maintenance, repairs, and maintenance requirements are met in a timely manner. This action is incorporated into the letter of instruction detailed in "Course of Action" to Recommendation # 1.

RECOMMENDATION 3: The Vice-President, Southwest Area, direct district managers to require vehicle maintenance facility officials to immediately conduct all maintenance in arrears and properly record vehicle status if maintenance was not conducted.

RESPONSE: Management concurs; maintaining vehicle scheduled maintenance current preserves USPS vehicle assets, increases employee and public safety while minimizing liability exposure of the Service.

COURSE OF ACTION: District managers have been directed to require vehicle maintenance facility officials to begin immediately to aggressively and efficiently conduct all maintenance in arrears and to record vehicle status if maintenance was not performed. This action is incorporated into the letter of instruction detailed in "Course of Action" to Recommendation # 1.

RECOMMENDATION 4: The Vice-President, Southwest Area, direct district managers to discontinue the practice of performing maintenance for 1/10 of 1 hour and adjusting the vehicle maintenance schedule to appear to eliminate situations where maintenance was not performed.

RESPONSE: Management concurs; arbitrarily adjusting the vehicle maintenance schedule to "appear" productive is disingenuous and destroys integrity of vehicle maintenance data.

COURSE OF ACTION: District managers have been directed to instruct vehicle maintenance officials' to discontinue the practice of performing maintenance for 1/10 hour of 1 hour and adjusting the vehicle maintenance schedule to appear to eliminate situations where maintenance was not performed. This action is incorporated into the letter of instruction detailed in "Course of Action" to Recommendation # 1.

RECOMMENDATION 5: The Vice-President, Southwest Area, direct district managers to assess the reserve vehicle requirements of individual vehicle maintenance facilities and allocate or reallocate resources, as necessary.

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RESPONSE: Management concurs; maintenance reserve (MR) vehicle assets must be assessed and maintained at the authorized levels, (minimum 3% Light Delivery and 4% Rural Route).

COURSE OF ACTION: District managers have been directed to assess maintenance reserve requirements, to allocate, reallocate, as necessary, and maintain MR resources. This action is incorporated into the letter of instruction detailed in "Course of Action" to Recommendation # 1.

RECOMMENDATION 6: The Vice-President, Southwest Area, direct district managers to monitor and review vehicle maintenance facilities' maintenance operations and performance, according to guidance in the Model Vehicle Maintenance Facility Performance Review.

RESPONSE: District managers have been directed to monitor and review the maintenance operations and performance of vehicle maintenance facilities, per guidance in the Model Vehicle Maintenance Facility Performance Review.

COURSE OF ACTION: District managers have been directed to monitor and review vehicle maintenance facilities operations and performance utilizing the guidance of the Model Vehicle Maintenance Facility Performance Review. This action is incorporated into the letter of instruction detailed in "Course of Action" to Recommendation # 1.

RECOMMENDATION 7: The Vice-President, Southwest Area, direct district managers to work with vehicle maintenance facility officials to modify the annual vehicle maintenance plan to provide for all scheduled vehicle maintenance to better manage and improve efficiency. The plan should:

- Make optimal use of both vehicle maintenance facilities and local commercial resources for repairing and maintaining vehicles based on the vehicles' geographical location.
- Make optimal use of the Postal Service's national vehicle shuttle agreement or other local commercial shuttle services, when cost-effective, for transporting vehicles to and from maintenance facilities.

RESPONSE: Management concurs; district manager interaction and support of the vehicle maintenance plan is vital, directly enhancing vehicle maintenance officials' ability to better manage and improve efficiency.

COURSE OF ACTION: District Managers have been directed to work with vehicle maintenance facility officials, modifying, as required, the local annual vehicle maintenance plan to better manage and improve efficiency. This action is incorporated into the letter of instruction detailed in "Course of Action" to Recommendation # 1.

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RECOMMENDATION 8: The Vice-President, Southwest Area, require the Area Vehicle Maintenance Program Analyst to validate, as necessary, information provided in support of the vehicle maintenance program to ensure sufficient oversight of the scheduled maintenance and repair program at vehicle maintenance facilities, according to Handbook PO-701, *Fleet Management*.

RESPONSE: Management concurs; having been vacant for an extended period, the SWA position of VMPA has been filled, and is pro-actively engaged in reviewing VMF performance and providing guidance to ensure compliance with all maintenance requirements and VMF resources are optimized.

Although management is supportive of any additional data enhancements that may be desired, management believes the *current* authorized Vehicle Maintenance Accounting System (VMAS) provides adequate data necessary to ensure sufficient oversight of the scheduled maintenance and repair program at vehicle maintenance facilities.

COURSE OF ACTION: As it currently is Southwest Area's custom, management will continue to require the Vehicle Maintenance Program Analyst, to validate as necessary, information provided in support of the vehicle maintenance program to ensure sufficient oversight of the scheduled maintenance and repair program at vehicle maintenance facilities, according to Handbook PO-701, *Fleet Management*.

Compliance: District managers have been given 30 days suspense with which to provide this office with an Action Plan, including an expected compliance date, addressing each of the requirements in the aforementioned Letter of Instruction.


Ellis A. Burgoyne

cc: Katherine S. Banks

ATTACHMENT J

ELLIS A. BURGOYNE
VICE PRESIDENT, SOUTHWEST AREA OPERATIONS



July 22, 2008

DISTRICT MANAGERS
SOUTHWEST AREA

SUBJECT: Vehicle Maintenance Oversight and Resource Optimization

A recent national audit of Vehicle Maintenance Facilities (VMF), which included Southwest Area VMFs, has concluded that Southwest Area did not complete scheduled preventive maintenance (PM) on all vehicles and did not always integrate both VMF and local commercial vendors for optimum use of available resources.

A sampling of 10 VMFs yielded an Area-wide deficiency in performing 29% of PMs, although 4 of the 10 VMF completed all required SPS. Other findings included:

- VMF personnel charging 1/10 labor hour to a work order to "clear" a past due PM
- Vehicle Post Offices (VPO) reluctance to release a vehicle for PM
- Insufficient district/area oversight to ensure completion of PMs
- Optimal combinations of VMF and Local Contract Vendor resources not fully utilized

Therefore, upon receipt of this directive, district managers are given thirty day suspense in which to provide this office with an Action Plan, including an expected compliance date, addressing each of the seven requirements annotated below:

- Assess vehicle maintenance automotive technician positions, to better ensure sufficient staff availability for vehicle maintenance service.
- Monitor and track key maintenance activities to ensure completion of all required scheduled maintenance, repairs, and maintenance requirements are met in a timely manner.
- Require vehicle maintenance facility officials to begin immediately to aggressively and efficiently conduct all maintenance in arrears, ensuring all vehicle PMs are current, and to correctly record vehicle status if maintenance was not performed.

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- Instruct vehicle maintenance officials' to discontinue the practice of performing maintenance for 1/10 of 1 hour and adjusting the vehicle maintenance schedule to appear to eliminate situations where maintenance was not performed.
- Assess maintenance reserve (MR) requirements, to allocate, reallocate, as necessary, to maintain MR resources at the authorized level (minimum 3% Light Delivery and 4% Rural Route).
- Monitor and review vehicle maintenance facilities operations and performance utilizing the guidance of the Model Vehicle Maintenance Facility Performance Review.
- Work with vehicle maintenance facility officials, modifying, as required, the local annual vehicle maintenance plan to better manage and improve efficiency.

Questions or concerns may be directed to [REDACTED] VMPA, SWA, at [REDACTED]
[REDACTED]


Ellis A. Burgoyne