



Flagship Fleet Management, LLC.

Replacement Analysis

Keep equipment too long and drive cost higher than the point of purchasing a new vehicle. Disposing of equipment too early and you lose some of the useful life further increasing cost. The general accepted way to determine the optimal replacement point is where cumulative maintenance cost starts to out-run the market value of the asset.

We all have a good feel for when equipment should be replaced. Our main challenge is how to sell the budget folks that it is better to spend now than run an aging fleet. Optimally managing the replacement of equipment can be the single most cost cutting measure we can do. It is at the core of what we are responsible for.

So were is this magical point in time and how do we quantify it? For each class?

- 1) Figure cost per mile by service year by equipment unit
- 2) Figure the average cumulative maintenance cost by service year & class
- 3) Figure the average yearly depreciation (Straight Line, or your option)
- 4) Graph the two and see where the lines cross, viola, the replacement point is found.

Determining cumulative maintenance cost requires figuring cost per use unit (miles, hours, days, etc.) Cost per use unit is determined by the taking the total cost to maintain an equipment unit by the number of use units (miles/hours). All values are compared based on the service year of the equipment. Flagship Fleet Replace provides the detailed cost per use unit (mile/hour) analysis to drive the vehicle replacement model. This enables fleet managers to review the data that makes up the cost per mile calculation, so managers can catch anomalies within different vehicle classes.

Cost Per Mile										Company: AS Bench mark class: PUC					
EQ#	Dept.	Status	VYear	Orig. Cost	Serv Yr.	CYear	Dep. Value	Miles/Hours	HSE Labor	HSE Parts	CML WD	Fuel Cost	Maint CPM	Fuel CPM	Tot. CPM
185501	107106	5	1992	\$14,625.00	12	2003	\$0.00	METER 6,367	\$436.50	\$19.18		\$700.93	\$0.07	\$0.11	\$0.18
					11	2002		METER 2,522	\$76.50	\$8.18	\$600.00		\$0.27	\$0.27	
					10	2001		METER 1,585	\$225.00		\$12.50		\$0.15	\$0.15	
					9	2000		METER 4,577	\$355.50	\$82.83	\$220.75		\$0.14	\$0.14	
					8	1999		METER 815				\$0.00	\$0.00		
								3,173	\$273.38	\$36.73	\$166.65	\$700.93			
			15,866	\$1,093.50	\$110.19	\$833.25	\$700.93	\$0.13	\$0.04	\$0.17					
186712	635000	5	1993	\$12,716.22	11	2003	\$0.00	METER 4,968	\$274.50	\$235.14	\$381.03	\$541.13	\$0.18	\$0.11	\$0.29
					10	2002		METER 7,305	\$526.50	\$81.54	\$1,091.52	\$84.50	\$0.23	\$0.01	\$0.24
					9	2001		METER 8,128	\$684.00	\$381.63	\$1,245.59		\$0.28	\$0.28	
					8	2000		METER 8,829	\$198.00	\$37.87	\$65.83		\$0.03	\$0.03	
					7	1999		METER 2,645				\$0.00	\$0.00		
								6,375	\$420.75	\$184.05	\$556.79	\$312.82			
			31,875	\$1,683.00	\$736.18	\$2,783.97	\$625.63	\$0.16	\$0.02	\$0.18					
190712	634000	1	1994	\$13,878.00	11	2004	\$0.00	METER 2,283			\$128.60	\$760.19	\$0.06	\$0.33	\$0.39
					10	2003		METER 12,567	\$49.50	\$5.21	\$795.15	\$1,218.46	\$0.07	\$0.10	\$0.16
					9	2002		METER 4,806	\$90.00	\$18.86	\$32.95		\$0.03	\$0.03	
					8	2001		METER 5,987	\$90.00	\$17.85			\$0.02	\$0.02	
					7	2000		METER 9,604	\$211.50	\$127.94	\$188.87		\$0.06	\$0.06	
					6	1999		METER 2,938				\$0.00	\$0.00		
			6,364	\$110.25	\$42.47	\$190.93	\$989.33								
			38,185	\$441.00	\$169.86	\$1,146.57	\$1,978.65	\$0.05	\$0.05	\$0.10					
191444	107123	1	1994	\$15,993.00	11	2004	\$0.00	METER 1,776	\$333.00	\$153.08	\$27.77	\$401.19	\$0.29	\$0.23	\$0.52
					10	2003		METER 5,471	\$364.50	\$419.97		\$560.45	\$0.14	\$0.10	\$0.25
					9	2002		METER 7,296	\$94.50	\$13.38	\$179.66		\$0.04	\$0.04	
					8	2001		METER 6,867	\$396.00	\$76.34	\$224.32		\$0.10	\$0.10	
					7	2000		METER 2,677	\$112.50		\$56.90		\$0.06	\$0.06	
					6	1999		METER 351	\$45.00	\$72.41		\$0.33	\$0.33		
			4,073	\$224.25	\$147.04	\$81.44	\$480.82								
			24,438	\$1,345.50	\$735.18	\$488.65	\$961.64	\$0.11	\$0.04	\$0.14					

This report is also helpful in determining rates to be charged by class to different departments. Now forecasting is not the headache it used to be.





Flagship Fleet Management, LLC. *Replacement Analysis*

We work with you to determine how to class your equipment and give the best information. The Fleet Replace module utilizes the class code within your fleet management system. Further, we will work with you to make sure costs that should not be included are filtered out (i.e.: accident data).

Each class of equipment in differing agencies can show a differing point of optimal equipment replacement. The optimal replacement point is the point where the valuation of the vehicle reaches the running sum of maintenance expense. For example, most light vehicle classes have an optimal replacement point hits in the 6th year of service. Vehicles that continue in service past this point will have maintenance costs that out run the value of the vehicle. The goal is to replace vehicles at the optimal replacement point for the most cost-effective fleet operation.





Flagship Fleet Management, LLC.

Replacement Analysis

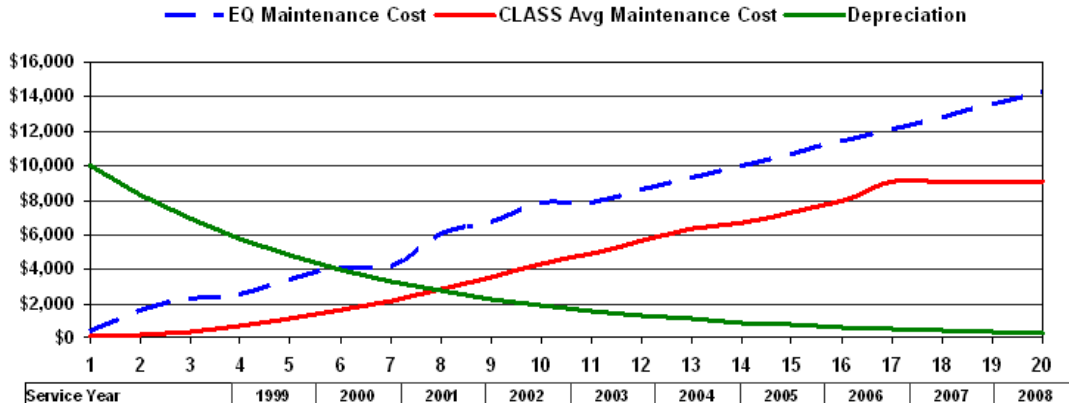
3D Replacement - Class

Class: CPA

Equipment Number 185483
 Year/Make/Model 1992 / DODG / DAKOTA
 In Service Date 8/1/1993
 Original Cost \$11,775

Class Min Point: 4.1
EQ Point Rank: 36.4
 Class Max Point: 45.8

Diminishing Point of Return



Service Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Labor Hours		710	710	710	710	710	710	4	6	8
Maintenance Cost	300	1,550	2,245	2,515	3,371	4,022	4,072	5,998	6,670	7,810
Maintenance Cost - Class Avg. (CPA)	53	142	374	726	1,148	1,588	2,149	2,853	3,487	4,243
Resale Val. (Orig. \$12,081)	10,027	8,323	6,908	5,733	4,759	3,950	3,278	2,721	2,258	1,875
Use Miles		710	710	710	710	710	710	375	1,889	2,409

Scoring

In Service	# Mon. In Service	Age Point	Current Meter 1	Usage Point	Maint Yr. 3	Maint Lst Yr.	Reliable Point	Original Cost	Maint Total	Maint % Cost	Repair Point	Severe Service	Point Total
8/1/1993	187	15.7	71,164	7.1	\$695	\$1,140	1.6	\$11,775	\$7,810	66%	12.0		36.4

Cost Per Mile

Serv Yr.	CYear	Mile/Hours	HSE Labor	HSE Parts	CML W/O	Fuel Cost	Total Cost	Maint CPM	Fuel CPM	Total CPM
8	1999	METER 375	\$166.50	\$66.13	\$67.80	\$41.58	\$342.01	\$0.80	\$0.11	\$0.91
9	2000	1,889	\$279.00	\$240.58	\$730.00	\$173.47	\$1,423.05	\$0.66	\$0.09	\$0.75
10	2001	2,409	\$355.50	\$339.46		\$254.35	\$949.31	\$0.29	\$0.11	\$0.39
11	2002	2,496	\$270.00			\$156.22	\$426.22	\$0.11	\$0.06	\$0.17
12	2003	2,762	\$157.50	\$6.32	\$692.00	\$308.77	\$1,164.59	\$0.31	\$0.11	\$0.42
13	2004	2,104	\$405.00	\$245.90		\$257.15	\$908.05	\$0.31	\$0.12	\$0.43
14	2005	4,362	\$42.00	\$8.79		\$529.94	\$580.73	\$0.01	\$0.12	\$0.13
15	2006	6,783	\$966.00	\$884.70	\$75.00	\$1,007.97	\$2,933.67	\$0.28	\$0.15	\$0.43
16	2007	3,252	\$206.00	\$44.11	\$421.40	\$587.19	\$1,258.70	\$0.21	\$0.18	\$0.39
17	2008	3,870	\$676.00	\$439.02	\$25.00	\$774.42	\$1,914.44	\$0.29	\$0.20	\$0.49
18	2009	737				\$62.82	\$62.82	\$0.00	\$0.09	\$0.09
		31,039	\$3,523.50	\$2,275.01	\$2,011.20	\$4,153.88	\$11,963.59	\$0.25	\$0.13	\$0.39

Flagship Approach to Replacement

The first step is to identify at the class level where the budget should be applied. Step two is to identify with-in the class which equipment to replace. Within the replacement analysis tool we provide the overview and the detail to do just that.

The Vehicle Replacement report calculates the total cost by service year and compares it with the market depreciation of the asset. This provides a guide for when the cost of



Flagship Fleet Management, LLC
 Fleet Management Solutions

We Lead the way...

Contact:
 Jeff Steinmetz
 949-388-0795



Flagship Fleet Management, LLC.

Replacement Analysis



maintaining the asset exceeds market value. The maintenance less market value can be considered the loss for allowing equipment to go beyond this point.

The Vehicle Replacement report will determine the direction. The Cost per mile report will determine the point on the map. The cost per mile report will rank equipment based on cost. Equipment that costs the most (with-in the class) should be replaced first. Replacement can be as easy as select all the defaults and run the reports or we can change settings to zero in exactly on the specific costs and depreciation that best match your current fleet situation.

The equipment and maintenance selection has a similar look and feel to the controls in Fleet Navigator for selecting the specific type of equipment and maintenance for complication.

Reports | Equipment | Maintenance | Depreciation | Compile Data

Select equipment status codes for analysis

UN-Selected Status Codes			Selected Status Code	
11	BILLING ADJUSTMENT	 Select All	1	ACTIVE FLEET
12	INVALID AGENCY #		10	PRIVATE RENTAL VEHICLE
13	FUEL ISLAND MAINT - RETIRED		3	SOLD - DISPOSED
14	NEW VEHICLE TEMPLATE		5	SEASONAL VEHICLE
2	PDR - DISPOSITION IN PROGRESS		6	WRECKED / TOTALED
7	STOLEN / UN-RECOVERED			
8	FUEL ISLAND MAINT - ACTIVE			
9	AGENCY # FOR BILLING			
			 Clear All	





Flagship Fleet Management, LLC.

Replacement Analysis

Reports Equipment Maintenance Depreciation Compile Data

Select repair reasons for analysis for transactional analysis

UN-Selected Repair Reasons		Selected Repair Reasons	
A	ACCIDENT	B	BREAKDOWN
D	DAMAGE IN OPERATION - REPORTED	C	WEAR AND TEAR
H	VANDALISM	E	PM
S	LOST / STOLEN	F	PREPARE FOR ON PA
U	DAMAGE IN OPERATION -NONREPORTED	FI	MAINT/REPAIR FUEL IS/CARD RE
Y	DEDUCTIBLE	G	NEW CAR PREP
Z	ADMINISTRATIVE CHARGE	I	INSPECTION
Z6	BILLING ADJUSTMENT	J	WARRANTY
		K	RECALL
		L	DISPOSAL
		M	REQUESTED ACCESSORY
		N	MODIFY
		O	OUT OF SERVICE
		OF	INSPECT OFF PA
		P	MISSED SERVICE FEE
		PS	PREPARE FOR SURPLUS
		Q	DEFECTIVE
		R	ROAD CALL

Select All

Clear All

Depreciation Settings

Depreciation has many different options for complication into the replacement reporting.

- 1) The depreciation can be set to the same yearly declining balance for all equipment classes.
- 2) The year declining balance can be adjusted for individual years. For example: More or less depreciation can be taken in the first years then level off as the equipment gets older.
- 3) Depreciation can be set to a separate yearly declining balance for each equipment class. The selected classes are pulled and assigned the default depreciation based on the overall settings. Each class yearly percentage can be modified further. Each class can have a custom yearly depreciation schedule.





Flagship Fleet Management, LLC.

Replacement Analysis

Reports | Equipment | Maintenance | **Depreciation** | Compile Data

Depreciation

Set Depreciation by Year

Represents the market value of the asset based on monthly declining balance. Not to be confused with asset depreciation based on set service life.

Set Individual Class Depreciation

Class Code	Description	Rate	...	...	...
01-02CPD	PICKUPS COMPACT 4X4	17.00%	...	...	...
01-02CVN	CARGO VAN	20.00%	...	...	...
01-02HYB	SEDAN HYBRID	18.50%	...	...	...
01-02PUC	PICKUPS 3/4 TON 4X2	17.00%	...	...	...
01-02PUD	PICKUPS 3/4 TON 4X4	21.00%	...	...	...
01-02SBD	STATION BUS 15 PASSENGER	18.65%	...	...	...
01-02SFF	SEDAN FULL SIZE FWD	17.00%	...	...	...
01-02SIC	SEDAN INTERMED 4 CYL	16.50%	...	...	...
01-02SII	SEDAN INTERMED 6 CYL	16.50%	...	...	...
01-02SIP	DO NOT USE SEDAN FULL SIZE POL	16.50%	...	...	...
01-02UTB	UTILITY VEH 4X4 INTERMEDIATE	16.50%	...	...	...
01-02UTC	UTILITY VEH 4X4 FULL SIZE	17.50%	...	...	...
01-02UTE	CARRYALL 4X4	17.25%	...	...	...
01-02VMI	WAGON INTERMED 6 CYL	21.25%	...	...	...
01-03CBC	CAB CHASSIS 4X4 15000 GVW	25.00%	...	...	...

Depreciation by Year Edit

Year	MV of Original
1	71.50%
2	51.12%
3	36.55%
4	26.14%
5	18.69%
6	13.36%
7	9.55%
8	6.83%





Flagship Fleet Management, LLC.

Replacement Analysis

Maintenance & Meter Value Sources

Data may be better represented using a source specific to your site. Flagship gives you the option to select the data sources that best fit your organization. This is the final step to preparing the Replacement Reporting module. Once these settings are set it is time to compile the data and review the charts and graphs.

Reports | Equipment | Maintenance | Depreciation | Compile Data

The last compile date/time: 9/14/2007 9:57:06 AM

Class Code

Bench Class

The class code the replacement data will roll-up to on replacement reports

Equipment Meter Source

- Fuel Transactions
- Work Orders
- Usage Tickets
- Equipment Summary
- Average Based on Current Meter and In Service Date

Represents the source of the equipment meter over time. For sites that have equipment summary data it maybe best to pull from that source.

Equipment Cost Source

Capitalized Value or if 0 Original Cost

Description	Code
Capitalized Value	capitalized_value
Capitalized Value or if 0 Original Cost	IIF((capitalized_value)=0,(capita
Computed Replacement Cost	repl_cost_computed
<input checked="" type="checkbox"/> Estimated Replacement Cost	est_replace_cost
<input type="checkbox"/> Fixed Replacement Cost	fixed_replace_cost
Original Cost	original_cost
Original Cost + Capitalized Value	Cdbl(Nz((original_cost)))+Cdbl(

Fuel Data Source

- Transactions
- Equipment Summary

[Compile Cost Data](#)

Reports

The complete report listing with description follows this section.

- Class Cost Per Mile
- Class Cost Per Mile - Model
- Class Maintenance Year Comparison
- Class Replacement
- Class Replacement 20
- Equipment Cost Per Mile
- Equipment Cost Per Mile - Class
- Equipment Cost Per Mile - Department
- Equipment Cost Per Mile - Department ALL
- Equipment Cost Per Mile - Model
- Equipment Maintenance Year Comparison
- Equipment Miles Exception
- Equipment Replacement
- Equipment Replacement - Class
- Equipment Replacement - Department

Select a report to print. If printing a report for the first time select PRINT PREVIEW to make sure it is formatted correctly.

[Print](#)

[Print Preview](#)





Flagship Fleet Management, LLC.
Replacement Analysis



Flagship Fleet Management, LLC
Fleet Management Solutions

We Lead the way...

Contact:
Jeff Steinmetz
949-388-0795



Flagship Fleet Management, LLC.

Replacement Analysis

Replacement Scoring

The scoring method for replacement provides a more simplistic method for figuring when equipment should be replaced. This method ranks equipment from worst to best based on several factors. The higher the score to more likely the equipment is due for replacement.

Scoring Factors

Age	Points are added to an equipment unit based on the time period for the in-service date and current date/time on the computer. The interval and point assigned are set by the user.
Usage	Points are assigned based on the current meter of the equipment and the meter class assignment. The range and points assigned are set for each meter class.
Type of Service	Additional points are assigned based on the class and department the equipment unit is assigned too.
Reliability	Reliability compares repair cost in the third year of service with the last full



Flagship Fleet Management, LLC
Fleet Management Solutions

We Lead the way...

Contact:
Jeff Steinmetz
949-388-0795



Flagship Fleet Management, LLC.

Replacement Analysis

	year of service. The third year repair cost is divided by the last full service year to come up with this ratio.
Repair Cost	<p>One to Six points are assigned based on the total life to date repair cost divided into the original purchase price of the equipment. Additional weight can be applied to this category by using the multiplier.</p> <ul style="list-style-type: none">-One (2) point if equipment life repair cost is between 0-20% of original cost.-Two (2) point if equipment life repair cost is between 20-40% of original cost.-Three (3) points if equipment life repair cost is between 40-60% of original cost.-Four (4) points if equipment life repair cost is greater then the original cost.-Five (5) points if equipment life repair cost is between 80-100% of original cost.-Six (6) points if equipment life repair cost is over 100% of original cost.

