

 Operations 2 -
Financial Calculations and Formulas

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Dealership

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Student

388 (Class 3)

Class #

- Service

Service Department Sales And Gross (Labor Only)

Category	Sales	Gross	Gross as % of Sales	Margin
Customer Pay	\$ 6,513	\$ 9,799	133.7%	92.00%
Customer			0%	0.00%
Customer Labor			0%	0.00%
Warranty	\$ 29,960	\$ 29,807	99.49%	99.49%
Warranty Other			0%	0.00%
Warranty	\$ 34,265	\$ 27,337	79.81%	25.50%
DOT / Road Ready PDI			0%	0.00%
AS - Cost of Labor			0%	0.00%
Total	\$ 148,424	\$ 111,147	74.96%	100.00%

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The Picture	
Customer Pay Gross Profit %	70.36%
Total Service Dept. G.P. %	74.36%

Parts To Labor Ratios

Category	Part Sales	Labor Sales	PA Ratio
Customer Pay	\$ 9,877	\$ 10,311	0.97
Customer	\$ -	\$ -	0.00
Customer Labor	\$ -	\$ -	0.00
Warranty	\$ 24,287	\$ 20,800	0.73
Warranty Other	\$ -	\$ -	0.00
Warranty	\$ 24,287	\$ 20,800	0.84
Total	\$ 138,229	\$ 145,424	0.94

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The Picture	
Customer Pay Gross Profit %	70.39%
Total Service Dept. G.P. %	74.38%
Parts / Labor Ratio (Cust. Pay Only)	0.97

Service Department Profit Centering

Expense Category	Dollar Amount	% of Gross	Profit
Department Gross	\$ 111,819		
Variable Expense	\$ 38,055	34.04%	
Leasing Expense		0.00%	
Periodical Expense	\$ 24,147	21.60%	
Self Paid Expense	\$ 23,395	20.91%	
Cost Expense	\$ 22,100	19.80%	
Unallocated Expense		0.00%	
Sales Salary		0.00%	
Total Expenses	\$ 135,154	121.60%	
Net Profit	\$ 124,100	111.00%	

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The Picture	
Customer Pay Gross Profit %	70.33%
Total Service Dept. G.P. %	74.38%
Parts / Labor Ratio (Cost. Pay Only)	0.37
Total Service Dept. Expenses	\$ 135,154

Fixed Absorption

Parts Department Total Gross	\$ 60,183	% All Dept Exp
Service Department Total Gross	\$ 231,247	70.32%
Body Shop Department Total Gross		0.00%
Total Fixed Gross Profit	\$ 381,430	
Total Dealership Expense	\$ 493,081	

Overhead Expense	\$ 471,001	
Total Fixed Gross Profit	\$ 381,430	
Total Dealership Expense	\$ 471,001	
Fixed Absorption Percentage	38.36%	Guideline 60%

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The Picture	
Customer Pay Gross Profit %	70.32%
Total Service Dept. G.P. %	74.38%
Parts / Labor Ratio (Cust. Pay Only)	0.97
Total Service Dept. Expenses	\$ 130,154

NADA ACTUAL SERVICE ANALYSIS

	Labor Sales / Month		Effective Labor Rates		Hours Billed
Customer Pay	\$ 85,311	÷	86.85	=	982.3
Customer	\$ -	÷		=	0.00
Customer Other	\$ -	÷		=	0.00
Warranty	\$ 29,858	÷	123.60	=	241.6
Internal	\$ 34,255	÷	98.56	=	347.6
New Vehicle Prep	\$ -	÷		=	0.00
Total	\$ 149,424				1571.4

POTENTIAL

$$\begin{array}{rcl} \$ 149,424 & \div & 1571.40 = \$ 95.09 \\ \text{Total labor sales for month} & & \text{Total hours billed} \quad \text{Effective Labor Rate} \end{array}$$

$$\begin{array}{rclcl} 8.00 & \times & 8 & \times & 22 = 1,408.0 \\ \text{\# Service mechanical technicians} & & \text{\# Hours/Day} & & \text{Working Days/Month} \quad \text{Hours Available to Sell} \end{array}$$

$$\begin{array}{rclcl} 1,408.0 & \times & \$ 95.09 & = & \$ 133,886 \quad \$ 167,357.48 \\ \text{Hours Available to Sell} & & \text{Effective Labor Rate} & & \text{Labor sales potential @100\%} \quad \text{Labor sales potential @ 125\%} \end{array}$$

How proficient are your technicians ?

$$\begin{array}{rcl} 1,571.4 & \div & 1,408.00 = 111.61\% \\ \text{Total Hours Billed} & & \text{Hours Available to Sell} \quad \text{Tech Proficiency} \end{array}$$

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Hours Per RO (RO Analysis)	4.9
Percent of One Item R.O.'s (RO Analysis)	48.00%
Customer Pay Effective Labor Rate (DMS Reoprt)	\$ 86.85
Warranty Labor Rate (DMS Report)	\$ 123.60
Total Overall Effective Labor Rate	\$ 95.09
Overall Technician Proficiency	111.61%

FACILITY POTENTIAL	
Number of Bays	23
	x
Number of Days	22
	x
Number of Hours	11
	x
Effective Labor Rate	\$95.09
	<i>equals</i>
FACILITY POTENTIAL	\$529,268

FACILITY UTILIZATION	
Total Labor Sales	\$149,424
	÷
Facility Potential	\$529,268
	<i>equals</i>
FACILITY UTILIZATION	28.23%

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Calculating Real Cost of Labor

\$149,424

Labor Sales

1,571.4

Divided by Hours Billed

\$95.09

= OELR

\$149,424

Labor Sales

\$111,147

=Labor Gross

\$38,277

=Labor Cost

\$38,277

Labor Cost

1,571.40

/ Hours Billed

\$24.36

=Real Cost

\$24.36

Real Cost

÷

24.00%

=

\$101.50

E.L.R. Needed to

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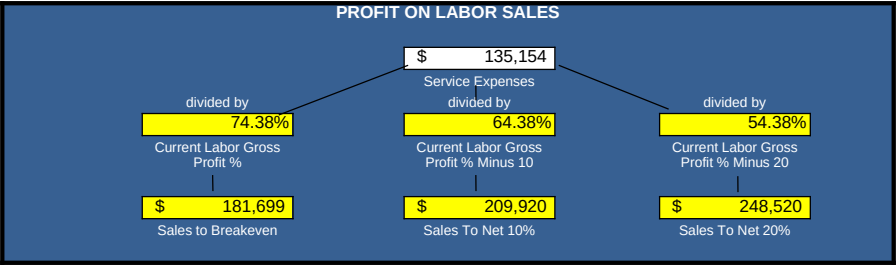
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OWNER BASE POTENTIAL

6299	x	8	=	50,392.0
5 Year Owner Base		Annual Hours Purchased		Market Potential / Hours
50,392.0	x	\$ 95.09	=	\$ 4,791,749
Market Potential/ Hours		Effective Labor Rate		5 Yr. O.B Sales Potential
\$ 161,883	x	12	=	\$ 1,942,596
Avg. Mos. Labor Sales (excluding internal, PDI and		Annualized		Current Labor Sales Trend
\$ 1,942,596	÷	\$ 4,791,749	=	40.54%
Labor Sales Trend		5 Yr. O.B. Sales Potential		Ouch

**Note: The industry average of 35% is very poor performance.*

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The Picture

Customer Pay Gross Profit %	70.33%	Customer Pay E.L.R.	\$ 86.85
Total Service Dept. G.P. %	74.38%	Total (overall) E.L.R.	\$ 95.09
Parts / Labor Ratio (Cust Pay Only)	0.97	Warranty Labor Rate	\$ 123.60
Total Service Dept Expense	\$ 135,154	Overall Tech Proficiency	111.61%
Hours Per R.O (recap)	4.87		
Percent Of One Item R.O.'s	48.00%		

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Technician Value

Calculate using daily available hours per technician

Hours	3	X	Days	21	X	Labor Rate	\$ 55.00	=	Sales Value	\$ 15,975
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Sales Value	\$ 15,975	X	Gross Margin	74.38%	=	Profit Value	\$ 11,883
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\$ 11,883	X	70%	\$ 8,318
\$ 11,883	X	80%	\$ 9,506
\$ 11,883	X	90%	\$ 10,695
\$ 11,883	X	100%	\$ 11,883
\$ 11,883	X	110%	\$ 13,071
\$ 11,883	X	120%	\$ 14,259
\$ 11,883	X	111.6%	\$ 13,262
Profit Value		Your Proficiency #	Adjusted Profit Value

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STAFFING REQUIREMENTS

A. Sales To Break Even

Service Expenses for One Month	÷	Current Gross Profit Percent	=	Sales To Break Even
\$ 135,154	÷	74.38%	=	\$ 181,699

B. Sales To Generate 20% Net

Service Expenses for One Month	÷	Current Gross Profit Percent (Minus 20)	=	Sales To Generate 20% Net
\$ 135,154	÷	54.38%	=	\$ 248,520

C. Technician Value

Daily Work Hours	X	Average Proficiency Rate	X	Overall Effective Labor Rate	X	Work Days Per Month	=	Technician Value
8	X	80%	X	\$ 95.09	X	21	=	\$12,780
8	X	90%	X	\$ 95.09	X	21	=	\$14,378
8	X	100%	X	\$ 95.09	X	21	=	\$15,975
8	X	120%	X	\$ 95.09	X	21	=	\$19,170

D. Staffing To Break Even

Sales To Break Even	÷	Technician Value	=	Staffing
\$ 181,699	÷	\$ 12,780 @ 80%	=	14.2
\$ 181,699	÷	\$ 14,378 @ 90%	=	12.6
\$ 181,699	÷	\$ 15,975 @ 100%	=	11.4
\$ 181,699	÷	\$ 19,170 @ 120%	=	9.5

E. Staffing To Generate 20% Net

Sales To Generate 20% Net	÷	Technician Value	=	Staffing
\$ 248,520	÷	\$ 12,780 @ 80%	=	19.4
\$ 248,520	÷	\$ 14,378 @ 90%	=	17.3
\$ 248,520	÷	\$ 15,975 @ 100%	=	15.6
\$ 248,520	÷	\$ 19,170 @ 120%	=	13.0

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Service Advisor Performance

How To Set Advisor Sales Objectives To: Break Even, Net 10%, & Net 20%

Break Even

1 Service Department's Monthly Expenses		\$135,154
2 Divide by current labor gross profit % to break even	÷	74.38%
3 Equals New Sales Objective	=	\$ 181,699
4 Number of Advisors		3.0
5 Equals Sales Objective per Advisor	=	\$ 60,566
6 Number of work days per month	÷	21
7 Equals daily sales objective per advisor	=	\$ 2,884
8 Current overall effective labor rate	÷	\$ 95.09
9 Equals daily sales objective per advisor (FRH's)	=	30.3

Net 10 %

1 Service Department's Monthly Expenses		\$135,154
2 Divide by current labor gross profit % minus 10 to net 10%	÷	64.38%
3 Equals New Sales Objective	=	\$ 209,920
4 Number of Advisors		3.0
5 Equals Sales Objective per Advisor	=	\$ 69,973
6 Number of work days per month	÷	21
7 Equals daily sales objective per advisor	=	\$ 3,332
8 Current overall effective labor rate	÷	\$ 95.09
9 Equals daily sales objective per advisor (FRH's)	=	35.0

Net 20 %

1 Service Department's Monthly Expenses		\$135,154
2 Divide by current labor gross profit % minus 20 to net 20%	÷	54.38%
3 Equals New Sales Objective	=	\$ 248,520
4 Number of Advisors		3.0
5 Equals Sales Objective per Advisor	=	\$ 82,840
6 Number of work days per month	÷	21
7 Equals daily sales objective per advisor	=	\$ 3,945
8 Current overall effective labor rate	÷	\$ 95.09
9 Equals daily sales objective per advisor (FRH's)	=	41.5

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Exercise to See What Happens When You Increase Your Hours Per Repair Order

Number of customer R.O.'s for the month	X	920
Multiply by .3 hours		0.3 hours
Additional customer labor hours generated	=	276.00
	X	
Multiply by Customer Labor Rate		\$ 86.85
Equals additional Customer Labor Sales Generated	=	\$ 23,971
	X	
Multiply by customer Labor Gross Profit %		70.33%
Equals additional Labor Gross Profit \$ generated	= (A)	\$ 16,857
Divide Parts Sales R.O. by Labor Sales R.O. to calculate \$ parts sales per \$ of Labor Sales	=	0.97
	X	
Multiply by Customer Labor Sales		\$ 23,971
	=	
Equals additional Customer Parts Sales generated		\$ 23,371
	X	
Multiply by Customer Parts Sales Gross Profit %		38.20%
Equals additional Parts Gross Profit \$ Generated	= (B)	\$ 8,928
Add Gross Profit from Labor (A) and Parts (B)	=	\$ 25,785

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Labor Rate Calculations

1 Calculate the **Labor Rate** for the following operation.

A/C Charge and Check

	Labor Price		\$144.00			
	Units		1.2			
Price	\$144.00	÷	Units	1.2	=	\$120.00
						Labor Rate

2 Calculate the **Effective Labor Rate** for the following "Repair" operations.

Labor Operations	Labor Price		Labor Units		Labor Rate
Clean Fuel Injectors	\$ 117.60	÷	1.20	=	\$ 98.00
R&R Rear Hub Bearing.	\$ 96.00	÷	0.80	=	\$120.00
Replace Trans. Pan gasket	\$ 107.80	÷	1.10	=	\$ 98.00
R&R Headlight unit (1)	\$ 108.00	÷	0.90	=	\$120.00
	\$ 429.40	÷	4.0	=	\$107.35
	Total Price		Total Units		Effective Labor Rate (For This R.O.)

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Calculating Mark-Up

- 3 Using the following formula, mark-up a part costing \$6.72 to attain a 35% gross profit (round to the nearest cent)

$$\begin{array}{rclcl}
 \boxed{100\%} & \Rightarrow & \boxed{35\%} & = & \boxed{1.54} \\
 100\% & & \text{Desired Gross Profit percent} & & \text{Mark-Up Factor} \\
 \\
 \boxed{\$6.72} & \times & \boxed{1.54} & = & \boxed{\$10.34} \\
 \text{Part Cost} & & \text{Mark-Up Factor} & & \text{Retail Price}
 \end{array}$$

- 4 Calculate the "Weighted Average" price at a 40% Gross Profit for the following parts (round to the nearest cent)

Item	Cost		Annual Turnover		Total Cost
Filter #1	\$4.36	X	112	=	\$488.32
Filter #2	\$4.01	X	56	=	\$224.56
Filter #3	\$3.56	X	85	=	\$302.60
Filter #4	\$3.86	X	202	=	\$779.72
Filter #5	\$3.51	X	36	=	\$126.36
		Total Items	491	Total Cost	\$1,921.56

$$\begin{array}{rclcl}
 \$1,921.56 & \div & 491 & = & \$3.91 \\
 \text{Total Cost} & & \text{Total Items} & & \text{Average Cost}
 \end{array}$$

$$\begin{array}{rclcl}
 \$3.91 & \times & 1.67 & = & \$6.54 \\
 \text{Cost} & & \text{Factor} & & \text{Average Price}
 \end{array}$$

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Cost Of A Come-Back

Lost Customer Opportunity		1.5
Average Hours per R.O.	X	4.9
	=	7.3
Effective Labor Rate	X	\$ 95.09
Lost Labor Sales	=	\$ 695 (A)

Service Department Gross Profit % (Excluding Sublet)	X	74.38%
Lost Labor Gross	=	\$ 517 (B)

Lost Labor Sales		\$ 695 (A)
Parts / Labor Ratio	X	0.97
	=	\$ 677
Parts Dept Gross Profit % R.O.Sales	X	38.20%
Lost Parts Gross	=	\$ 259 (C)

Lost Labor Gross		\$ 517 (B)
Lost Parts Gross	+	\$ 259 (C)
Total Lost Gross	=	\$ 775

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