



# Fixed Operations 2 -

Financial Calculations and Formulas

**New Rochelle Chevrolet**

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**Dealership**

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**Student**

**N404**

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**Class #**

- Service

Service Department Sales And Gross (Labor Only)

Category	Sales	Gross	Gross as % of Sales	Change
Customer Pay	\$ 127,123	\$ 97,892	76.99%	\$ 6,624
Customer			0%	0.00%
Customer Other			0%	0.00%
Warranty	\$ 57,333	\$ 44,213	77.12%	23.50%
Warranty/Other			0%	0.00%
Invoice	\$ 81,888	\$ 49,510	60.47%	12.11%
Inv / Road Ready / PCI	\$ 13,624	\$ 6,694	49.17%	5.11%
AGC Cost Of Labor	\$ 18,264	\$ 4,816	26.37%	2.50%
<b>Total</b>	<b>\$ 266,624</b>	<b>\$ 198,239</b>	<b>74.37%</b>	<b>100.00%</b>

The Picture	
Customer Pay Gross Profit %	76.99%
Total Service Dept. G.P. %	74.37%

Parts To Labor Ratios

Category	Part Cost	Labor Hours	Ratio
Customer Pay	\$ 92,985	127,822	0.73
Customer	\$		0.00
Customer Other	\$		0.00
Warranty	\$ 90,985	127,822	1.50
Warranty/Other	\$		0.00
Other	\$ 33,963	61,888	0.55
<b>Total</b>	<b>\$ 215,927</b>	<b>246,944</b>	<b>0.88</b>

The Picture	
Customer Pay Gross Profit %	76.99%
Total Service Dept. G.P. %	74.97%
Parts / Labor Ratio (Cust. Pay Only)	0.73

Service Department Profit Centering

Department	Salary Amount	% of Gross	Profit
Department Gross	\$ 136,303		
Variable Expense	\$ 114,745	87.87%	
Selling Expense		0.00%	
Personnel Expense	\$ 214,394	168.12%	
Other Fixed Expense	\$ 43,515	32.12%	
Plant Expense	\$ 75,768	58.34%	
Unallocated Expense		0.00%	
Dealer's Salary	\$ 48,000	37.11%	
Total Expenses	\$ 512,443	398.43%	
Net Profit	\$ 234,456	189.43%	

The Picture	
Customer Pay Gross Profit %	16.92%
Total Service Dept. G.P. %	78.37%
Parts / Labor Ratio (Cust. Pay Only)	0.72
Total Service Dept. Expenses	\$ 512,443

**Fixed Absorption**

Parts Department Total Gross	\$ 119,050	% Adj. Over Exp	11.33%
Service Department Total Gross	\$ 198,038		20.69%
Body Shop Department Total Gross			0.00%
Total Fixed Gross Profit	\$ 317,093		
Total Dealership Expense	\$ 876,361		

Overhead Expense	\$ 876,361		
Total Fixed Gross Profit	\$ 317,093		
Total Dealership Expense	\$ 876,361		
Fixed Absorption Percentage	36.18%	Guideline	60%

<b>The Picture</b>	
Customer Pay Gross Profit %	76.99%
Total Service Dept. C.P. %	74.97%
Parts / Labor Ratio (Cust. Pay Only)	0.73
Total Service Dept. Expenses	\$ 312,443

### SERVICE INVENTORY ANALYSIS

	Labor Sales / Month	Effective Labor Rates	Hours Billed
Customer Pay	\$ 127,123	÷ 175.00 =	726.4
Customer	\$ -	÷ =	0.00
Customer Other	\$ -	÷ =	0.00
Warranty	\$ 57,333	÷ 160.55 =	357.1
Internal	\$ 61,888	÷ 175.00 =	353.6
New Vehicle Prep	\$ 13,614	÷ 160.55 =	84.8
<b>Total</b>	<b>\$ 259,958</b>		<b>1522.0</b>

**POTENTIAL**

\$ 259,958	÷	1521.96	=	\$ 170.80
Total labor sales for month		Total hours billed		Effective Labor Rate

12.00	x	9	x	26.0	=	2,808.0
# Service mechanical technicians		# Hours/Day		Working Days/Month		Hours Available to Sell

2,808.0	x	\$ 167.77	=	\$ 471,098	=	\$ 588,872.70
Hours Available to Sell		Effective Labor Rate		Labor sales potential @100%		Labor sales potential @ 125%

How proficient are your technicians ?

1,522.0	÷	2,808.00	=	54.20%
Total Hours Billed		Hours Available to Sell		Tech Proficiency

- |  |           |
|--|-----------|
| Hours Per RO (RO Analysis)                     | 164.6     |
| Percent of One Item R.O.'s (RO Analysis)       | 33.00%    |
| Customer Pay Effective Labor Rate (DMS Reoprt) | \$ 175.00 |
| Warranty Labor Rate (DMS Report)               | \$ 160.55 |
| Total Overall Effective Labor Rate             | \$ 167.77 |
| Overall Technician Proficiency                 | 54.20%    |

FACILITY POTENTIAL	
Number of Bays	14
	x
Number of Days	26
	x
Number of Hours	9
	x
Effective Labor Rate	\$ 170.80
	<i>equals</i>
FACILITY POTENTIAL	\$ 559,555

FACILITY UTILIZATION	
Total Labor Sales	\$ 266,624
	÷
Facility Potential	\$ 559,555
	<i>equals</i>
FACILITY UTILIZATION	47.65%

Calculating Real Cost of Labor

\$ 266,624  
Labor Sales

1,522.0  
Divided by Hours Billed

\$ 175.18  
= OELR

\$ 266,624  
Labor Sales

\$ 198,289  
-Labor Gross

\$ 68,335  
-Labor Cost

\$ 68,335  
Labor Cost

1,521.96  
/ Hours Billed

\$ 44.90  
-Real Cost

\$44.90  
Real Cost

÷

24.00%

=

\$187.08  
E.L.R. Needed to earn  
76%

OWNER BASE POTENTIAL

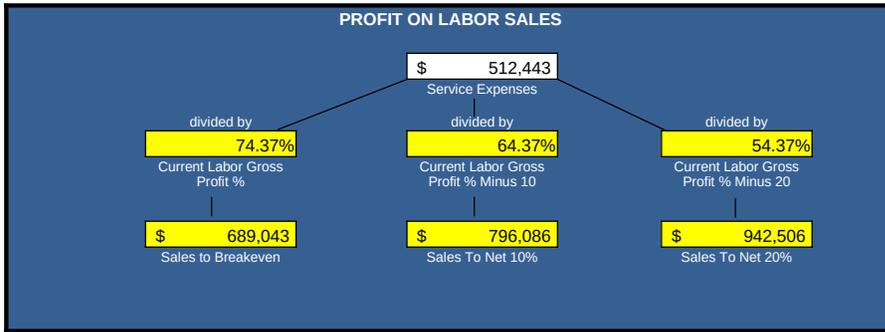
$$\begin{array}{rcccl} \boxed{4200} & \times & \boxed{8} & = & \boxed{33,600.0} \\ \text{5 Year Owner Base} & & \text{Annual Hours Purchased} & & \text{Market Potential / Hours} \end{array}$$

$$\begin{array}{rcccl} \boxed{33,600.0} & \times & \boxed{\$ 175.18} & = & \boxed{\$ 5,886,204} \\ \text{Market Potential/ Hours} & & \text{Effective Labor Rate} & & \text{5 Yr. O.B Sales Potential} \end{array}$$

$$\begin{array}{rcccl} \boxed{\$ 159,477} & \times & \boxed{12} & = & \boxed{\$ 1,913,718} \\ \text{Avg. Mos. Labor Sales} & & \text{Annualized} & & \text{Current Labor Sales Trend} \\ \text{(excluding internal, PDI and} & & & & \\ \text{NVI)} & & & & \end{array}$$

$$\begin{array}{rcccl} \boxed{\$ 1,913,718} & \div & \boxed{\$ 5,886,204} & = & \boxed{32.51\%} \\ \text{Labor Sales Trend} & & \text{5 Yr. O.B. Sales Potential} & & \text{Ouch} \end{array}$$

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



**The Picture**

Customer Pay Gross Profit %	76.99%	Customer Pay E.L.R.	\$ 175.00
Total Service Dept. G.P.%	74.37%	Total (overall) E.L.R.	\$ 167.77
Parts / Labor Ratio (Cust Pay Only)	0.72	Warranty Labor Rate	\$ 160.55
Total Service Dept Expense	\$ 512,443	Overall Tech Proficiency	54.20%
Hours Per R.O (recap)	164.56		
Percent Of One Item R.O.'s	33.00%		

### Technician Value

Calculate using daily available hours per technician

Hours		x	Days		x	Labor Rate	=	Sales Value
	9			26		\$ 170.80		\$ 39,968

Sales Value		x	Gross Margin	=	Profit Value
\$ 39,968			74.37%		\$ 29,724

\$ 29,724	x	70%		\$ 20,807
\$ 29,724	x	80%		\$ 23,780
\$ 29,724	x	90%		\$ 26,752
\$ 29,724	x	100%		\$ 29,724
\$ 29,724	x	110%		\$ 32,697
\$ 29,724	x	120%		\$ 35,669
\$ 29,724	x	54.2%	=	\$ 16,111
Profit Value		Your Proficiency #		Adjusted Profit Value

## STAFFING REQUIREMENTS

### A. Sales To Break Even

Service Expenses for One Month	÷	Current Gross Profit Percent	=	Sales To Break Even
\$ 512,443	÷	74.37%	=	\$ 689,043

### B. Sales To Generate 20% Net

Service Expenses for One Month	÷	Current Gross Profit Percent (Minus 20)	=	Sales To Generate 20% Net
\$ 512,443	÷	54.37%	=	\$ 942,506

### C. Technician Value

Daily Work Hours	X	Average Proficiency Rate	X	Overall Effective Labor Rate	X	Work Days Per Month	=	Technician Value
9	X	80%	X	\$ 167.77	X	26	=	\$31,407
9	X	90%	X	\$ 167.77	X	26	=	\$35,332
9	X	100%	X	\$ 167.77	X	26	=	\$39,258
9	X	120%	X	\$ 167.77	X	26	=	\$47,110

### D. Staffing To Break Even

Sales To Break Even	÷	Technician Value	=	Staffing
\$ 689,043	÷	\$ 31,407 @ 80%	=	21.9
\$ 689,043	÷	\$ 35,332 @ 90%	=	19.5
\$ 689,043	÷	\$ 39,258 @ 100%	=	17.6
\$ 689,043	÷	\$ 47,110 @ 120%	=	14.6

### E. Staffing To Generate 20% Net

Sales To Generate 20% Net	÷	Technician Value	=	Staffing
\$ 942,506	÷	\$ 31,407 @ 80%	=	30.0
\$ 942,506	÷	\$ 35,332 @ 90%	=	26.7
\$ 942,506	÷	\$ 39,258 @ 100%	=	24.0
\$ 942,506	÷	\$ 47,110 @ 120%	=	20.0

## Service Advisor Performance

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

Break Even	
1 Service Department's Monthly Expenses	\$512,433
2 Divide by current labor gross profit % to break even	74.37%
3 Equals New Sales Objective	\$ 689,029
4 Number of Advisors	3.0
5 Equals Sales Objective per Advisor	\$ 229,676
6 Number of work days per month	26 360
7 Equals daily sales objective per advisor	\$ 8,834
8 Current overall effective labor rate	\$ 167.77
9 Equals daily sales objective per advisor (FRH's)	52.7

Net 10 %	
1 Service Department's Monthly Expenses	\$512,433
2 Divide by current labor gross profit % minus 10 to net 10%	64.37%
3 Equals New Sales Objective	\$ 796,071
4 Number of Advisors	3.0
5 Equals Sales Objective per Advisor	\$ 265,357
6 Number of work days per month	26
7 Equals daily sales objective per advisor	\$ 10,206
8 Current overall effective labor rate	\$ 167.77
9 Equals daily sales objective per advisor (FRH's)	60.8

Net 20 %	
1 Service Department's Monthly Expenses	\$512,433
2 Divide by current labor gross profit % minus 20 to net 20%	54.37%
3 Equals New Sales Objective	\$ 942,487
4 Number of Advisors	3.0
5 Equals Sales Objective per Advisor	\$ 314,162
6 Number of work days per month	26
7 Equals daily sales objective per advisor	\$ 12,083
8 Current overall effective labor rate	\$ 167.77
9 Equals daily sales objective per advisor (FRH's)	72.0

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

Number of customer R.O.'s for the month	X	360
Multiply by .3 hours		0.3 hours
Additional customer labor hours generated	=	108.00
	X	
Multiply by Customer Labor Rate		\$ 175.00
Equals additional Customer Labor Sales Generated	=	\$ 18,900
	X	
Multiply by customer Labor Gross Profit %		76.99%
Equals additional Labor Gross Profit \$ generated	= (A)	\$ 14,550
Divide Parts Sales R.O. by Labor Sales R.O. to calculate \$ parts sales per \$ of Labor Sales	=	0.72
	X	
Multiply by Customer Labor Sales		\$ 18,900
	=	
Equals additional Customer Parts Sales generated		\$ 13,527
	X	
Multiply by Customer Parts Sales Gross Profit %		32.00%
Equals additional Parts Gross Profit \$ Generated	= (B)	\$ 4,329
Add Gross Profit from Labor (A) and Parts (B)	=	\$ 18,879

# Labor Rate Calculations

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

A/C Charge and Check

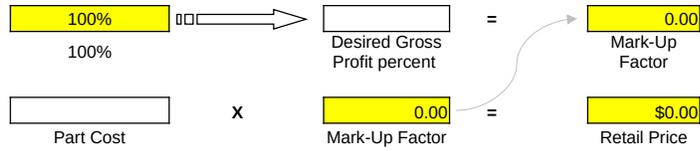
	Labor Price	\$144.00		
	Hours	1.2		
Price	÷	Hours	=	\$0.00
				Labor Rate

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

Labor Operations	Labor Price	÷	Labor Hours	=	Labor Rate
Clean Fuel Injectors	\$ 117.60	↓	1.20	=	<input type="text"/>
R&R Rear Hub Bearing.	\$ 96.00	↓	0.80	=	<input type="text"/>
Replace Trans. Pan gasket	\$ 107.80	↓	1.10	=	<input type="text"/>
R&R Headlight unit (1)	\$ 108.00	↓	0.90	=	<input type="text"/>
	Total Price	÷	Total Hours	=	\$0.00
					Effective Labor Rate
					(For This R.O.)

## 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)



- 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	112	<input type="text"/>
Filter #2	\$4.01	56	<input type="text"/>
Filter #3	\$3.56	85	<input type="text"/>
Filter #4	\$3.86	202	<input type="text"/>
Filter #5	\$3.51	36	<input type="text"/>
Total Items		491	Total Cost <input type="text" value="\$0.00"/>

$$\frac{\$ -}{\text{Total Cost}} \div \frac{491}{\text{Total Items}} = \frac{\$ -}{\text{Weighted Average Cost}}$$

$$\frac{\$ -}{\text{Weighted Average Cost}} \times \frac{\text{Mark-Up Factor}}{\text{Mark-Up Factor}} = \frac{\$ -}{\text{Weighted Average Price}}$$

## Cost Of A Come-Back

Lost Customer Opportunity			<input style="width: 90%;" type="text"/>
Average Hours per R.O.	X		<input style="width: 90%;" type="text"/>
	=		<input style="width: 90%; background-color: yellow;" type="text" value="0.0"/>
Effective Labor Rate	X		<input style="width: 90%; background-color: yellow;" type="text" value="\$ 167.77"/>
Lost Labor Sales	=		<input style="width: 90%; background-color: yellow;" type="text" value="\$ - (A)"/>
Service Department Gross Profit % (Excluding Sublet)	X		<input style="width: 90%; background-color: yellow;" type="text" value="74.37%"/>
Lost Labor Gross	=		<input style="width: 90%; background-color: yellow;" type="text" value="\$ - (B)"/>
Lost Labor Sales			<input style="width: 90%; background-color: yellow;" type="text" value="\$ - (A)"/>
Parts / Labor Ratio	X		<input style="width: 90%; background-color: yellow;" type="text" value="0.72"/>
	=		<input style="width: 90%; background-color: yellow;" type="text" value="\$ -"/>
Parts Dept Gross Profit % R.O.Sales	X		<input style="width: 90%;" type="text"/>
Lost Parts Gross	=		<input style="width: 90%; background-color: yellow;" type="text" value="\$ - (C)"/>
Lost Labor Gross			<input style="width: 90%; background-color: yellow;" type="text" value="\$ - (B)"/>
Lost Parts Gross	+		<input style="width: 90%; background-color: yellow;" type="text" value="\$ - (C)"/>
Total Lost Gross	=		<input style="width: 90%; background-color: yellow;" type="text" value="\$ -"/>