

Keeping Score...

Financial Management for Contractors

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State and local laws vary significantly and it is the responsibility of the user of this manual to ensure that the activities suggested in this manual comply with all laws that apply to the employers operations.

Keeping Score...Financial Management for Contractors is designed to educate and provide general information regarding the subject matter covered. However, state and local laws and practices vary from state to state and are subject to change. Because each contracting company is different and each situation in that contracting company is different, specific advice should be tailored to that particular company and circumstances. For this reason, the reader is advised to consult with his or her own advisors regarding the individual specific situation.

The author has taken reasonable precautions in the research for and writing of this manual and believes that the facts presented in the manual are accurate as of the date written. However, neither the author nor the publisher assume any responsibility for any errors or omissions. The author and publisher specifically disclaim any liability resulting from the use or application of the information contained in this manual, and the information is not intended to serve as legal advise or financial advice related to individual situations.

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I. Introduction

How is your business doing? Your financial statements will tell you... assuming that you have accurate information going into the statements so that you can get accurate information FROM the statements.

Financial statements are your scorecard. They help you keep score with respect to how your business is doing. With proper inputs, the outputs will help you spot minor problems so you can take action to eliminate those problem areas before they become major crises.

In the work that I've done with thousands of contractors I find that managing the financial side of a business is usually the more difficult part of managing a contracting business. Why? It's not hands on. You can't touch the numbers. You can only touch the cash...and even that is usually in a bank account where you can't touch the dollar bills.

Keeping Score...Financial Management for Contractors gives you the nuts and bolts you need to properly manage the financial side of your contracting business. I don't expect that you will become a Certified Public Accountant. However, if you use this manual, you'll learn enough to question when things don't look right. When you complete it, you should know enough to question your accountants, whether they are internal or external to your company. The only way that you can keep your hard earned money is to know

that your financial statements are correct each month. You have to know the score and believe the score each month.

Keeping Score...Financial Management for Contractors is written with exercises and answers. It takes time to do the exercises. Don't cheat! The best way to learn financial management is to take the time to do exercises, suffer through them, and get that "AHA!" when the light bulb finally goes off. It takes time in the beginning. However, once you get through them and analyze your cash on a weekly basis and your financial statements on a monthly basis, you'll realize how little time it actually takes. The key is to do it regularly and consistently; even when you get busy. After all, it's your hard earned cash that you're trying to protect.

II. Cash versus Accrual Accounting

When I started my first business in 1980 (before I got my MBA in finance) I didn't know the difference between cash and accrual accounting. I'll never forget looking at Schedule C of the Income tax form which asks whether I was filing on a cash basis or an accrual basis. I decided that I'd better find out in a hurry what the difference was. So, I asked. I learned that if you account on a cash basis, you record a sale when you get the money in the door. You record an expense when you write the check for that expense. There are no accounts receivable and accounts payable.

Accrual based accounting means that you have a sale when you send out an invoice even though you haven't received the cash for it. You have an accounts receivable. Likewise, whenever you get a bill in from a supplier or other vendor you have an expense even though you may not have paid that bill. You have an accounts payable.

For operational purposes, construction businesses must operate on an accrual basis. The tax laws have recently changed so if your accountant wants to file your taxes on a cash basis, that is up to your accountant and you. However, you still need to operate your day-to-day business on an accrual basis. Here's why.

1. Most contracting businesses have accounts receivable. You have to watch your receivables on a monthly basis to ensure that you are getting paid promptly.

2. Most contracting businesses have accounts payable. You have to watch your accounts payable to make sure that you have the cash to take discounts where appropriate and to pay them promptly.
3. To properly match sales and expenses against sales you need to operate on an accrual basis. Otherwise your gross margins will vary widely, depending on when you get cash for jobs and pay the job expenses. As you'll learn later in this book, a consistent gross margin is critical for financial management. The best way to monitor your actual costs as compared to your bids is to look at your gross margin. Consistency requires that you operate on an accrual basis.

So, even if your accountant has your business report on a cash basis for tax purposes, when you look at your financial statements on a month by month they should be on an accrual basis. The thing that is really important is that you track your accounts receivable, your accounts payable and you track your job cost. And, the only way I know how to do that is if you are on an accrual based accounting system.

III. Balance Sheets

A balance sheet is simply a snapshot of the health of your business for any particular point in time. So many contractors have told me, “I never look at my balance sheet”. When I ask why, usually the answer is “it doesn’t tell me anything” (my interpretation is that they don’t understand them). The reality is that balance sheets tell you a lot about what’s going on in your business.

Your balance sheet says “how is my company doing?” from an overall perspective. It knows what your receivables are, it knows whether they are increasing or decreasing, it knows what your payables are and it knows how much the company is worth. Your balance sheet is literally for one moment in time. The reason that it is a snap shot for a moment in the time is that your balance sheet is constantly changing. The reason that it is constantly changing is that your cash is constantly changing. You have a different cash balance every day which means that your balance sheet changes every day.

As a result, you create a balance sheet for consistent moments in time. They are usually the last day of each month and the last day of your fiscal year. This is a good time frame to make the comparisons. It is a snapshot of the health of your business at a regular point in time so you can compare and answer the question, “How is the company doing?”

The balance sheet is called the balance sheet because assets must balance liabilities plus net worth. Figure 1 shows the balance sheet format with several of the major categories.

ASSETS	LIABILITIES
Current Assets	Current Liabilities
Cash	Accounts payable
Investments	Line of credit
Accounts receivable	Deferred income-svc agr.
Inventory	Warranty
Prepaid expenses	Taxes payable
Total Current Assets	Current portion of long term debt
	Total Current Liabilities
Long term (fixed) Assets	Long Term Liabilities
Furniture	Notes payable
Tools	Owner payable
Office equipment	Total Long Term Liabilities
Vehicles	
Buildings	TOTAL LIABILITIES
Deposits	
Less accumulated depreciation	
Total Long Term Assets	
	NET WORTH
	Capital Stock
	Retained Earnings
	TOTAL NET WORTH
<u>TOTAL ASSETS</u>	<u>TOTAL LIABILITIES & NET WORTH</u>

Figure 1. Balance Sheet Format.

Assets are things of value. Liabilities are things that you owe. Net worth is what I call your fudge factor, i.e. if you had to close your doors tomorrow you would convert all of your assets to cash and pay off all of your liabilities. What would be left is the net worth of your business.

Let's take each of the major components of the balance sheet as they relate to a contracting business.

Assets

There are two types of assets. They are current assets and long term assets, also called fixed assets. Let's look at current assets first.

Current Assets

Current assets are either cash or things that can be turned into cash within a year. The major categories of current assets are cash, investments, accounts receivable, inventory and prepaid expenses. Occasionally you'll have some unusual current assets. However, on an operational or day-to-day basis, you'll generally have these categories.

Cash is cash. Cash includes the money that's in your bank account, petty cash that's in your shop, as well as any money market funds that you can easily convert to cash.

Investments are stocks and other relatively liquid investments that can be sold quickly for cash. Look at the cash portion of your business as what you use to write a check immediately to pay an invoice.

There are three types of accounts receivable. The first is trade receivables, i.e. customers who owe you money for work performed. Retainage is often broken out. The second is employee receivables, i.e. your employees who you have lent money to. The third is owner receivables, i.e. the company has lent you money and you owe the payment back to the company. As an owner, if you plan on paying the company back within a year, then include owners receivables in current assets. If you, as an owner, don't expect to pay the money back within a year, then put the owner receivable in long term assets.

Many times you'll also see an allowance for doubtful accounts. If an invoice is 90 days old or older, this invoice should be put into an allowance for doubtful accounts. The likelihood is that it's going to be tough to collect that money and you may not get it. So, you wouldn't count it in the day-to-day receivables that are usually collected in 30 days. Accounts receivable are trade receivables, employee receivables, and owner receivables paid back within a year less an allowance for doubtful accounts. That gives net receivables.

The next major current asset category is inventory. One of my favorite sayings is "Inventory is a bet". You have to be very careful with inventory. Unless you are ordering materials specifically for a job, you are betting your hard earned dollars that you

are going to be able to sell a part when you buy it from a supply house. So when your service technicians go to a supply house and they say “I need two motors, one for my truck and one for Ms. Jones”, that’s a bet. The technician is betting, with your money, that he’ll be able to sell that second motor before he forgets that it’s on his truck.

Inventory is a bet. Your balance sheet lets you track your bets. I have been to a lot of contractors’ offices and warehouses and seen your bets on shelves. Five, six, seven, and ten years of inventory just sitting on a shelf. You’ve paid for it, you bet and you lost.

So be very, very careful with inventory. It is truly a bet. You’ve got to count it and account for it each month. I’ve seen a lot of balance sheets which have the same inventory amount each month. That’s not real. You purchase material and use material every business day. It is very unlikely that you will have the same dollar volume of inventory at the beginning and the end of the month. Start with a beginning inventory, add the purchases and subtract the usage. Most accounting programs let you do this easily as long as you track job cost.

The last major current asset category is prepaid expenses. Prepaid expenses are those expenses that you paid for a longer period of time than one month. For example, if you have to pay your insurance once a year and it covers the entire year the only expense you have every month is one-twelfth of that total insurance payment. So, if you paid the entire yearly premium of \$1,200 in January, you have \$100 in insurance expense in January and \$1,100 of prepaid expenses. In February, you’ll have another \$100 in

insurance expense and \$1,000 in prepaid expenses. This continues for the year until all of the insurance expense is paid and there are no pre-paid insurance expenses on the balance sheet.

Here's why the insurance payment is an asset to you: If you decide to change insurance company in the middle of your year the first insurance company has to refund you the portion of the year that hasn't been insured. You'll get the cash back so that's a prepaid expense. There are other expenses that you might pay for a quarter or six months or for a year and those are normally prepaid expenses also. The expense is an asset to you until you use it.

There are two other categories of current assets used by mechanical contractors: They are Work in process and underbillings. Work in process is used when you want to accrue revenues and expenses until the contracts are completed. Underbillings are when you have completed work but have not fully billed for that work.

In summary, current assets are either cash or cash equivalents, money market funds, liquid investments, accounts receivables, inventory and prepaid expenses. Let's take a look at our long term or fixed assets.

Fixed Assets

Long term or fixed assets are what I call “the stuff”. They are furniture, fixtures, buildings, vehicles, and things in your company that don’t turn into cash easily. They’re the things that you see on a day-to-day basis that you use for a long period of time. These are assets you have that do not turn into cash within a year.

The tax laws constantly change with the amount of purchases that you can “write off” each year. That means you can expense these purchases rather than having to depreciate them over a longer time period. For example, if you purchase a filing cabinet, you might consider that as an expense and not an asset. Talk with your accountant to see what is appropriate for your company.

Your vehicles are a fixed asset because you don’t expect to trade them in or sell them within a year.

Depreciation is the portion of a purchase that you can expense each year. For example, under current tax law, computer purchases are depreciated over a three year period. This means that if you spend \$6,000 for computers, you can expense, on a straight line basis, \$2,000 per year rather than taking the entire \$6,000 expense in one year.

The last long term asset is a deposit. Many times when you move into a new facility the landlord asks for a rent deposit, or the utility company asks for a deposit, etc. These deposits are held for a specific period of time, and usually longer than one year.

Remember to put an owner receivable in long term assets if you aren't planning on repaying the loan within a year. As an owner it is your prerogative to make a loan to yourself. However, if you don't have an intention of repaying that loan within a year it belongs in fixed assets.

Be real and be accurate with your balance sheet. Remember garbage in equals garbage out. And, you can't make intelligent decisions about your company with inaccurate financial statements.

In summary, there are two parts to the asset segment of the balance sheet, current assets and fixed or long term assets. Let's look at the other side of the balance sheet, the liabilities and net worth segments.

Liabilities

Liabilities are debts that your business owes. Like assets, liabilities are divided into two segments, current liabilities and long term liabilities.

Current Liabilities

Current liabilities are debts that must be paid within one year. The major categories of current liabilities are accounts payable, accrued taxes (payroll taxes, income taxes, state taxes, local taxes, etc.), deferred income, warranty, and current portion of long term debt.

There are three types of accounts payable. The first is trade payables or suppliers your company owes money too. The second is employee payables used when an employee loans money to the company. The third is owner payables used when an owner loans the company money. If you expect the company to pay a loan back within a year, the loan amount goes into current liabilities. If you don't expect the company to repay the loan to the owner in a year, the loan amount goes in long term liabilities.

The next major category of current liabilities is accrued taxes. Generally these taxes are payroll taxes, federal and sometimes state income taxes, sales taxes, franchise taxes, and a number of geographically local taxes. These are all due within one year, and usually a lot sooner than that. Please verify that payroll taxes are current. Owners of the business are personally liable for payroll tax payments. Make sure that you see the payment confirmation numbers. Interest and penalties on these taxes are expensive!

The next current liabilities category is deferred income. There are two types of deferred income: service agreements and deposits (different from asset deposits). Let's cover service agreements first. When your company sells residential service agreements, the customer pays for the agreement in advance. Let's say your agreement cost to the customer is \$100. When Mrs. Jones pays you that \$100 she is trusting that your company will perform its obligations that year. An obligation is a debt. The company's liability or debt is to perform one (two or three, depending on your agreement) maintenance checks per year. This is the contract with Mrs. Jones.

When the company performs the first maintenance check, if the agreement calls for two maintenance checks per year, the company decreases half of the liability since it has performed half the work. The decreased liability is due to performing the work and as such, when the work is performed, this increases service agreement revenues on the income statement. Assuming that there are two checks per year, the company now has \$50 in revenues and \$50 in deferred income. When the company performs the second check, the entire liability is gone and the entire \$100 can then be counted as service agreement revenues.

If, during the agreement year, Mrs. Jones wants her money back, the company is obliged to return the unused portion of the agreement. When you sell a service agreement a year in advance, the cash that is received should go into an interest bearing account. This is what I call "the rainy day fund". You can take the cash out of the rainy day fund as you

do the work. However, most contractors leave it in there until they need it for that “rainy day”.

This is the proper way to account for service agreement sales. When you review your financial statements at the end of the month you always know how much liability you have in terms of the work that needs to be performed.

The other type of deferred income is deposits. I know of a lot of contractors who get deposits for future work. Here’s an example. A contractor in the northern United States sells air conditioning equipment replacements in the winter with the intention of performing that work in the spring after the snow has melted. His reasoning to the customer is that the customer can lock in this year’s price and have the work performed the following spring. He explains that the manufacturers usually raise their prices in January and his price will then have to increase to cover his increasing costs. Many customers agree to lock in the price at the lower price in the winter for work to be done in the spring with a 10% deposit. The deposit is fully refundable.

That 10% deposit was given to the company for future work. The company now has a liability to perform that work. This is deferred income. When the work gets performed, the liability goes away and the contractor has revenue. Again, very similar to the service agreements, the company has a liability until it performs the work. So, customer deposits for future work are current liabilities until the work is performed.

The next major category of current liabilities is warranty. This account can become substantial for those contractors who do a lot of residential or commercial construction. As a condition for most construction jobs, the contractor has to warranty the work for a year. Therefore, each job cost includes warranty expense. Since the company hasn't performed the warranty at the conclusion of the job, this obligation is recorded in current liabilities under the warranty category. It becomes liability to your company until the warranty period is up. At the end of the warranty period, any unused expense is considered additional profit to the job.

If your company had a warranty issue, the expense for taking care of that issue comes out of the warranty fund. That's why it's there. Hopefully, at the end of the year, there were enough funds to take care of any warranty issues.

The next major current liabilities category is current portion of long term debt. Let's use the example where a company purchases a truck and takes out a loan for three years to pay for the truck. Of the three year period, one year's principal repayment is due within a year. This is the current portion of long term debt. The other two years go into long term liabilities. Once 12 months payments have been made, there is one year in long term liabilities and one year in current portion of long term debt. Once the second 12 months payments are made, there is only one year left in current liabilities and no payments in long term liabilities.

For some construction companies, there is an additional current liability account called overbillings. This is where your company has billed more than the value of the work that has been performed. This is a liability to the company because it has to perform work that it has been paid for in advance.

In summary, current liabilities are debts that must be repaid within one year. Let's look at the other liability segment, long term liabilities.

Long Term Liabilities

Long term liabilities are debts which are repaid in longer than one year. These are notes payable and owner's payables. There are several types of notes. They include vehicle notes, mortgages, and notes to previous owners. Only one year's payments go into current liabilities. The rest of the principal payment amount goes into long term liabilities.

If an owner loans the company money which will be repaid in longer than one year, this loan also goes into long term liabilities.

In summary, the liabilities segment of the balance sheet is divided into two categories, current liabilities which must be repaid within one year and long term liabilities which are repaid in a term longer than one year. The final segment of the balance sheet is Net Worth.

Net Worth

Net worth is what is left if your company had to liquidate all of its assets to pay its liabilities. There are two major categories in Net Worth: stockholder's or owner's equity and retained earnings. Stockholder's equity is the value that stockholders have invested in the business. This could have been during the start of the business or as additional stock investments during operation of the business. Many times owners sell stock to employees or other investors. This stock value goes in the net worth segment.

Retained earnings are that portion of the company's profits that the company didn't distribute as dividends at the end of its fiscal year. Most contractors don't take dividends. If they take a distribution, they take it as a bonus. (The bonus is expensed on the income statement before profits are calculated). Retained earnings grow from year to year, as long as the company is profitable. For an unprofitable year, retained earnings shrink. As company profits increase then the net worth of the business increases. As profits decrease the net worth of the business decreases.

In summary, I look at net worth as what I call the "fudge factor". If you could sell this business tomorrow what would it be worth on paper? And the way to arrive at this number is to subtract liabilities from assets; i.e. turn all assets into cash and pay off all liabilities. Whatever is left is what the business is worth.

The balance sheet is a snapshot of the health of your business at one moment in time. It tracks your assets, your liabilities, and your net worth. Tracking these numbers is important to ensure that the business remains viable.

IV. Income Statements

Income statements are also called profit and loss statements. Most accountants call them profit and loss statements. Most people who come from the financial world (like I did) call them income statements. An income statement is a picture of the profit and loss of your company over a period of time. It's a cumulative statement. Unlike the balance sheet, which is a snapshot of the health of your business at a moment in time, an income statement looks at how the company has performed over a period of time. At the end of that period of time, usually one year, the income statement "starts over".

Most accounting programs provide for options with respect to the company's income statements. Generally owners choose to see month to date and year to date. Other options are month to date this year and month to date last year as well as year to date this year and year to date last year. I like to see where the company is month to date this year and year to date this year and compare it to last year's monthly and yearly numbers. This lets you know how you are doing for the year as well as how it compares to last year. Hopefully the company is performing better than last year. If not, find out why not.

The income statement is a cumulative statement. And, at the end of the cumulative period, usually one year, it starts over again. So, if the business performed well last year, figure out what went right, repeat it, and do it better in the upcoming year. If the business performed poorly, figure out what went wrong, fix it, and perform better in the upcoming year. The slate is erased at the end of each fiscal year!

Many companies departmentalize their income statements. This means that the service department has its own statement, the new construction department has its own statement, etc. This way you can truly tell which segments of your business are profitable. Departmentalization will be covered in a later chapter.

The income statement format is shown in Figure 2.

$$\begin{array}{r} \text{Sales} \\ - \text{Cost of goods sold (COGS)} \\ = \text{Gross profit} \\ \\ \text{Gross profit} \\ - \text{General and administrative expenses (G\&A)} \\ = \text{Net operating profits or net profit before taxes (PBT)} \\ \\ \text{Net operating profits} \\ - \text{Other Expense + Other Income} \\ = \text{Profit before taxes} \\ \\ \text{Profit before taxes} \\ - \text{Taxes} \\ = \text{Net Profit} \end{array}$$

Figure 2. Income Statement Format

The Income Statement equation starts with sales or revenues. Subtract the cost of sales from sales. The result is gross profit. Then subtract overhead from gross profit and the result is net operating profit. Then subtract other expense or add other income and the result is profit before taxes. Finally, subtract taxes. The result is net profit.

There are different categories of sales. Some include new construction, service, replacement, remodel, service contract, warranty, and parts. Some contractors break sales into residential and commercial sales. Others divide them by the type of work, i.e. plumbing, electrical, hvac, boiler, oil heat, indoor air quality, or pool. There are numerous methods to departmentalize (break apart) revenues. The important thing is to ensure that each department gets its own income statement and stands alone. Each department should be profitable. If it isn't fix it or eliminate that department!

The next category on the income statement is cost of sales or direct cost. These are expenses that are incurred because something was sold. Almost every contractor includes direct materials, direct labor, subcontracts, commissions, warranty, permits, and freight in cost of sales.

There are also some gray areas. Some contractors also include labor burden and truck costs in costs of goods sold. Their reasoning is there is a burden associated with each hour of direct labor (FICA and Medicare expense, unemployment taxes, health insurance, worker's compensation, union dues, etc.) and these expenses would not be incurred if the employee didn't have an hour of labor. With respect to truck costs, the thinking is "if I didn't have a service call I wouldn't have truck cost. Each service technician has a truck and without a truck the service technician can't do his job".

Some contractors say no, truck costs go in overhead. There is no right and wrong answer. Put these expenses where you are comfortable with putting these expenses. The

thing is that you have to be consistent. That means, if in one month you put burden in direct cost, the next month you can't put it in overhead cost. So it's got to be in cost of goods sold all the time or in overhead all of the time.

Gross profit is the result of subtracting cost of goods sold (COGS) or direct expenses from sales. Another term you'll often hear is gross margin (GM). Gross margin is defined as gross profit divided by sales. Gross margin is always a percentage. Gross profit is always dollars.

To get operating profit, subtract overhead from gross profit.

Overhead is the expense that your business incurs so that it can stay in business. Generally it is divided into two pieces, compensation expenses and General and Administrative (G&A) expenses. G&A Expenses are also called operational expenses.

Compensation expenses are salary related expenses. They include office salaries, unapplied time, owner salaries, and labor burden if labor burden is included here rather than in direct expenses. In either case, your compensation expenses will have the labor burden for the office staff and owner's salaries.

It is important to understand that unapplied time is an overhead expense. This is when that the company chooses to pay its field labor for hours that it is not producing revenues for the company. For example, if a plumber goes out on a service call that is a direct cost

and is included in cost of goods sold. If the plumber is attending a meeting or a training class, that's unapplied time which is accounted for in overhead compensation expenses. Unapplied time can be very valuable for that plumber and the company. However, that time is not generating revenues for the company so it is considered unapplied time.

Callbacks are also unapplied labor. They usually have their own category in compensation overhead.

The only costs that go into direct costs are those costs that are incurred when a field employee generates revenues or sales for the company. Meeting time, training time, travel time, any time that is not generating revenues but is paid for goes into unapplied time in compensation overhead.

One contractor asked me why I choose to break out compensation overhead from G&A overhead. From my perspective the area contractors have the least control over is labor. I want to see what the expenses are each month, both in direct labor and in overhead labor. A contractor has to watch labor very, very closely and the best way I know how to do that is to put it in its own special category in overhead. This way every month, when owners review the financial statements they can see how much was spent on overhead labor, callbacks, and unapplied time. If it is out of line, the owners can do something immediately.

Here's a real life example: I worked with a contractor a few years ago that didn't believe he had an unapplied time and callback problem. I realized that the only part of his income statement he really looked at was the net profit before taxes. The reality as I found was that the field labor were putting 40 hours on their time sheets but only producing revenues for 25 to 30 hours per week. So, I asked the bookkeeper to change the place where the unapplied time and callbacks were printed on the income statement...right before total expenses and operating profit. The owner saw these numbers every month. Very soon unapplied time and call backs decreased dramatically which increased the profitability of the company.

So, if you think there is an issue with either direct or indirect expenses, you can change the income statement format. Remember it's your income statement. You can look at it in ways that you'd like to look at it not necessarily any standard way that an accountant wants you to look at it.

The next segment of the income statement is G&A or operational overhead. These expenses include rent, utilities, dues and subscriptions, accounting fees, bank charges, donations, telephone, insurance, travel, entertainment, and many other expenses the business incurs which are not a result of selling something. If truck costs are not included in direct labor, they go here.

Operational overhead expenses are the expenses that don't change radically on a month by month basis. The changes normally are due to increases or decreases in truck costs.

Look at this section of the income statement for consistency. For example, if the company's rent is \$1,000 a month and there is a rent expense in January and not one in February, find out what is going on. You know something is wrong because your landlord is not going to let you get away with not paying your rent in February.

Likewise, watch insurance expenses. If the insurance payments are due once per year, the month they are due should not show the entire insurance expense. The insurance expense is an asset, a prepaid expense. Each month one twelfth of the payment is considered an expense to the business.

Overhead expenses are subtracted from gross profit to arrive at net operating profit. This is the "ordinary profit", the profits that are generated from regular sales and expenses that occur on a day-to-day basis.

However, sometimes there is income or expense that is not generated from day-to-day operations. This gets added or subtracted next. What are some things that are other income or other expenses? Other income is usually interest received from investments or gain on sales of assets. If the company sells a truck it might have a gain on the sale of that truck. It happens when on the balance sheet, the value of the truck is \$1,000 and the company sells it for \$2,000. The extra \$1,000 is other income to the company...and yes, it has to pay taxes on that income.

Other expenses are usually losses on sales of assets. If, the company sells that truck for \$500 and its value on the balance sheet is \$1,000, the company has a loss of \$500 which it can take away from profits.

Inventory is a special case. If, at the end of the year, the balance sheet says the company has \$100,000 in inventory and when it is counted, the value is \$90,000, the company has a \$10,000 loss. That \$10,000 goes against net operating profit. This can be a nasty surprise when the owners think that the company is earning a good profit and the inventory is vastly different from what the balance sheet says it should be.

The other case doesn't happen much but I have seen it. If, at the end of the year, the balance sheet says the company has \$100,000 in inventory and when it is counted, the value is \$110,000, the company has a \$10,000 profit. That \$10,000 is added to net operating profit and you pay taxes on the additional \$10,000.

The company might also have discounts that it has taken if a supplier offers a discount for early payment. That discount goes in other income.

Other income and expenses are non-operating revenues or expenses that the company receives. This part of the income statement handles extraordinary events, i.e. not usual income and not usual expenses. They are not the day-to-day operating income and expenses.

After adding other income and subtracting other expenses, the company has net profit before taxes. Then income taxes are subtracted to arrive at net income. This is the figure that is added to retained earnings on the balance sheet.

The income statement formula is straightforward. It is sales minus cost of goods sold equals gross profit. Subtract overhead from gross profit to arrive at net operating profit. Then add other income or subtract other expenses and the result is net profit before taxes. Subtract out income taxes and the bottom line, net profit, is shown.

A final note on gross margin. Remember that gross margin is defined as gross profit divided by sales. The company can have a gross margin and a department can have a gross margin. Both are valid. Both need to be consistent on a month by month basis. I often get asked the question “what is a good gross margin?” The question should really be, “what is a good net profit”? A company could have a great gross margin (from its perspective) and have its overhead costs in percentage terms be higher than its gross margin. For example, if the company’s gross margin is 50% and its overhead costs are 52%, then the company is losing \$0.02 for every \$1.00 that comes in the door.

You should focus on bottom line profitability or net operating profit rather than gross margin. Yes, gross margin is important because if it isn’t consistent each month the company has productivity problems. However, what good is a great gross margin if the company loses money on its sales because its overhead is higher than it needs to be?

The owners of the company set the net profit budget each year. It should be a net profit that is attainable and take into consideration the bonuses and salaries of the owners. Many times contractors leave only 5% in the company at the end of the year but award bonuses in the tens of thousands of dollars to employees and management. This is the prerogative of the owners of the company.

V. Ruth's Rules

Each department of your company should be profitable. Each should report revenues, direct expenses and its fair share of overhead expenses. Each should positively contribute to the company operating profit each month and year. The question that I normally get asked is “how does each department get its fair share of the company’s overhead expenses? That’s what you’ll learn in the next chapter of *Keeping Score...Financial Management for Contractors*.

To properly allocate expenses, you first have to understand “Ruth’s Rules”, three rules that I’ve developed to teach contractors how to price knowing direct costs, overhead costs, and the profit percentage that the company wants to make.

Ruth’s Rules – Overview

Over the years I have seen many hard working contractors who don’t price their jobs or their service so that they make a real profit. They think that they are, but when they get their financial statements they find that they are “working for wages” rather than making a profit or are losing money, even though they are working hard. Use Ruth’s Rules to price your jobs and service so that you can make a profit assuming that there are no callbacks or warranty calls and the jobs take the estimated time and materials to complete them.

Using these rules you can also “what if” to death. For example, you can find out what you need to sell if you raise your overhead by 5%, want to hire a parts runner, or add personnel.

For the purposes of the Ruth’s Rules calculations, I stop at net operating profit because there are always extraordinary things that happen which can affect the bottom line. You could have a great year and give bonuses. You could sell used trucks. You could get interest income from investments. These are dollars that you receive that affect your bottom line. However, they are not revenues and expenses that occur regularly...so they don’t count in the day-to-day transactions which you make a profit on and which you base your pricing on. Yes, they do count at the end of the year. However, they are extraordinary events which should not be taken into consideration when you price jobs.

Ruth’s Rule #1

Ruth’s Rule #1 tells you how to determine the selling price when you know the direct costs for the job.

Ruth’s Rule #1 is:

$$\text{Selling price} = \frac{\text{direct costs}}{1 - \text{Gross margin}}$$

Remember that “1” is 100% and that gross margin is always a percentage. The reason that you divide by 1 – the gross margin has to do with the structure of the profit and loss statement. The first part of the profit and loss statement is sales minus direct costs equals

gross profit. Sales is the total selling price for the job. The sales represent 100% or the total revenues for the job. If sales are 100% and you know the gross margin percentage, to determine the direct cost percentage you have to subtract sales percentage minus the gross margin percentage. So you subtract 100% minus gross margin percent and that's percentage for our direct cost. It's very easy to do.

Gross margin, by definition, is gross profit divided by sales. So, the gross margin is the percentage of sales that you have left after you take out your direct cost percentage. Using simple mathematical formulas, to arrive at the selling price knowing direct cost you have to divide by the direct cost percentage or 1 minus the gross margin.

Let's take a simple example. A service technician spends 2 hours on a job. He uses \$50 worth of materials. His hourly rate is \$15 per hour. You want to achieve a 55% gross margin on all service calls. What price should you charge the customer?

The total cost for the job is $\$15 \times 2$ or \$30 in labor and \$50 in parts. The total cost is \$80. To get the selling price divide \$80 by 45%. You should charge the customer \$177.78.

For those contractors who include labor burden in direct cost, let's refigure the example. Assume that the cost of payroll taxes, health insurance, worker's compensation, etc. for this employee is 33% of his hourly rate. This 33% comes to \$9.90. So, the total cost for the job is \$89.90. If you charge the customer \$177.78 as in the example above, this time

the gross margin is approximately 49.4% rather than 55%. If you want to maintain a 55% gross margin, you charge the customer \$199.78.

These examples show that depending on how you define direct cost, your gross margin can vary from 49% to 55% with the customer being charged the same price. Of course, the overhead percentage is a lot higher with the first example than it is with the second example.

Which is right? Both are. What you charge the customer ultimately depends on what bottom line you try to achieve. If you need a 55% gross margin to achieve a certain percentage net profit, then the price to the customer will vary on what you include in cost of goods sold.

Ruth's Rule #2

Ruth's Rule #2 tells you the selling price or sales volume that you need to break even when you know the department overhead or the company overhead.

Ruth's Rule #2 is:

$$\text{Breakeven Sales} = \frac{\text{overhead}}{\text{GM}}$$

Some of you are probably thinking...wait a minute. Ruth's Rule #1 tells me to divide by one minus the gross margin. Ruth's Rule #2 tells me to divide by the gross margin.

That's true. In Ruth's Rule #1 you know direct cost. In Ruth's Rule #2 you know overhead cost. That's the difference.

Let's take an example. Suppose your salary is \$100,000 and you want to know what the company has to sell to just break even on your salary. When you get your financial statement you see that the company gross margin is 35%. Using Ruth's Rule #2, divide \$100,000 by 35%. You get \$285,714.29. This means that the service technicians, installation crews etc. have to generate \$285,714.29 just to cover your salary.

Let's check our answer using the income statement. Remember the formula for the income statement is sales minus direct cost is gross margin. Gross margin minus overhead is net profit before taxes.

In our example, the sales we have to generate are \$285,714.29. Direct cost is 65% of those sales. (Since we have a 35% gross margin the direct cost has to be 65%). Direct cost is 65% times \$285,714.29 or \$185,714.29. Subtract: \$285,714.29 minus \$185,714.29. The gross profit is \$100,000. Since the overhead (i.e. your salary) is \$100,000 the net profit is zero and you've just broken even.

This rule is very helpful when you want to add an overhead position. For example, if you wanted to hire a warehouse person, this formula lets you know how much additional revenues the company would have to bring in or savings that this person would create when hired. Let's say that you will pay the warehouse person \$10 per hour or \$20,800 per

year (without overtime). If you assume that his benefits cost another 33%, his compensation package totals \$27,664. Let's round this to \$28,000 per year. If this person is also going to be responsible for parts deliveries, add a year's truck cost to the \$28,000. For this example, I'll assume that the person will remain in the warehouse. Let's assume that the company gross margin is 35% as in the example above.

The additional revenues that the company would have to generate or dollars that he would have to save are:

\$28,000 divided by 35% or \$80,000 per year.

Can a warehouse person save \$80,000 per year? Easily. If this person gets the crews' materials ready and the crews spend an additional hour per day on the job rather than searching for parts, the warehouse person pays for himself. If three service technicians can do an extra call per day, then that is an additional \$75,000 in sales (assuming the average service call ticket is \$100 for 50 weeks) so the warehouse person pays for himself. I know of companies with only 5 people...where one of the people is a warehouse/parts runner who pays for himself just in saving time by letting the revenue producing people produce revenues rather than waste time that can't be billed.

Ruth's Rule #3

Ruth's Rule #3 tells you the selling price or the amount of sales that you need to achieve knowing the overhead and a desired net profit margin.

Ruth's Rule #3 is:

$$\text{Sales} = \frac{\text{overhead}}{\text{GM} - \text{P}\%}$$

P% is the percentage of net operating profit you wish to make on the job.

I assume that all of you want to do more than just break even. Ruth's Rule #3 tells you how much you have to sell to achieve a preset net profit with a given amount of overhead and gross margin. Ruth's Rule #3 is used for planning your job, your month, your quarter, or your year. Here's an example:

You are budgeting the service department financials for next year. You see that your gross margin for the service department is 50% and your overhead for the service department for the year is estimated to be \$500,000. To achieve a net profit of 10% in the service department, how much does the service department have to generate?

Using Ruth's Rule #3:

$$\text{Sales} = 500,000 / (.50 - .10) = \$1,250,000.$$

What would happen if you set the goal to increase the service department gross margin to 55%? Using Ruth's Rule #3:

$$\text{Sales} = 500,000 \div (.55 - .10) = \$1,111,111.$$

A 5% increase in gross margin means that the service department has to generate about \$140,000 less to achieve the same profit level...this is the approximate revenues that one technician should generate. So, a five percent increase in gross margin means you need one less technician if the other assumptions are true.

Let's take an example similar to Ruth's Rule #2 examples. Suppose your salary is \$100,000 and you want to know what the company has to sell to earn a 10% profit (rather than just break even) on your salary. When you get your financial statement you see that the company gross margin is 35%. Using Ruth's Rule #3, divide \$100,000 by (35% minus 10%). You get \$400,000 (rather than the previous example's \$285,714.29).

Let's check our answer using the income statement. Remember the formula for the income statement is sales minus direct cost is gross margin. Gross margin minus overhead is net profit before taxes.

In our example, the sales we have to generate are \$400,000. Our direct cost is 65% of those sales. (Since we have a 35% gross margin the direct cost has to be 65%). So our direct cost is 65% times \$400,000 or \$260,000. Subtract: \$400,000 minus \$260,000 is

\$140,000. The gross profit is \$140,000. Since the overhead (i.e. your salary) is \$100,000 the net profit is \$40,000 which is 10% of \$400,000.

Do Exercise #1 on the next page.

Exercise #1: Ruth's Rules

1. If your yellow pages cost \$500 per month and your gross margin is 45%, what is the break even sales revenue that you have to generate to pay for the ad each month?
2. If your yellow pages cost \$500 per month, your gross margin is 45%, and you want a 15% profit. What are the sales revenues that you have to generate to pay for the ad each month?
3. Your salary is \$100,000 per year. Your company gross margin is 25% and you want a 15% net profit. What are the sales revenues that the company has to generate to pay your salary?
4. You want to hire a dispatcher/service coordinator. You will be paying her \$25,000 per year plus benefits (assume they are 30% of her salary). What increase in revenues does the company have to generate to pay her salary if the gross margin of the service department is 50% and you want a 20% net profit before taxes?
5. You want to hire another service technician. His hourly wage is going to be \$25 per hour plus 30% benefits. The gross margin of the service department is 55%. Assuming that he works 2,000 hours per year, what does he have to generate in revenues to pay for himself? (Ignore truck costs).

Exercise #1: Answers

1. If your yellow pages cost \$500 per month and your gross margin is 45%, what is the break even sales revenue that you have to generate to pay for the ad each month?

Ruth's Rule #2:

$$\text{Sales} = \frac{\$500}{45\%} = \$1,111.11$$

2. If your yellow pages cost \$500 per month, your gross margin is 45%, and you want a 15% profit. What are the sales revenues that you have to generate to pay for the ad each month?

Ruth's Rule #3:

$$\text{Sales} = \frac{\$500}{45\% - 15\%} = \$1,666.67$$

3. Your salary is \$100,000 per year. Your company gross margin is 25% and you want a 15% net profit. What are the sales revenues that the company has to generate to pay your salary?

Ruth's Rule #3:

$$\text{Sales} = \frac{\$100,000}{25\% - 15\%} = \$1,000,000$$

4. You want to hire a dispatcher/service coordinator. You will be paying her \$25,000 per year plus benefits (assume they are 30% of her salary). What increase in revenues does the company have to generate to pay her salary if the gross margin of the service department is 50% and you want a 20% net profit before taxes?

Ruth's Rule #3:

Total payments for the dispatcher are \$25,000 plus 30% of \$25,000 = \$32,500

$$\text{Sales} = \frac{\$32,500}{50\% - 20\%} = \$108,333.33$$

5. You want to hire another service technician. His hourly wage is going to be \$25 per hour plus 30% benefits. The gross margin of the service department is 55%. Assuming that he works 2,000 hours per year, what does he have to generate in revenues to pay for himself? (Ignore truck costs).

Ruth's Rule #1:

Yearly cost: $\$25 \times 2000 = \$50,000$ plus 30% of $\$50,000 = \$65,000$

$$\text{Sales} = \frac{\$65,000}{1 - 55\%} = \$144,444.44$$

These are the three rules that I use to calculate selling prices when you know either direct cost and overhead cost and gross margin. The way that I usually work the process for Ruth's Rules numbers 2 and 3 is to look at the percentage of profit that the contractor wants to make. Then, knowing the overhead, determine what the gross margin has to be to achieve a certain level of sales. Next look at the result and see whether it is realistic...or is achievable.

The rules are summarized on the next page. There are many contractors' offices who have put these rules on the wall...they're helpful and a reminder of what you need to charge based on costs.

Spend some time to get familiar with these rules. They will help you price your jobs accurately as well as plan your budgets.

Ruth's Rules

Ruth's Rule #1

If you know the direct cost and the gross margin:

$$\text{Sales} = \frac{\text{direct cost}}{1 - \text{GM}}$$

Ruth's Rule #2

If you know the overhead and the gross margin, sales at **break even** are:

$$\text{Sales} = \frac{\text{Overhead}}{\text{GM}}$$

Ruth's Rule #3

If you know the overhead, gross margin, and profit you want to make:

$$\text{Sales} = \frac{\text{Overhead}}{\text{GM} - \text{P\%}}$$

VI. Departmentalization

Departmentalization is an emotionally charged issue for many managers. It is often the source of many arguments, many discussions, and many disagreements amongst managers. Remember that each department must be self-sufficient, i.e. it earns a profit. It's very easy to figure out the sales for a department, the cost of sales for a department and the gross profit for a department. A fair share of overhead is not as easy to determine.

I've had managers in a room fighting over the number of dollars that they are going to have to pay for a particular person. It gets interesting when they feel a person "isn't worth" what the company is paying for that person. Fair in one manager's mind is not necessarily fair in another manager's mind. So, the issue is, what is a fair allocation of overhead?

Some contractors want to divide overhead by the sales of each department. Allocation of overhead by sales isn't fair. Why? Very simply, if your company has \$1,000,000 in new construction sales and \$1,000,000 in service sales, which takes more overhead? Obviously, the service department. If you decided to utilize the sales method of dividing overhead, each department would get 50% of the overhead which means that the service department wouldn't be getting its fair share and the new construction department would be paying more than its fair share. That's why most companies don't allocate overhead based on sales volume.

Over the years I've realized that overhead is caused by two things: space and people. As a result, I allocate overhead to the departments based on each department's "space cost" and "people cost".

I'll cover space issues, then people issues, and then some exercises so you can see how to apply these overhead allocations to your own company.

Space overhead expenses.

There are five things that cause space expenses: rent, utilities, building maintenance, building taxes, and building insurance. Those are the only space related overhead items. To calculate the space overhead allocations, determine the total amount of productive space used by each department. Productive space is the space occupied by either people or things related to that revenue producing department. For example, the space occupied by the company's receptionist, bookkeeping department, or conference room doesn't count. This space is used by non-revenue producing personnel. Don't get me wrong, these people are important to the survival of the company. However, they aren't producing revenues for the company (they may be tracking them) so the space that these employees occupy doesn't count.

Determine the amount of total productive space or revenue producing space for the company as a whole and determine the amount of space each department occupies. It's very, very easy.

For example, if the company occupies a 5,000 square foot building and of that 5,000 square feet, 1,000 are being used by the service department and 3,000 are being used by the new construction department, then there are a total of 4,000 revenue producing square feet. The new construction department is responsible for $3,000/4,000$ or 75% of the space overhead expenses. The service department is responsible for $1000/4000$ or 25% of the space overhead expenses.

These departments have to produce the revenues to cover the administrative portion of the building (1,000 square feet) since the administrative segment of the company doesn't produce revenues.

If the building rent is \$1,000 per month, then the service department gets a rent expense of \$250 each month and the new construction department gets a rent expense of \$750 each month.

People Overhead Expenses

All other overhead expenses are caused by people. This is less exact than space issues. If things are bought only for one department then that department gets 100% of that expense. For example, service tickets. The new construction department is not going to use service tickets so the service department will pay the entire service ticket printing expenses.

Another example: yellow pages advertising. It's very unlikely that the new construction department would benefit from yellow pages advertising. The departments which benefit split the expense. If a company has a plumbing and HVAC service department, the yellow pages advertising would be split between these two departments, each paying for its advertisements.

Let's look at some personnel issues. For example, take the bookkeeper's salary. If the bookkeeper spends 100% of her time in the service department then the service department will get 100% of her salary. If the bookkeeper splits her time between several departments, then she has to determine how much time she spends on each department's work. Then, allocate her salary according to the time spent in each department. The first time you departmentalize the income statement, the amount of time spent in each department is probably a guess. The following is a method to use to "not guess". The same method can be used to calculate each overhead expense for each department when the exact amount of time or expense is not known.

First, determine the total amount of productive payroll, i.e. field personnel payroll. Next determine the productive payroll for each department. Each department's overhead expense is its percentage of productive payroll.

For example, assume that the total productive payroll in the company is \$100,000. The service department productive payroll is \$50,000, new construction department's productive payroll is \$20,000, and replacement department's productive payroll is

\$30,000. The service department gets \$50,000 divided by \$100,000 or 50% of the people related overhead expenses. The new construction department gets \$20,000 divided by \$100,000 or 20% of the people related overhead expenses. The replacement department gets \$30,000 divided by \$100,000 or 30% of the people related overhead expenses.

Now do Exercise #2: Departmentalization and Overhead Allocation.

Exercise #2: Departmentalization and Overhead Allocation

HVAC Svc Dept: 2,000 sq. ft.
Construction Dept.: 4,000 sq. ft.
Plumbing Dept: 6,000 sq. ft

HVAC Svc. Dept.: \$200,000 in productive payroll
Construction Dept.: \$500,000 in productive payroll
Plumbing Dept.: \$800,000 in productive payroll

1. What are the space and people percentages for each department?
2. What is the total overhead for each department assuming:
 - a. Rent is \$2,000 per month
 - b. Utilities are \$1,000 per month
 - c. Dues and subscriptions are \$300 per month
 - d. Advertising is \$2,000 per month (split equally between HVAC service and plumbing)
 - e. All other overhead is \$12,000 per month
3. Assume the following gross margins:
 - a. HVAC Service: 48%
 - b. Construction: 22%
 - c. Plumbing: 35%
4. What is the break even sales volume that each department must generate?
5. Assuming that the company wants a net profit of 10% in each department, what is the sales volume that each department must generate?
6. What is the overall break even point for the company?
7. What is the overall gross margin for the company?

Exercise #2 – Answers

1. Percentages:

Revenue Producing Space:

HVAC Svc Dept: 2,000 sq. ft.
 Construction Dept.: 4,000 sq. ft.
 Plumbing Dept: 6,000 sq. ft

Total revenue producing space: 12,000 sq. ft.

HVAC Svc Dept: $2,000/12,000 = .17 = 17\%$
 Construction Dept.: $4,000/12,000 = .33 = 33\%$
 Plumbing Dept: $6,000/12,000 = .50 = 50\%$

Revenue Producing Payroll:

HVAC Svc. Dept.: \$200,000 in productive payroll
 Construction Dept.: \$500,000 in productive payroll
 Plumbing Dept.: \$800,000 in productive payroll

Total revenue producing payroll: \$1,500,000

HVAC Svc. Dept.: $\$200,000/\$1,500,000 = .133 = 13.3\%$
 Construction Dept.: $\$500,000/\$1,500,000 = .333 = 33.3\%$
 Plumbing Dept.: $\$800,000/\$1,500,000 = .534 = 53.4\%$

2. What is the total overhead for each department assuming:

	HVAC	Construction	Plumbing	TOTAL
Rent	\$ 340	\$ 660	\$ 1,000	\$ 2,000
Utilities	\$ 170	\$ 330	\$ 500	\$ 1,000
Dues & Subs.	\$ 40	\$ 100	\$ 160	\$ 300
Advertising	\$1,000	\$ 0	\$ 1,000	\$ 2,000
Other	\$1,596	\$ 3,996	\$ 6,408	\$12,000

	HVAC	Construction	Plumbing	
Total OH Cost	\$ 3,146	\$ 5,086	\$ 9,068	\$17,300

3. Assume the following gross margins:
 - a. HVAC Service: 48%
 - b. Construction: 22%
 - c. Plumbing: 35%
4. What is the break even sales volume that each department must generate?

	HVAC	Construction	Plumbing
Total OH Cost	\$ 3,146	\$ 5,086	\$ 9,068
Gross Margin (GM)	48%	22%	35%

To calculate break even, use Ruth's Rule #2: OH/GM

Break even	\$ 6,554	\$ 23,118	\$ 25,909
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5. Assuming that the company wants a net profit of 10% in each department, what is the sales volume that each department must generate?

Use Ruth's Rule #3: $\frac{OH}{GM - P\%}$

Profit	\$ 8,279	\$42,383	\$36,272
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6. What is the overall break even point for the company?

Total Overhead Cost = \$17,000

Total Sales at break even = \$ 6,554 + \$23,118 + \$25,909 = \$ 55,581

7. What is the overall gross margin for the company?

Use Ruth's Rule #2

$55,581 = 17,000/GM$

$GM = .306 = 30.6\%$

Exercise #2 – Overhead Allocation - Explanation

Let's assume the company has three departments: service, construction, and plumbing. The service department occupies 2,000 square feet, the construction department occupies 4,000 square feet and the plumbing department occupies 6,000 square feet.

Let's look at the people issue: The service department has \$200,000 in payroll, construction has \$500,000 and plumbing has \$800,000 in payroll. The first thing to determine is the percentages for people related overhead and space related overhead in this example.

Here's how it got divided: For space issues, the service department gets 2,000 out of 12,000 or 17%, the construction department gets 4,000 out of 12,000 or 33%, and the plumbing department get 6,000 out of 12,000 or 50% of the space related expenses. Remember that there are five space related expenses: building rent, building utilities, building maintenance and repairs, building taxes, and building insurance. Everything else is a people oriented expense. By this example, the service department gets 200,000 out of 1,500,000 or 13.3% of the people expenses, construction gets 500,000 out of 1,500,000 or 33.3%, and plumbing gets 800,000 out of 1,500,000 or 54.4% of all the people related overhead items.

Under question #2, you spread the expenses per department. The first thing to determine is whether the expense is a people or a space expense. Rent and utilities are space expenses. The others are people expenses in the exercise.

The rent for the building is \$2,000 and based on our example the service department gets \$340, construction gets \$660 and plumbing gets \$1000.00. Spread each expense by the percentage of people or space that the department should receive. That's fair, based on the usage and based on the number of people that they have. So you'll end up with a spreadsheet as shown in number 2.

Then determine the break even for each department given specific, known gross margins. In Exercise #2, the service department gross margin is 48%, installation gross margin is 22%, and plumbing gross margin is 35%. To determine the break-even point for each department use Ruth's Rule #2 which is sales is equal to overhead divided by gross margin.

HVAC Service has \$3,146 in overhead costs. Construction has \$5,086.00 and plumbing has \$9,068. What is the break-even cost given those numbers and the gross margin?

Take the HVAC Service overhead of \$3,146 and divide by .48, the result is \$6,554. The other departments' breakevens are \$23,118 for new construction and \$25,909 for plumbing.

I would assume that you like I are not in business for practice (i.e. to make a loss) and that you want to earn a profit. Question 5 asks about profit: What are the sales necessary to achieve a 10% profit for each of those overhead items assuming the gross margins remain exactly the same? Use Ruth's Rule #3 to determine the answers.

To make a profit, HVAC Service sales need to be \$8,279, construction needs to be \$42,383 and plumbing needs to be \$36,272. There is a big difference between earning a profit and just breaking even. In slower times of the year when you just want to cover your overhead and you want to keep your field workers working you can make a choice. The minimum to charge the customer is the break even sales. You know how low you can go on job pricing. You can increase or decrease your prices depending upon how much profit you want to earn. Using this method, you'll know what gross margins you have to have, what sales you have to have based on your overhead costs and you'll know when you can take a job and you can't take a job. It just takes a little bit of practice.

In Question 6 I asked what is the overall break even for the company? You need to know what the break even is for each one of the departments and you need to know the break even for the company and the our overall company gross margin. Calculate these numbers using Ruth's Rule #2. Take the department break even sales: \$6,554 for the service department, \$23,118 for the construction department and \$25,909 for the plumbing department. This gives us a total break even sales of \$55,581.

Next you determine the overall gross margin for the company. Take Ruth's Rule #2 which is sales is equal to overhead divided by gross margin. You know that break-even sales are \$55,581 and the total overhead is \$17,300. To calculate gross margin: \$55,581 is equal to \$17,300 divided by X where X equals the gross margin. Gross margin is 30.6%.

If you use the overall company gross margin to calculate pricing you would get a wrong price since none of the department gross margins are equal to the company gross margin. However, in this example, the price would be close in the plumbing department.

Realize that the overall company gross margin is a compilation of the gross margins of the different departments. If you are looking for overall company numbers then use an overall company gross margin. If you are looking for departmental numbers use the individual department gross margin.

Background work for departmentalization – Getting Started

The exercises are good for examples. Here's how you do it for your company. First, take your year end W-2's which list the total payroll for each employee. Separate the employees into the different departments. Total the payroll for each department. Remember that you are only interested in productive payroll. If you have sales people, include their salaries in the department they sell for. Also, if some of the field employees work in two departments, estimate the amount of time that he spends in each of the

departments and allocate his payroll accordingly. For example, if one of your service technicians made \$50,000 last year and he spent 20% of his time in replacement and 80% of his time in service then 80% of \$50,000 or \$40,000 would go in service and 20% of \$50,000 or \$10,00 would go into replacement.

Once you have all of the departments' payroll, then add all the departments together to determine the total productive payroll. Each department gets a percentage based on its payroll divided by the total payroll.

Estimate the space requirements for each department. Each department receives its percentage based on the total productive space.

Then, set up a spreadsheet to do the calculations based on the percentages. Each overhead expense item should be classified as a space or a people expense and the proper percentage applied. It takes several hours to set this up. However, once it's done, then every month all your bookkeeper has to do is to enter the total overhead expense number for each overhead item and the spread sheet automatically calculates each department's fair share. You can see what the overhead is for each of the departments.

Generally, the first time you do this allocation, your estimates will be just that, estimates. In a few months everyone will be conscious of the amount of time spent in each department and the percentages will get more accurate.

Department managers must realize that as their department grows bigger it's going to get a bigger share of the overhead simply because of its growth. I've worked with many companies who initially have small service departments and I've helped them grow. Initially the service department overhead percentages are small and the actual overhead expenses are little compared to the other departments. Once the service department grows the overhead percentage gets bigger and finally the service department says to me "I don't want to pay that much overhead". Unfortunately increasing overhead is a fact of life when a department grows.

VII. Financial Ratios

Overview

Financial ratios, derived from your balance sheet and income statement, tell you what is going on in your company. For them to be accurate, there has to be accurate information going in. If you have garbage going into your financial statements, you are going to have garbage coming out of your financial statements. As a result, you're not going to get accurate financial ratios which means you won't be able to rely on or properly act on the ratio results.

First and foremost, you have to match apples and apples. What I mean by that is that if you have a sale in one month you need to have the expenses of that sale in the same month. Apples and apples. If you have sales in one month and expenses in another month there will be one month that has great profits because the expenses are not included. The next month will have bad profits because there are expenses and no sales to match those expenses. You must match your sales with expenses against those sales in the same month.

Next make sure that all of the overhead expense is in the right month. If rent is \$1,000 a month, every month gets its \$1,000 of rent expense. If, for example, January gets \$1,000, February gets zero rent expense and March gets \$2,000 rent expense, then the income statements for February and March are wrong. You'll be more profitable in February because there was no rent expense recorded.

Look at your financial statements in detail each month and make sure that you have accurate information going in. It's the only way that you'll have accurate information going out.

There are 10 ratios that I use for analyzing contracting companies' financial statements. These are ratios that will help you operate your business on a day-to-day basis. They are not necessarily what a banker is used to seeing or expects. My answer to a banker is this: If these ratios are within acceptable limits for our industry any ratio that the banker wants is going to be within acceptable limits for our industry. So if a banker wants you to calculate a return on assets or return on investments you can very easily do those ratio calculations in addition to these 10 ratios.

These 10 ratios will let you know instantly what is going on with your business. You'll know whether your employees are productive. You'll know if you have or may soon have a cash flow problem. You'll know if you're using your inventory properly. You'll be able to tell whether you have too much debt. The 10 ratios are used to determine the health of your company. It is important to compute these financial ratios on a monthly basis because the trends are as important as the specific monthly figures. You can help your company avert a potential crisis by examining these ratios on a month to month basis.

Current Ratio: is a measure of liquidity, i.e. how easily can the company pay its bills?

You calculate this ratio by using figures from the balance sheet. The ratio is:

$$\frac{\text{Current Assets}}{\text{Current Liabilities}}$$

The current ratio answers the question, “Is your business liquid enough so that you can pay your bills on a timely basis?” Current assets are things that are cash or turned into cash within a year and current liabilities are things that you have to pay within a year. Do not include owner receivables or payables which will not be repaid within a year.

For our industry the current ratio should be greater than 1.8. Assume that you calculate the ratio and it is 1.95. Is that good or bad? Well, it actually depends. If you take the standard industry ratio acceptable area, it looks good. However, if the month before you had a current ratio of 2.05 and it went down to 1.95 this month, that’s not good because the ratio is going the wrong way. Or, if the previous month was 1.65 and it went to 1.95 this month, you are doing well. You are going in the right direction.

With any of these ratios you have to look at the trend. A single figure won’t tell you too much. Are the ratios going the right way or are the ratios going the wrong way?

If you have a decreasing current ratio, i.e. the current ratio is going down, this month it was 1.9 and next month it is 1.8, etc., watch out. This is the first indication of lessening profitability. If the current ratio is decreasing, 90 times out of 100 that means your profitability is decreasing. You are likely to have a higher percentage of expenses as

compared to revenues (i.e. you bid 12 hours on a job and it took 16 or a motor was left off a bid, etc.) which means higher current liabilities as compared to current assets.

The other reason you might have a decreasing current ratio is you bought an asset. For example, if you paid cash for a truck you've decreased cash which is a current asset item and you created a long term asset, i.e. bought a vehicle with the cash. So your cash decreased and your long term assets increased. When your cash decreases and your current liabilities stay the same your current ratio is going to go down. The same thing would happen if you purchased a lot of inventory or you purchased a lot of equipment, office furniture, or a building. You are converting current assets into long-term assets, which will make your current ratio go down.

On a positive note if your current ratio is increasing then you are becoming more profitable. If your current ratio is staying about the same your profitability is probably staying about the same. Another reason current ratio might increase might be a sale of assets. If you sold a truck you are transferring a long-term asset, i.e. a truck, to a current asset, i.e. cash. So your current ratio would go up in that case. However, the main reason most of the time that current ratio increases means that profitability is increasing.

You want to see your current ratio increasing or staying constant.

Acid Test or Quick Ratio: The next measure of liquidity is called the acid test or the quick ratio. Bankers have said, “contractors have too much money tied up in inventory”. Seeing contractors’ shops over the years I can definitely agree with that. Bankers want to see what happens to the current ratio when inventory is taken out of the equation, i.e. can the company still pay its bills?

You calculate this ratio by using figures from the balance sheet. It is calculated:

$$\frac{\text{Current Assets} - \text{Inventory}}{\text{Current Liabilities}}$$

This ratio should be 0.9 or better. Like the current ratio, if you have a decreasing acid test you are not as profitable or you bought some assets. If you have an increasing acid test you are more profitable or you sold some assets. Generally the acid test follows along with your current ratio. If your current ratio is changing and your acid test is staying the same from month to month, or vice versa, this means that your inventory is changing. If your current ratio is the same and the acid test is decreasing then you are trading cash for inventory. You have to be very careful. Inventory is a bet. Managing inventory is difficult, however, properly managed it will decrease your risk.

Current ratio to acid test

Next look at the relationship between the current ratio and the acid test. If the ratio is greater than 2.0 (for example if your current ratio is 3 and your acid test is 1) then you have too much money tied up in inventory. The only time inventory might be at this high

level is at the beginning of the busy season. If a stocking order isn't the reason for the ratio outside the acceptable limits, then the inventory figure is calculated wrong (when was the last time the company took a physical inventory?) or the company must reduce its inventory level and use parts in the warehouse rather than going to the supply house when parts are needed.

If the inventory is outdated, then it should be written off (your accountant can help) to reflect the actual inventory levels.

Again remember to include everything that is current assets in the current asset total and everything that is current liabilities in the current liabilities total (see current ratio for a detailed explanation).

Accounts Receivable to Accounts Payable (AR/AP): This ratio is also a measure of liquidity. You calculate this ratio by looking at figures from the balance sheet. It is calculated:

$$\frac{\text{Trade Receivables}}{\text{Trade Payables}}$$

This number should be 2 or greater. Divide your trade receivables by your trade payables. Do not include employee receivables or payables nor owner's receivables or payables. Only the people or companies who owe your company, i.e. your customers and the people or companies your company owes money to, i.e. your vendors and suppliers. If more than 50% of your business is on a COD basis, take accounts receivables plus cash

and divide that by accounts payable. Here is the reason: if you just take receivables divided by payables and most of your business is cash, your company has almost no receivables and “normal” payables. The division would make the ratio near zero. It wouldn't be telling the right story since your company has received cash for the work that it has done well in advance of the time that it has to pay the payables for the work that was done. For COD companies when cash is included in the ratio, the ratio becomes “normal” again and realistic.

COD is a great way to manage cash. However, it is not practical for most commercial work.

So, what does the accounts receivable to accounts payable ratio mean? If you have an increasing ratio you have more billed jobs, more COD jobs and if cash is not included in the accounts receivable calculation, or you have less collections. Check out why the ratio is increasing. Less collections is not good. The receivable days ratio, discussed later in this chapter, helps you determine if you have less collections.

If you have a decreasing accounts receivable to accounts payable you have less billing jobs, less COD, or you have more collections. In this case I hope that you have more collections, not less billing, and less COD work.

Debt to Equity: The next two ratios look at the amount of debt that the company is carrying. Calculate this ratio by looking at the balance sheet. It is calculated:

$$\frac{\text{Total Liabilities}}{\text{Total Equity}}$$

The debt is total liabilities; both current liabilities and long-term liabilities. Divide total liabilities by the equity or the total net worth of the business. The result should be greater than zero but as low as possible. This might seem to be a vague type answer. However, I say this because if your current ratio is in line and your acid test is in line and your long term debt to equity is in line (which I'll discuss next) and your percentage compensation is in line (which I'll discuss below), the value of your debt to equity ratio is not that important because you can service the debt and you can pay your bills. So, regard this ratio as a warning ratio. It should not "jump up" or increase rapidly. It should be consistent or decreasing. If it is increasing, that is a warning sign that the company isn't paying its bills, or has incurred too much debt. If you have a decreasing debt to equity ratio profitability is increasing and the company is paying off debt. If the debt to equity ratio is increasing, the company has decreased profitability and is incurring more debt. Watch this ratio not for the numbers specifically but whether it is increasing or decreasing. That's really the key to finding out what is going on with this ratio.

A final note about the debt to equity ratio. It should definitely not be negative!!!!

If the ratio is negative it means that the net worth of the company is negative. If the company is seeking a bank loan, very few bankers will extend loans when a company has

a negative net worth unless there are extenuating circumstances and there are assets that the company can pledge. A negative net worth means that the company is probably in trouble because it has been losing money for a long period of time.

Long Term Debt to Equity: This financial ratio is also a measure of capitalization.

You calculate this ratio by looking at the balance sheet. It is calculated:

$$\frac{\text{Long Term Liabilities}}{\text{Total Equity}}$$

Again, make sure that items that should be in long term liabilities are there. If there are bank loans and the current portion of these loans is included, then this ratio will be overstated.

This ratio should be greater than zero and less than one. It should definitely not be negative!!!! (See the explanation for Debt to Equity).

The long-term debt to equity ratio looks at long-term liabilities divided by equity. It tells whether the company is burdened with huge amounts of long term debts which will be paid in many years. You want this amount of debt to be as low as possible.

If you have a decreasing long term debt to equity (which is good) your company will have either increasing profitability or be paying off some of its long term debts. If this

ratio is increasing then this is a warning sign. The company has decreasing profitability and will be incurring more debt.

Percentage Compensation: This ratio is my favorite ratio. Why? It tells whether your company is productive or not. The ratio is calculated:

$$\frac{\text{Total payroll plus payroll taxes}}{\text{sales}}$$

Payroll includes all payroll: field labor, office labor, owner's salaries, etc. If your company uses subcontract labor, this should be included as well. Payroll taxes include FICA, Medicare, and state and Federal unemployment taxes. It does not include health insurance, 401k or bonuses.

This is the only ratio that can be calculated by department to see if each department is productive. If you do it by department, it assumes that you have departmentalized the labor overhead and each department is getting its fair share. In addition, if you are calculating this ratio at the end of the year, calculate it on the payroll for normal operations. Do not include bonuses in the calculations.

For a service and replacement business the percentage compensation ratio should be approximately 30% or less. For new construction businesses this ratio should be 20% or less. For service companies the ratio should be 40% or less.

If this number exceeds 40%, you have a productivity problem in most cases. What it means is for every dollar in sales that the company brings in the door, \$.40 of that dollar went to pay payroll. This number might exceed 40% in a slower time of year and sometimes in an extremely busy time of year. Why? Either the company has more unapplied time or more overtime.

In a very, very busy time of the year there is a lot of overtime and in many cases you can't charge the customer an overtime rate. As a result, the percentage compensation ratio increases. Yes, you can be busy and earn less profits in the busy times of the year.

Sometimes unusual situations occur. Several years ago a contractor experienced a month where no heating or air conditioning was needed. Revenues for that month were extremely low. The company's percentage compensation was 103% which means he paid out \$1.03 for every dollar he took in the door that month. So he paid out more in compensation than he actually did in revenues that month. It never happened again. Only in rare occasions will this ever happen. During these extremely slow times you shouldn't fire your field employees and you shouldn't fire your overhead people since they will be needed when it gets busy again. This is the time to use the "rainy day cash accounts" with money you've saved when it was busier.

So, the reason I like this ratio so much is I can find out whether a company is productive or not just by this one ratio. If the percentage compensation is decreasing it's going the right way. The company has less unapplied time or less overtime (or been able to bill

most of the overtime). Company sales are increasing as compared to labor expense. It might mean that revenues per service ticket are increasing, the field employees are spending more time on the job rather than driving to the job, or the company is able to bill out more hours for every hour that employees are charging the company (i.e. the service technician is charging the company 8 hours and it can bill the customer 8 hours).

Receivable Turns: The next two ratios are receivable turns and receivable days. I look at these two ratios together because receivable turns don't mean too much to me in an intuitive sense. I can "see" receivable days. I know that the receivable days are the number of days between the time a contractor sends out an invoice and receives payment for that invoice.

These ratios measure how efficiently the company keeps track of its receivables. The turns are calculated on annual sales. You calculate this ratio by using both the income statement and the balance sheet. It is calculated:

$$\frac{\text{Annualized Sales}}{\text{Accounts Receivable}}$$

To annualize sales take the year to date sales times 12 divided by the month of the fiscal year that you are in. So for example, if annualized sales are \$100,000 and the company is in month 5, multiply \$100,000 times 12 and divide that by 5. Then divide that number by trade accounts receivable.

This figure should be 8 or greater. Anything less than six means that the company has a receivable problem. You must address this issue and work towards getting receivables within 45 days.

Like the accounts receivable to accounts payable ratio, if more than 50% of the revenues are COD revenues, then use accounts receivable plus cash as the divisor.

Now let's calculate receivable days.

Receivable Days: This figure also measures how efficiently the company keeps track of its receivables. The days are calculated from the receivable turns figure. It is calculated:

$$\frac{365}{\text{Receivable Turns}}$$

This figure should be less than 45 days. So, turns should be 8 or higher. What that really means is receivable days should be 45 days or less. Receivable days are simply 365 divided by receivable turns. And what that means is simply when your company sends out an invoice to Company ABC it takes 45 days, on average, to receive a check for payment from the date the invoice was sent. If your company has mainly COD revenues, this ratio will be less than 30 days. Even for companies who perform mainly commercial rather than residential work, I like to see this ratio under 45 days; retainage excluded. With commercial customers sometimes you have to be a squeaky wheel: you have to set up how you get paid, the format for submitting invoices, who handles the accounting for

your customers and, when you don't get that check on that 31st day who you need to talk to.

If receivable days are increasing that means more billing, less COD and more collections activity is needed.

On the other hand, if the ratio is decreasing, there is less billing, more COD, or more collections activities. Try to maintain receivable days under 45 days and if the company has mainly COD revenues, under 30 days.

The question that often comes up for commercial companies is retainage. I don't include that in normal receivables calculation. Calculate the ratio with trade receivables divided by the trade payables.

Inventory turns: The last two ratios are inventory turns and inventory days. Like receivable turns, I rely on the "turns" to get the "days". Inventory days means how much time is there between the time a part is purchased to the time it is used on a job.

Inventory turns are calculated on annualized costs. Calculate this ratio by using both the income statement and the balance sheet. It is calculated:

$$\frac{\text{Annualized Cost of Goods Sold}}{\text{Inventory}}$$

It should be 8 or higher. I calculate the ratio on cost of goods sold rather than just material costs. The reason is for the construction industry labor is an integral factor in inventory usage. I know of no company who can install or service without labor expense. That's the reason I use annualized cost of sales to calculate this ratio.

To annualize cost of goods sold take the year to date cost of goods sold times 12 divided by the month of the fiscal year you are in. So if you're in month 7, take the year to date cost of goods sold times 12 and divide by 7 and that's the number to divide the inventory into.

Can seasonality affect this ratio? Perhaps. My feeling is that since you are annualizing the sales or cost of sales, then the annualization is not seasonal. The important thing is to look at the trends and see what is happening with the ratios. The ratios might be higher after a spring stocking order. However, you'll notice this year after year and come to expect it.

Let's look at inventory days.

Inventory Days: This financial ratio measures how long an average piece of inventory stays in the shop before it is used. You calculate this ratio from the inventory turn number. It is calculated:

$$\frac{365}{\text{Inventory Turns}}$$

This figure should be 45 days or less.

If inventory days are increasing, this is a warning sign. There is more purchasing, less usage, or perhaps stocking orders issues.

Remember that inventory is a bet. Don't stock more than you think you can reasonably sell. Be very wise, be thoughtful in how you purchase pre-season inventory. You are betting your hard earned dollars that you will be able to sell it. I have seen a lot of bad debt over the years with obsolete inventory. Inventory is a bet, use it wisely.

If you have decreasing inventory days, you have less purchasing and more usage. That's exactly what you want. You want the lowest reasonable inventory levels. Obviously you don't want someone running to the parts house every 5 minutes. You need a reasonable level of inventory that you can turn or that you can use in a reasonable amount of time.

Receivable days to Inventory days:

The next ratio to watch is the receivable days to inventory days. Receivable days should always be greater than inventory days. If you have 30 days of receivables and 60 days of inventory you have twice as much inventory as you need. You can drop that down to 30 days and save a lot of cash.

If these figures are out of line then it is also possible that the inventory figure is overstated (i.e. when was the last physical inventory taken?) or the company has parts that are unusable. In either of these cases, the unusable inventory should be written off or a physical inventory should be taken to determine the true inventory level.

Let's review. The more profitable you are the better your ratios will be. The more productive you are the better your ratios will be. The better you use inventory the better your ratios will be. What I strongly suggest is to calculate these ratios every month when you receive your financial statements.

You can set up a spreadsheet to do them automatically or you can do them by hand. I actually prefer to do them by hand because it forces me to go through the entire financial statements and look at everything. If it is done on a computer and presented to you, you are less likely to look at the individual pages on your financial statements. The ratios don't take a long time to calculate. It should take you no more than 15 to 20 minutes once a month. And it is worth going through the numbers on a case by case, line by line basis and make sure that you get the information that you need. If you find that your ratios are going the wrong way, stop and find out what's going on immediately. You'll be able to solve some minor issues before they become major crises. And, that is the goal of financial ratios.

VIII. Cash Flow

Cash is the lifeblood of your business. Cash is critical. Without cash you can't pay payroll; you can't keep the doors open. Without it you really don't have a business. A cash flow statement tracks cash in your business.

A cash flow statement is simply the picture of flow of cash through your business. Visualize a water tank. There is a certain level of water in the tank. The spigot adds water to the tank and the drain takes water out of the tank. The spigot is cash inputs and the drain is cash outflows.

At the beginning of the month there is a certain level of water in the tank, i.e. a certain dollar amount of cash in the bank. During the month you add to the tank of money and drain money from the tank. At the end of the month there is a certain level in the tank which is probably different from the level that was there at the beginning of the month.

You add to the tank with cash inputs and the level rises. You open the drain on the bottom to write the checks for payroll, rent, utility bills, etc. and the level in the tank drops.

The cash flow statement takes beginning cash on a certain day, and that's equivalent to the initial level of the water in the tank. You add to it by turning the spigot on, i.e. through collections. You decrease the level in the tank by opening the drain, i.e.

disbursements. At the end of the month shut the spigot and the drain and measure the level. That is the ending cash for the month and the beginning cash for the next month. We don't get to a level of zero. If you have a negative level or a zero level the bank doesn't allow you to write checks. You've got to have a positive cash balance, i.e. some water in the tank, to allow checks to be written.

With the tank analogy, let's look at each component. Beginning cash is what you are starting with. It's your petty cash, it's the cash in all your operating checking accounts, it's the cash that's in your payroll checking account if you have one, and it's money market funds. It is not any stock investments; it's not any long-term investments. It's cash, it's what you're using to cover checks you've written.

Input. Collections on sales. Notice it's not the sale itself. It is the collection, it's Ms. Jones' check. It's Company ABC writing you a check. It's a service technician collecting a check on a job or a service technician getting a MasterCard/Visa or American Express credit card to pay for a service call. It is collections on sales. It is not the sale itself.

Other inputs might include investment income or borrowing from the bank on a line of credit or to purchase an asset. There might be an investment in the business (i.e. an owner made a loan to the company or sold additional stock). And, there might be a sale of an asset to get cash.

Inputs are cash that the company receives.

Disbursements are cash going out of the company. They are the drains on the company.

Disbursements are the checks for payroll, loan payments, purchases of assets, or payment of overhead expenses.

Ending cash is just simply beginning cash, plus inputs, minus disbursements. Ending cash must be positive (i.e. there must be water left in the tank). Without enough cash you need to decide who isn't getting paid. And, sometimes those are the tough decisions.

Take a look at the tank of water. You have a certain amount of water in it. You turn the spigot on (collections on sales, loans we take out, investment income). You open the drain and out goes payroll, accounts payable payments, loan payments, etc. Level up, level down, level up, level down. There needs to be some water in the tank, i.e. cash flow must remain positive with all of the income and outgo. You need water left in the tank when you close the spigots and the drains at the end of the month. Beginning cash plus cash input, minus our disbursements is ending cash. That is a cash flow statement.

Now, how do you use them? You can use them yearly, monthly or weekly. A yearly cash flow statement doesn't do too much for you because, unless you've got a crystal ball, you're not going to be able to predict on January 1st the amount of cash you have on December 31st with much accuracy.

I like weekly cash flow statements. They review what has happened during the current week and plan cash needs for the coming week.

The weekly cash flow report forces the company to be current (up to date with entries) for receivables and payables entries each week. This makes it easier to close a month and produce monthly financial statements.

A sample weekly cash flow report is shown in Figure 3. The weekly cash flow statement starts with beginning cash, adds collections for the week to get a total beginning cash. Then disbursements are subtracted to get an ending cash for the week. Then I take it one step further: planning for the following week.

Estimate receivables that are going to come in, payables and loan payments that must be paid, and what payroll will be. Then take ending cash for this week and subtract out payroll for next week, disbursements for next week, and add to it expected collections for next week. The end result should be a positive number. If it's not, time must be spent on collections or deciding who isn't going to get paid.

Do these statements on Friday afternoons. And, if that number is negative, i.e. you need more cash next week, it's a lot easier to have a week to collect that cash than that bookkeeper knocking on your door saying "we don't have enough to make payroll" on Thursday and payroll is due on Friday.

WEEKLY CASH REPORT

Week of _____ Prepared by _____

Cash on hand at the beginning of the week:

Petty Cash	\$ _____
Checking account #1	\$ _____
Checking account #2:	\$ _____
Payroll account	\$ _____
Money Market	\$ _____
Other savings	\$ _____

Total beginning cash \$ _____

Cash Collected	\$ _____
Credit card payments Collected	\$ _____
Accounts Receivable Collected	\$ _____
Other Infusions (loans etc.)	\$ _____

TOTAL AVAILABLE CASH FOR THE WEEK \$ _____

Disbursements:

Payroll	\$ _____
Accounts Payable	\$ _____
Loan payments	\$ _____
Other	\$ _____

Total Disbursements \$ _____

ENDING CASH FOR WEEK \$ _____

Estimated requirements for next week:

Accounts receivable to be collected :	\$ _____
Payroll	\$ _____
Accounts payable to be paid	\$ _____
Loan payments due	\$ _____

TOTAL ESTIMATED CASH SURPLUS (NEEDS) NEXT WEEK \$ _____

The weekly cash flow reports don't take more than 15 minutes to do once the company's payables and receivables are up to date. The first one takes a little bit longer. However, once you do your first report all subsequent reports become easier. Your ending cash for this week is your beginning cash for next week. All your bookkeeper has to do is total deposits, total disbursements, and make sure that payables and receivables are up to date so she can estimate what will come in and what needs to be paid next week.

IX. Watch Your Cash

I've been working with contractors for almost 20 years now and one of the most difficult things I ever had to do was to tell two owners of a three partner company that the third partner was embezzling about \$50,000 a year out of the company. And, quite frankly, I quit at \$50,000...he might have been embezzling more.

This section of *Keeping Score...Financial Management for Contractors* describes systems you need to put in place to keep the honest people honest. I believe that most employees are honest and wouldn't dream of stealing. However, if some crisis occurs in their life and they are not thinking rationally, if the temptation is there and they find it is easy to do the first time, they'll start stealing. This is true of field labor who steal inventory and office labor who steal cash.

On the other hand, there are those who come to your business with the intent of "getting something for nothing." A very wise business person once told me, "the job of a good embezzler is to become the trusted bookkeeper".

How do you keep your field labor from stealing inventory and tools? The warehouse is locked up. You do not run a "warehouse supermarket". A "warehouse supermarket" is a warehouse where employees have free access and pick and choose the materials they "might need" for a job.

A warehouse person records what enters the warehouse through shipments and what leaves for jobs. Jobs are pulled from material lists and the materials for that job are placed in a specific section of the warehouse. Tools are signed out and tracked on jobs. They are stenciled with the company's name on them.

From a service perspective, trucks are inventoried and there is a standard inventory on each truck. Different trucks can have different inventories depending on the type of work that employee does. Technicians are responsible for the parts on their trucks. Parts are replaced from invoices. Service technicians do not go to the parts house except in cases of emergency. Track service ticket numbers. Each technician is assigned a certain group of numbers. If you don't get the tickets back, even the damaged ones, find out what happened to them. (This is also a good way to ensure that all work is billed and that customers are not waiting for a part to complete a job).

Whoever goes to the supply houses purchases all materials on a purchase order. Each job gets its own purchase order. Materials bought for stock get their own purchase order. Tools get their own purchase order.

Perhaps the greatest activity is to educate the field labor about inventory costs. Describe what a \$10,000 inventory loss means. This number is not so large that they can't relate to it. Break down the \$10,000 into a per day, per person (or per crew) expense. For example: To make the math easy, use 50 weeks rather than 52 weeks. \$10,000 divided into 50 weeks is \$200 per week or \$40 per day. If there are five crews (or five

technicians) who use inventory that is \$8 per day. Is it easy to leave \$8 per day of inventory on a job, damage \$8 per day of inventory, or lose \$8 per day? Of course.

A physical inventory count is done at least once per year at the end of the fiscal year. Many companies perform two counts per year. Others spot check inventory each month. The message is clear to all employees that inventory is tracked and watched. When there are discrepancies, these discrepancies are investigated and dealt with.

What about the cash side? If the temptation is there, i.e. the systems are not in place that make it difficult to steal, somebody is going to take your hard earned cash. They might be having a problem at home. We had one situation where a bookkeeper had been at a contracting firm for several years. She was, to all appearances, a good bookkeeper. The bookkeeper was going through a divorce. Her lawyer said, "I need \$3,000 by next week". She didn't have \$3,000 so what did she do? She wrote a check out of the company and forged the owner's signature. In normal times she never would have done that. However, she was under stress and it was easy for her to do. Nobody looked at the bank statements. She knew that she could very easily pull the check she wrote herself and destroy it since no one ever looked at the bank statements other than her. Luckily the bank saw it and called the owner of the company. That's how they caught her.

When the owner went to the bookkeeper he said, "I would have loaned you the \$3,000, and all you had to do was ask." But instead there were no systems in place and she

thought she could get away with it. She wasn't thinking correctly being under stress. I promise you now that systems are in place with that company.

Here are 11 things that you need to put into place to make sure that you keep the honest people honest and keep the hard earned cash that you earned over the period that you've been in business.

1. You must have timely financial statements. If a bookkeeper can't get you timely, accurate financial statements, this is the first clue that either she is incompetent or may be trying to hide something. There can be many excuses. If the person can't give you timely financial statements, the person shouldn't be working at your company.

You have to review the statements and calculate the financial ratios each month. Look at them; make sure the balance sheet balances. If something doesn't look right question it. I don't expect owners to become CPA's and bookkeepers but I expect that owners know enough to see when "something doesn't look right" and question the statements.

2. You must have weekly cash flow reports. Use the form in this manual. It allows you to track your cash on a weekly basis. It also gives you history when you have completed these forms for over a year. You can also watch the amount of cash and credit card payments that are made each week. One person stole all of the cash that came into the business....it wasn't a lot so the cash wasn't missed until the owner one day noticed cash that he knew a customer had paid a bill with wasn't on the deposit slip for the bank.

The systems weren't in place, the cash went away and it was never reported since there wasn't a weekly cash flow report. Now the owner has it and sees the work that is paid by cash.

If you get cash as payment for work, make sure that cash is recorded on the weekly cash flow reports.

Weekly cash flow reports tell you a lot of information in addition to the amount of cash coming into the business. Use them. Keep your eyes open and spend the 15-20 minutes each week it takes to make sure that you keep the hard earned cash you are generating for your use.

3. The person balancing the checkbook does not sign checks. If a bookkeeper can sign a check legally and balance the checkbook, the temptation to write a check to herself is great since no one checks the cancelled checks on the bank statement. When you receive your bank statement, rarely do you get back all of the cancelled checks that were written in a month. When you get your checks at home even you never get all your checks back. This is normal to you and you don't think of checking. You just think, "the missing check numbers will be in next month's statement". You almost never check the statement next month.

The person balancing the checkbook does not sign checks. Now, what if it's your wife who balances the bank statement? Do you trust your wife? If the answer is yes, then

your wife can sign checks and balance the checkbook too. If your bookkeeper is not your wife, the bookkeeper does not sign checks.

4. There are no signature stamps. They are too easy to steal. If your company requires two signatures on checks over a certain dollar amount, they both must be real signatures. No stamps. It's too easy to steal with one signature and a stamp. It's too easy to steal a check, stamp your signature on it and cash it.

5. Limit access to scanners or don't have any scanners in your business. Here's why: A very creative bookkeeper scanned in a payroll check, edited out the signature and put it on a laser check. \$96,000 later they caught her. The bank said "that's your signature" and it was.

6. Lock up your checks. Some of the contractors I've worked with have had situations where somebody walked into their office, stole a couple of checks, and quickly walked out the door. It's very easy to cash a check with forged signatures. Lock up your checks. Make sure that the check numbers are there and that no checks are missing.

7. The person who receives the cash from service tickets, credit card slips, or checks writes that he or she received it on the service ticket. Have staplers in each service technician's trucks so that he can staple the cash, staple the credit card receipt, or staple the check to the service ticket so it doesn't get lost.

True story. An owner of a contracting company is walking into the building one day and sees a check in the parking lot. He picks the check up. It is a check to his company written by a customer for a service call. He sticks it in his drawer just to see what happens. A day or so later the bookkeeper comes to him and says, “The technician says that Ms. Jones paid him and he put the check inside the service ticket. There wasn’t a check with the service ticket. What do you want me to do?” This could have been a difficult situation. Luckily the owner saw the check. When the bookkeeper approached him, he pulled it out of his desk drawer. There are staplers on all trucks and the person receiving the cash or check signs off on receiving it.

8. The person opening the mail does not make deposits. The person opening the mail has a stamp for checks that says “For deposit only” and the checking account number where you expect that check to be deposited. It is very easy to set up a checking account. If the trusted bookkeeper has been your bookkeeper for 5 years and is making all of the deposits she will be known at your bank. One day she could go to the banker and say, “John wanted me to open up a new checking account.” The banker has known your bookkeeper and you for years. She has been making deposits for years. Is the banker going to trust this person? Of course. She gets a new deposit book, a new checking account number with her signature on it. It’s very easy to do. A few of the incoming checks get deposited in her account...if they haven’t been stamped.

The account number and “for deposit only” is stamped on all checks when they come in solves that problem.

An interesting thing happened. Somebody walked in knowing that a bookkeeper had left out a series of checks that were going to be made in a deposit. Somebody walked in unbeknownst to the receptionist, stole the checks, walked out the door. They had for deposit only and the checking account number on them. They got their checks back.

Had those checks not been stamped, it would have been very easy to set up a new checking account, put another account number on it and cash those checks. The customer never would have seen the dollars again.

9. Print out a vendor list at least once a quarter. If you don't know how to print it out watch the bookkeeper print it out. Look at your vendor list and make sure you recognize the names of every single supplier who is on that list. So if you see Acme Supply and Acme, Inc., a red flag should be going off. Acme Supply might be your real supplier. Acme, Inc. might be a fictitious company set up by an employee. Print out a vendor list once a quarter and look at it.

10. Look at all the payroll tax confirmations. If your company is paying its payroll taxes electronically, look at the confirmation numbers. If it is doing payroll taxes by bank deposits, then look at the deposit slips.

True story. Husband and wife run a contracting business together. Husband and wife are getting divorced. Wife decides she is going to get husband. Wife does not make payroll tax payments for a year. You can imagine what happened. It was very expensive.

If you are responsible for payroll taxes make sure you see the payroll tax deposit slips or the electronic confirmation numbers. You need to know that payroll tax deposits were made.

11. Send your bank statements to your home address. This is probably the easiest to do and the most important to do. It is your first line of defense. Call your bank now if you aren't already doing this! When you get the bank statements at your home look at all the checks. Make sure that the signatures on the checks are your signatures. Look at whom the checks are written to. If you don't recognize the name, ask questions.

The side benefits are that you see all bounced checks, loan payment notices, and other bank communications about your account and your hard earned cash.

It usually takes no more than 15 minutes to do this. It's well worth the fifteen minutes since it is the first line of defense in keeping the honest people honest.

X. Conclusions...or beginnings

Once the financial systems are in place you'll have a good handle on the cash and profits in your business. Balance sheets, income statements, and financial ratios tell you what is happening on a monthly basis. Cash flow statements help you watch cash on a weekly basis.

Profitability isn't enough. You have to be cash flow positive. Here's a last story.

A contractor had a very profitable commercial contracting company. The work he was doing was earning a good profit. His accounts receivable were over \$900,000 per month. Within one month, three of the companies that he was working for went out of business owing him nearly \$1,000,000 for work performed. He didn't have the cash to survive, pay payroll, his suppliers, and his overhead. He went out of business too. So, can you be profitable and out of business? Yes, if you don't have the cash for the profitable work you've performed.

Profits aren't cash. Cash isn't profits. You need both. This manual showed you how to track both. Watch your cash. It is the lifeblood of your business. Positive cash flow allows your company to generate revenues. And, those revenues must be for profitable jobs or soon your company won't have positive cash flow.

Keeping score allows you to properly run your contracting business and take care of minor issues before they become major crises. It's easy to do the activities described in this manual and it's easy not to take the time to do them. The choice is yours.

About the Author

Ruth King is CEO of ProNetwork, TV, Inc. and Channel Manager for HVACChannel.tv, television on the Internet for contractors. She is also President of Business Ventures Corporation, a training and consulting company for HVAC, plumbing, and electrical contractors. Ruth has worked in the construction industry since 1987. Her work includes consulting in sales and marketing, finance, technical training, and operations challenges.

Ruth holds an MBA in Finance from Georgia State University and Bachelor's and Master's Degrees in Chemical Engineering from Tufts University and the University of Pennsylvania, respectively. She holds a Class II (unrestricted) HVAC contractor's license in Georgia.

One of her most important community activities is her work with Project READ, Inc. In 1986, Ms. King was its first President. She helped to organize the group and has continued to work with the organization by contributing her time and business expertise to the group until its merger with Literacy Volunteers of America in January 2003.

Ruth is a member of Leadership Atlanta and Leadership Georgia. She has received many awards for her business achievements including National Direct Mail awards and a Cisco/Inc. Magazine technology award.

She is a frequent speaker at local and national conferences and for industry manufacturers, distributors, and associations.

Her publications include Contractor Cents, Career Manual: With Career Levels for Technicians and Installers and tests to "graduate" from one level to another, Service Manager's Guide to Running a Profitable Service Department, HVAC Bookkeeping Guide, Service Department Procedure Manual, and Keeping Score: Financial Management for Contractors.

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