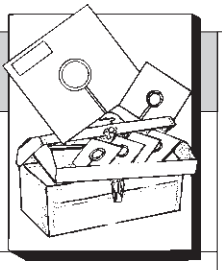
STATE-OF-THE-ART CONTRACTOR

Job-Costing: Key to Accurate Estimates

by Morris D. Carey



Ever have a customer ask you to give him a break on the price? Maybe you felt your price was too high anyway, so you gave him the discount he wanted. Two months later you received your final payment from the customer, and all your expenses for the job were paid, but nothing was left for you.

Sound familiar? It doesn't have to be that way. My brother and I haven't lost money on one job in the seven years that we've been job-costing on computer—not one dime. We job-cost every penny of labor, material, subs, and other expenses directly to our jobs by category of work (demolition, excavation, foundation, carpentry, plumbing, masonry, etc.).

To convince your client that your price is correct, *you* must first be convinced that the price is correct. And, in order to be positive about your price, you must have some method to determine its accuracy.

You convert a "guesstimate" into an estimate by job-costing it. Job-costing isn't new. It's been a function of good contracting since the Pilgrims.

The process is quite simple. We subtract *actual job costs* from *selling prices* and end up with a difference—*gross profit* or *loss*. If the number is positive, then there is a chance that a profit was made. That's right, a chance. If the positive difference is too high, we may have charged too much, and may lose jobs. And if the positive number is too low, we may not have covered our overhead and will lose money.

The relationship of job-cost to selling price is used as a basis to alter estimate prices so they are more exact.

Four Musts

To do effective job-costing you must:

- Have a clear understanding of accounting terms, including: cost, markup, sales price, gross profit, overhead, and net profit.
- Use an estimating technique with a high degree of consistency.
- Use an effective time sheet that can be used by direct-hire field crew members to accurately assign time spent to the correct job and category of work.
- Perform job-costing on at least five jobs at a time, using the resulting averages to adjust line-item costs in your price book.

Income Statement Format

Selling Price
(Job Cost)

Gross Profit

Overhead Expense

Net Profit

{ This point in the income statement is referred to as *the line*. Job costs are always shown *above the line*. Overhead expenses are always shown *below the line*.

Sample Income Statement

Estimated Job Cost	$100	
Markup (.67 or 67%)	67	
Selling Price	167	100%
Job Cost		
Labor & burden		
Materials including tax/delivery		
Subcontractor costs		
Equipment rentals		
Sales commissions		
Inventory used on jobs		
Total Job Cost	100	60%
Gross Profit	67	40%
"The Line"		
Overhead		
Legal and accounting		
Advertising		
Rent & utilities		
Postage		
Insurance		
Office payroll		
Vehicle fuel & maintenance		
Interest expense		
Repair of construction equipment		
Repair of office equipment		
Superintendent payroll		
Total Overhead Expense	50.30	30%
Net Profit	$16.70	10%

Must #1: Accounting Basics

First, let's brush up on basic accounting. We'll begin with an outline of a basic income (profit and loss) statement (see Income Statement Format).

A clear understanding of the difference between a "job cost" and an "overhead expense" is extremely important.

For instance, I'm always asked where a contractor should put superintendent expense. If the superintendent is a full-time employee whose paycheck doesn't depend on whether there are jobs or not, then he's overhead expense. On the other hand, a salesman who works strictly on commissions (is only paid when a job is sold) is posted to job-cost expense. The commission, tax contributions, and benefits should all be shown "above the line." Expenses are never posted "above the line" unless the purchase was made specifically for a given job.

The selling price is a combination of the cost and the markup. How you represent markup in your estimate is irrelevant, as long as it exists.

Slightly over one-third of the contractors I have surveyed show total price only, another third show subtotals by category of work and a job total, and just under one third show prices for each line item, each category, and a job total.

Of the three different methods, half the contractors include contingency, overhead, and profit (C/O/P) within the line item and/or category subtotal, and the other half show C/O/P separately at the end. Of the last group, many elect to reflect a portion of contingency and overhead at the line item or category level, and the rest at the end of the estimate.

Cost is what you pay and markup is the percentage factor used to create the selling price. Remodeling consultant, Walt Stoppleworth, preaches a 67% markup. That is, if it costs $100 then sell it for $167 ($100 times 1.67 equals $167). According to Stoppleworth, the 67% markup, which results in a 40% gross profit, leaves a legitimate contractor with enough money to cover a 30% overhead and a 10% profit.

The Sample Income Statement illustrates what he says in chart form.

I created a spreadsheet (next page) on my computer that helps me look more closely at markup vs. gross profit. You can do one of your own too. It can be as elaborate or as simple as you like.

I use five columns. In the first column (cell A1), I enter $100 as my cost. (Any amount can be used.) In the second column (cell A2), I enter a markup percentage in decimal form, and in the third column (cell A3), I create a calculated cell that renders the markup amount in dollars. I use Lotus 1-2-3, so the formula is +A1*A2 (this means the amount in cell A1 times the amount in cell A2).

The fourth column (cell A4)—the selling price—uses another calculated cell, and is the sum of columns one and three. The formula is +A1+A3.

And finally, in the fifth column (cell A5), is the percentage of gross profit—yet another calculated cell. Here I divide the cell in the third column by the cell in the first column. In Lotus, use the formula +A3/A1.

After creating the first row, I simply use the Lotus copy command to extend the rows downward. Note the line which has a 50% markup. The gross profit column shows 33.3%.

Note that the first row shows a mark-up percentage of 10% and a gross profit percentage of 9.1%. Remember, raising your price 10% by marking up your existing cost times 1.10 will not give you 10% more profit, but 9.1% instead.

This spreadsheet can be easily created in Lotus to show markups and respective gross profits in increments of one percent, from zero to infinity. It took me 20 minutes to create one that showed markups from 1% to 200%. Use your printout to make price adjustments when job-cost accounting proves that a price adjustment is in order.

Must #2: Be Consistent

Your estimating technique must be consistent. Estimators have a tendency to alter a line item price at estimate time in accordance with degree of difficulty, which crewman will do the work, or how tough the customer might be. *Nothing could be more wrong!*

Regarding degree of difficulty: A wall that's difficult to frame is such because it has a curve or an unusual number of corners, or angles, or partitions, or windows, or doors, or whatever. Each of the items I just noted must be treated as a separate line item of work. We estimate the linear footage of wall and then add the number of curves, partitions, corners, angles, windows, doors, and other features—each with its own standard price. This way, the degree of difficulty is monitored by specific detail, and the method of estimating is consistent and repeatable.

Regarding which crewman will perform the job: Establish a labor rate that covers the cost regardless of who will be doing the work. Apprentices aren't paid as much as journeymen because they can't perform the work as quickly. All labor should be sold at the journeyman rate and worked back to plan units of measure for estimating purposes. Remember, there are no hours shown on a set of plans, so plans can

Markup vs. Gross Profit

Cost	Markup (Percent)	Markup (in Dollars)	Selling Price (in Dollars)	Gross Profit (Percent)
$100	10	$10	$110	9.1
100	50	50	150	33.3
100	51	51	151	33.8
100	53	53	153	34.6
100	55	55	155	35.4
100	57	57	157	36.3
100	59	59	159	37.1
100	61	61	161	37.9
100	63	63	163	38.7
100	65	65	165	39.4
100	67	67	167	40.1
100	69	69	169	40.8
100	71	$71	$171	41.5

CAREY BROS. WEEKLY TIME REPORT

EMPOYEE NAME_____ EMP. NO. _____ PAY PERIOD_____

JOB NAME _____

DAY	TOTAL HOUSE IN EACH WORK CODE									DAILY TOTAL
MONDAY										
TUESDAY										
WEDNESDAY										
THURSDAY										
FRIDAY										
*TOTAL WCH										TOTAL HOURS THIS WEEK THIS JOB
WORK CODE										

Total Hours This Week on All Jobs _____

Employee Signature _____ Date _____ Office Approval_____

Each employee is required to submit his/or her time sheet to the office every Monday.

*Total WCH = Total work code hours – weekly total of time spent (by job) in each work code.

WORK CODES

AB • Temporary Facilities Labor
Move company or rental equipment on or off job.
Dump runs.
Set-up or build and tear down scaffolding.
Off-haul excess material to another job or warehouse.

AC • Demolition Labor
All removals (light bulbs to roof cover).
Removing a stud or a header from the existing structure is demolition not carpentry.

AD • Excavation and Grading Labor
Any earthwork of any kind, be it for foundations, flatwork, retaining walls, or otherwise.

AE • Concrete and Foundation Labor
Forming, pouring, and stripping.

AF • Rough Carpentry Labor
In addition to the obvious this category includes such work as moving lumber from street to house, and installing exterior doors, exterior siding, exterior trim, pocket door frames, windows, skylights, and sliding glass doors.

AG • Finish Carpentry Labor
In addition to the obvious this category includes such work as installing bath hardware, underlayment, floor scraping, and freestanding appliance installation.

AM • Sheetrock Installation Labor
Stocking, hanging, or finishing sheetrock.
Removal of sheetrock is demolition and should not be charged to this category.

AV • Insulation Labor
Insulation installation time.

BG • Cleanup
On site cleaning time.
Clean-up performed as a result of mess left by other than Carey Bros. personnel (i.e. subcontractors) should be reported to your supervisor.

not be estimated consistently by hours. Convert your hours to plan units of measure to establish that consistency.

Regarding the attitudes of different customers: Plans don't represent how difficult a customer might be to please. So, don't take chances—price your work as if every task will be studied under a microscope.

Must #3: Time Sheets

We all know that the most difficult aspect of estimating (and the most difficult task to job-cost) is direct-hire labor. This problem can be overcome with a practical job-costing policy and a good time sheet.

A thoroughly detailed estimate usually will contain about 255 line items. And it usually is created from a price book—hand or computer-based—that contains hundreds of line items of work. My computer contains nearly 2,000 line items, so you can see that job-costing so much estimate detail could prove to be impossible.

The solution is to job-cost the subtotal. Don't job-cost the details.

For example, let's assume you're a general contractor and your crew does excavation, demolition, foundation labor, and carpentry labor. You would estimate each of the above categories of work using as many line items from your price book as necessary.

Only the subtotal for each task, such as foundation labor or framing labor, would be job-costed. All labor costs for that subtotal would be lumped into one number, and a resulting profit or loss for that task would be reflected. That value (averaged over several jobs) would then be used to adjust each labor line-item price up or down accordingly.

After several years of following this procedure, each and every price in your estimating system will be the average price that it takes to perform the work.

To make this work, a time sheet must be created that allows each crewman to indicate which job he worked on, when he was there, and what category of work he performed—demo, excavation, foundation or carpentry (see sample time sheet, facing page). Asking that carpenter to provide greater detail (unless you're a framing contractor) would be expecting too much and is unnecessary.

Must # 4: Play the Averages

Always job-cost by averages. Never allow the job-costed values from only one project to be the basis for altering the prices in your estimating system. The road to successful pricing is a long one that requires a look at the big picture. Give yourself time to get a good look.

Once you've established costs in your price book, you no longer have to concern yourself with how long a job will take. After initial prices are established from hours or whatever you choose, job-costing by dollar averages takes over.

The key to getting good dollar averages is to first create an effective estimating price book that reliably covers all aspects of your work. This makes your pricing consistent. Even if the prices are wrong at first, you have to start somewhere. Job-cost the category subtotals rather than details at the item level. And job-cost several projects at a time. Use the average results (the percentage of gross profit or loss) of five or more jobs to determine the necessary adjustment percentage. Finally, use the adjustment percentage to correct each and every item in the price book.

For example: If the gross profit in the carpentry category is 9% too low, then you would need to compensate by increasing your markup 10% at each and every carpentry line item.

Eventually, using these job-cost procedures, all prices become exact beyond belief. In our first year we sold $300,000 in remodeling. This year our company will do $4,000,000. We couldn't get work if our prices were too high and we couldn't have stayed in business for seven years without making a profit. The one computer we started with has turned into nine computers on a network.

Next month I'll show you how to create a job-costing program on a spreadsheet and point you toward several ready-made programs that can do the trick as well. ■

Morris D. Carey is a partner with Carey Bros. Construction, a successful remodeling firm based in California. In addition, he has reviewed hundreds of construction-related computer products, and conducts computer seminars for The Journal of Light Construction. *If you have a question about computing in construction, address it to State-of-the-Art Contractor, c/o* JLC, *1233 Shelburne Road, Suite C1, South Burlington, VT 05403.*