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Job Costing

Job costing is the most common method for marshaling cost accounting information into a data structure containing usable information. Most cost accountants have experienced this system at some point in their careers, quite possibly at every facility where they have ever worked. In this chapter we consider the nature of job costing and why it is used so frequently. In addition, we present a graphical representation of how data flows through this system and then proceed to a discussion of the main control points to be aware of and how they can fail.

NATURE OF JOB COSTING

As the name implies, job costing is designed to accumulate the costs of small batches, or jobs, of products. This may mean that a single job is considered a single product created in volumes of one, or much larger batches produced for several weeks or months—it all depends on the production process.

In essence, job costing traces all material and direct labor costs directly to a batch and allocates overhead costs to batches as well. This is a simple rendition of the system. In reality it must first accumulate costs for any components or subassemblies stored in inventory and then shift these costs to specific jobs once the items are taken from stock and assigned to a job. It also requires direct labor employees to charge their time to specific jobs (which necessitates a good timekeeping system). In addition, overhead costs must be

stored in separate cost pools and then allocated to each job. These overhead costs can be allocated using a standard overhead rate, which is called *normal* costing, or they can be allocated with actual costs, which is (predictably) called *actual* costing. The result is a computer file on each job that itemizes all the direct material, direct labor, and overhead costs that have been assigned to it. In the next section we consider the advantages and disadvantages of this method and then go on to present a more in-depth review of the transactions that flow through the system.

ADVANTAGES AND DISADVANTAGES OF JOB COSTING

One of the primary advantages of job costing is that the management team has ready access to all the costs incurred for each job being completed. This allows the team to examine each cost incurred, finding out why it happened, and determine how it can be controlled better in the future, thereby contributing to better ongoing levels of profitability. For example, a proper job record contains any special reworking costs, which a manager can then use to trace back to the specific reason why the rework was needed. Similarly, overhead allocations based on machine usage reveal problems with excess use, which might be the result of lengthy machine setups or breakdowns as well as longer-than-expected machine cycle times.

Another reason for using job costing is that it yields ongoing results for each job. In today's world of fully computerized production tracking databases, one can use a job costing system to track costs as they are added to a job rather than waiting until the job has been completed. This gives a company several advantages. One is that the accounting staff can monitor job accounts to see if costs are being posted to the wrong accounts and correct them right away, rather than waiting until the job closes and having to frantically review records to see why the results are different from expectations. Another advantage is that a company can monitor the costs incurred for longer jobs and have enough time to make changes before they close, based on the costing information revealed by the job costing system. For example, a lengthy new-product development project might be over budget after just 25% of the work has been completed; if the management team is made aware of this costing problem early

in the project, it will still have 75% of the project in which to make corrections and bring costs back down to budgeted levels. Yet a third advantage is that changes in the cost of a job can result in negotiations with cost-plus customers who are paying for all the costs incurred, so that they are fully aware of cost overruns well in advance and are prepared to pay the additional amounts. All these factors are the main advantages of using job costing in a computerized environment.

There are also several problems with job costing. One is that it focuses attention primarily on products rather than on departments or activities. This is not an issue if there are supplemental systems in place that record information about these other cost categories, but it leaves management with inadequate information if this is not the case. Another difficulty is that overhead is generally allocated based on rates that are changed only about once a year. Considerable fluctuation in overhead costs over the course of a year can result in both over- and underallocation of overhead costs to jobs during that period. Another problem is specific to the use of normal costing. As noted in the last section, this practice involves the use of a standard overhead rate rather than one that is based on actual costs and requires adjustment from time to time. If it is management's intention to charge individual jobs for the variance between standard and actual overhead rates, this may not be possible if some jobs have already been closed by the time the variance allocation takes place. This is not just a technical accounting issue, for some jobs are fully reimbursed by customers who pay on a cost-plus basis; if the overhead variance is a positive one, a company may not be able to charge its customers for the added costs if the related jobs have already been closed.

Another issue is that job costing has little relevance in some environments. For example, the software industry has high development costs but almost zero direct costs associated with the sale of its products. The use of a job costing system to record these costs makes little sense if the associated costs represent only a few percent of the total revenue gained from each one. The same problem arises in service industries, such as retailing, where there is no discernible product. These situations limit the most effective use of job costing to two areas—production and professional services. The first case,

production, is an obvious use for the concept since there are high material costs that can be specifically identified with a job. The same is true of professional services, but here the main cost is direct labor rather than direct materials. In most other cases job costing does not provide management with a sufficient quantity of information to be useful.

The most important problem with job costing is that it requires a major amount of data entry and data accuracy in order to yield effective results. Data related to materials, labor, overhead, indirect labor, scrap, spoilage, and supplies must be entered into a system capable of accurately assigning these costs to the correct jobs every time. In reality such systems are rife with mistakes due to the sheer volume of data transactions, keying errors, misidentification of jobs, and the like. Problems can be resolved with a sufficient amount of error tracing by the accounting staff, but there may be so many that there are not enough staff members to keep up with them. Though these issues can to some degree be resolved through the use of computerized data entry systems, one may still have to determine whether the cost of maintaining such a system outweighs the benefits to be gained from it.

A final issue is that a large proportion of the costs assigned to a job, frequently more than 50%, comes from allocated overhead. When there is no fully proven method for accurately allocating overhead, such as through an activity-based costing system (Chapter 8), the results of the allocation yield meaningless information. This has been a particular problem for companies that persist in allocating overhead costs based on the direct labor used by each job, since a small amount of labor is generally being used to allocate a much larger amount of overhead, resulting in large shifts in overhead allocations based on small changes in labor costs. Some companies avoid this problem by ignoring overhead for job costing purposes or by reducing overhead cost pools to include only overhead directly traceable at the job level. In this way, many costs are not allocated to jobs at all, but those that are allocated are fully justifiable.

Clearly, one must weigh the pros and cons of using a job costing system to see if the benefits outweigh the costs. This system is a complex one that is prone to error, but it does yield good information about product-specific costs.

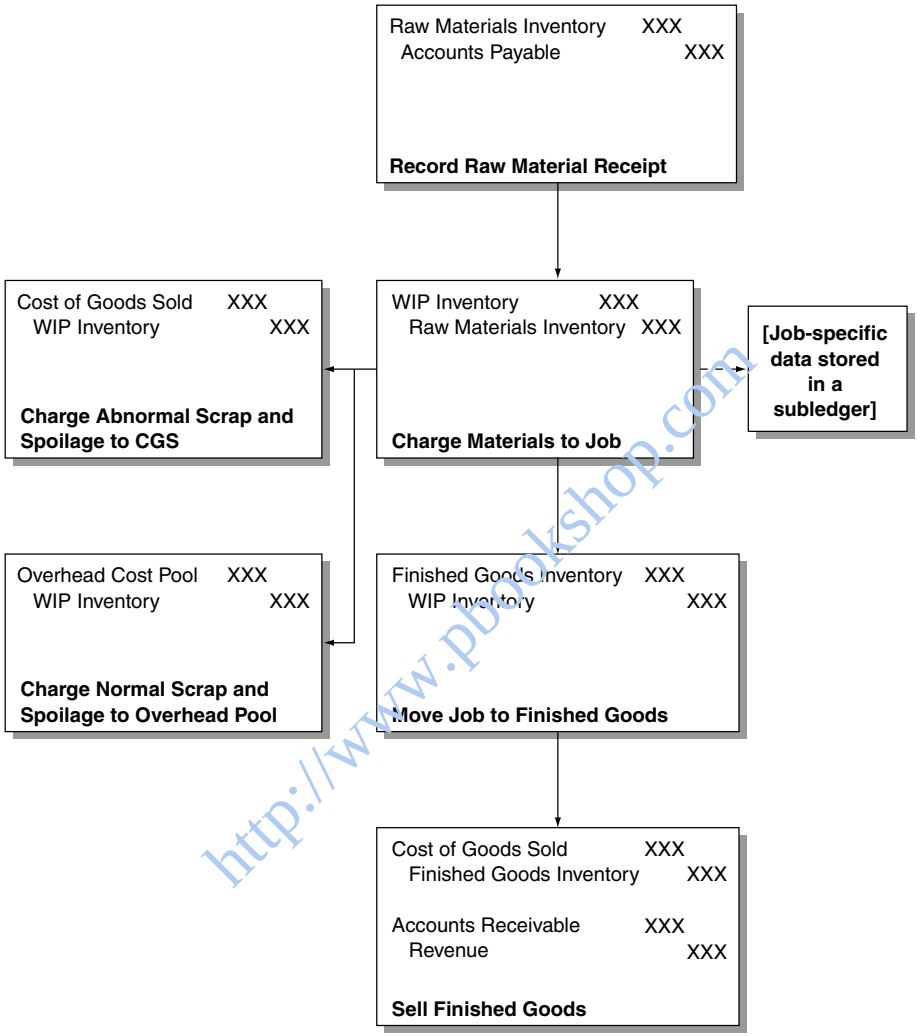
JOB COSTING DATA FLOW

In this section we consider the most common transactions encountered when using a job costing system. These transactions are noted graphically in Exhibits 1.1 through 1.4, each of which indicates the journal entries used. In these exhibits, journal entries are contained within rectangles showing the accounts that are debited and credited, as well as transaction descriptions (in bold) at the bottom of each rectangle.

Three types of transactions flow through a job costing system. The first is related to direct materials and is shown in Exhibit 1.1. As noted at the top of the exhibit, materials are purchased by a company and stored in inventory on receipt. When they are pulled from stock and issued to a job, a second transaction shifts the cost of these materials out of inventory and into work in process ("WIP Inventory"). There should be a subledger in the accounting system that stores these material costs by specific job and then summarizes this information into a single lump-sum entry in the general ledger (thereby keeping the general ledger from becoming too cluttered with entries). As the materials are used in the production process for each job, there may be abnormal amounts of scrap or spoilage; if so, the cost of these quantities is charged directly to the cost of goods sold. Alternatively, the cost of any expected, or normal, scrap and spoilage is charged to an overhead cost pool for later allocation back to jobs. These two transactions are noted on the left side of the exhibit. Once each job is finished, a transaction shifts its total cost from work in process to finished goods. Finally, when there is a sales transaction, the cost of the finished goods is shifted to the cost of goods sold and the sale is recorded in a separate journal entry. These transactions are noted at the bottom of Exhibit 1.1 and are the primary job costing transactions related to direct materials.

The second type of transaction that flows through a job costing system is for labor and is detailed in Exhibit 1.2. It begins with the incurrence of labor, for which there is a journal entry to wages expense and wages payable. The wages payable is eventually cleared with an offset to the cash account, but this issue falls outside the job costing system. The main problem is what happens to the wages expense. It comprises both direct and indirect labor. As noted on the right side

Exhibit 1.1 Job Costing Transactions for Direct Materials



of the exhibit, direct labor costs are shifted from the wages expense account to the work-in-process account, where they are itemized by job in a subsidiary ledger. As was the case for direct materials, these individual job records are rolled up into a summary-level account in the general ledger. Indirect labor (i.e., any labor that cannot be directly ascribed to a specific job) is charged to an overhead cost pool

Exhibit 1.2 Job Costing Transactions for Labor

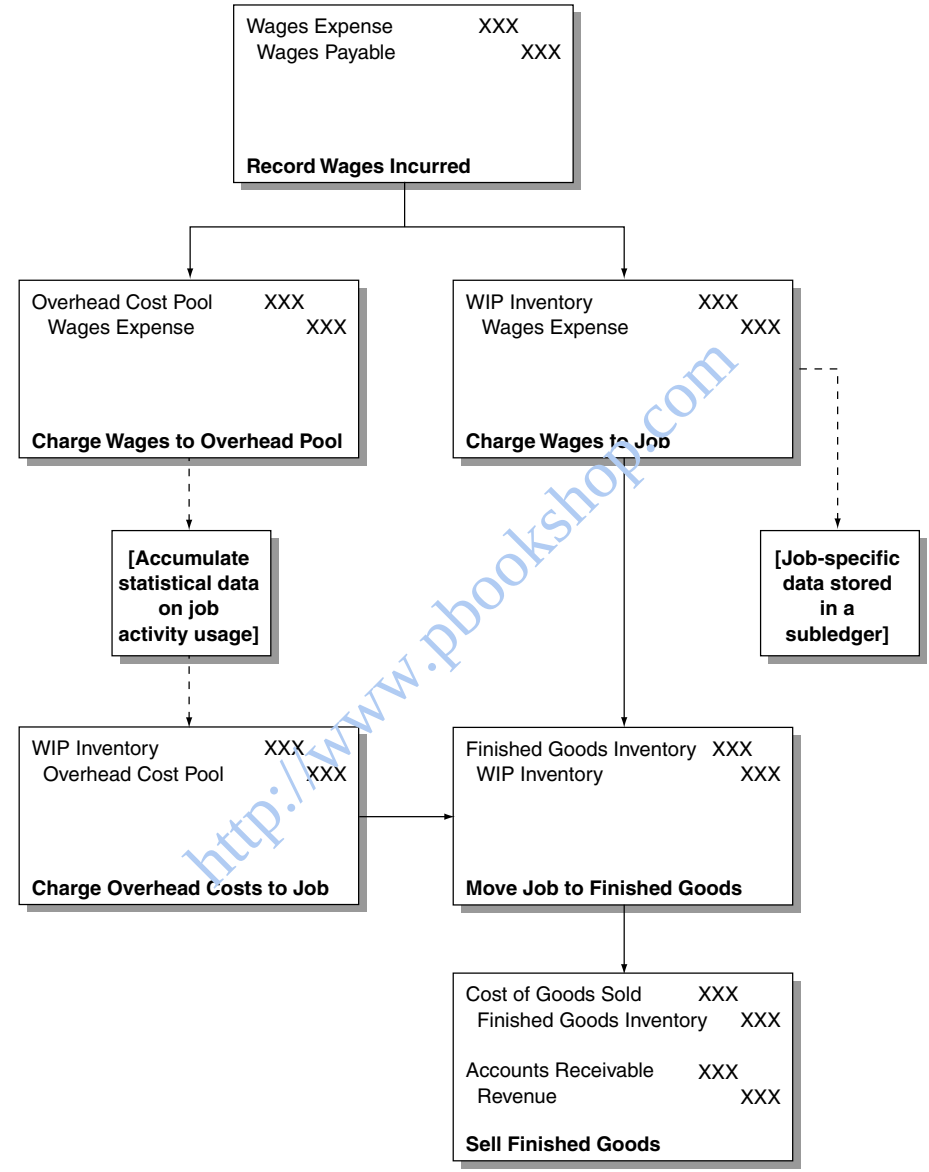
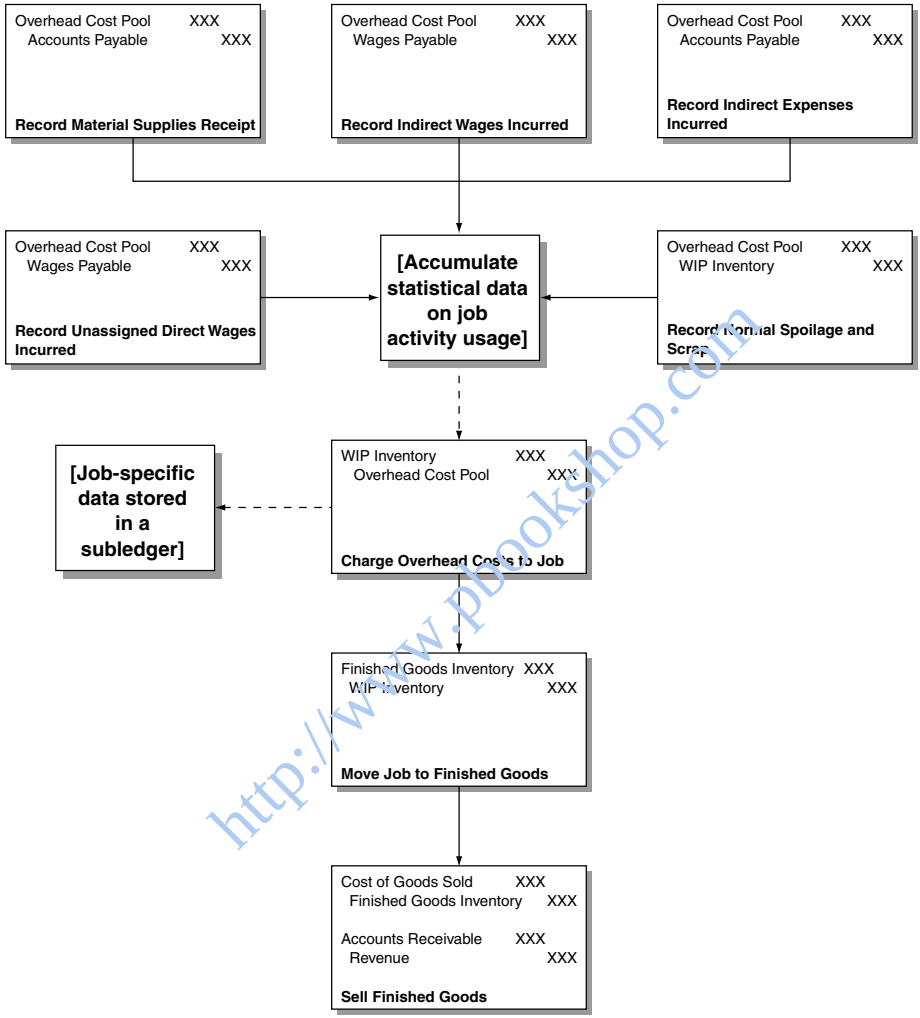
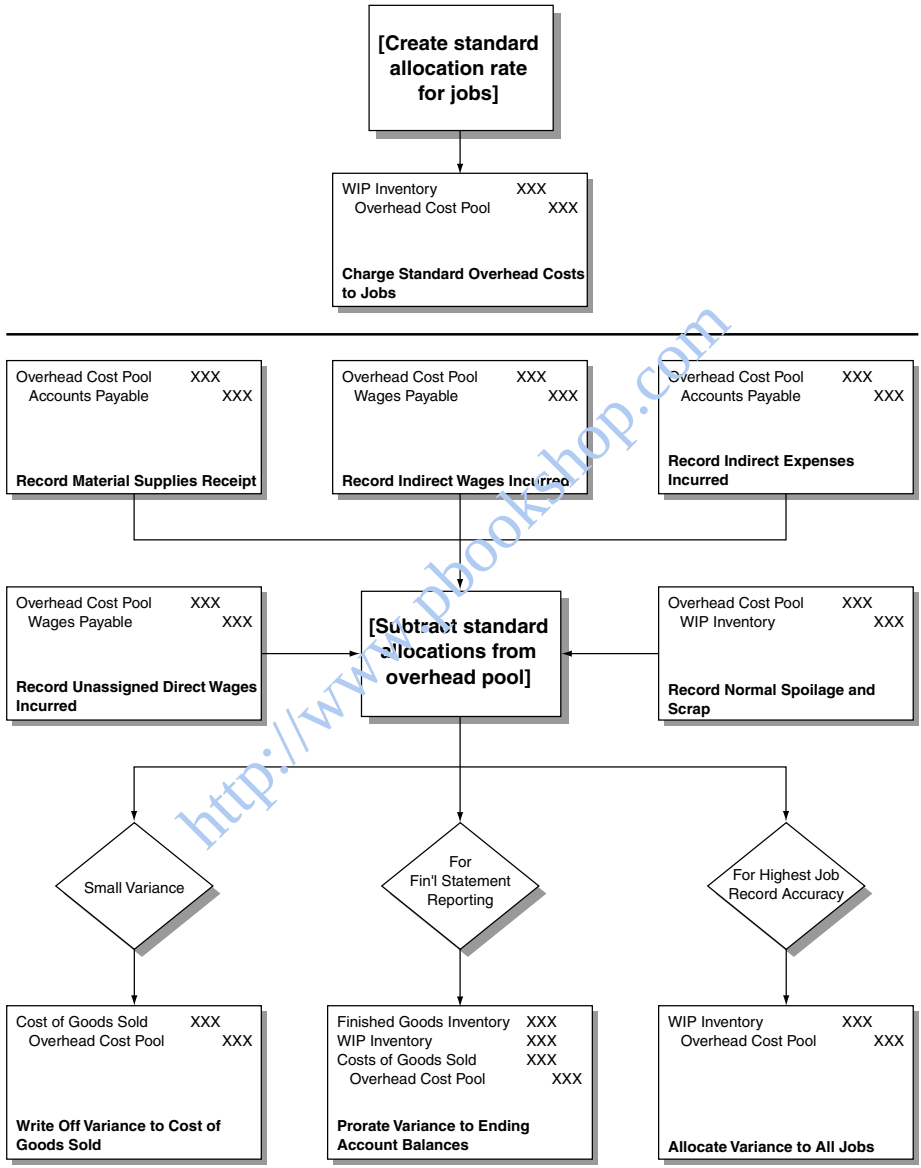


Exhibit 1.3 Job Costing Transactions for Actual Overhead Cost Allocations



as noted on the left side of the exhibit. These costs are later allocated back to jobs, as noted in Exhibit 1.3. Finally, at the bottom of Exhibit 1.2, we see the same transactions that shift completed jobs from work in process to finished goods and then to the cost of goods sold. These are the primary job costing transactions related to labor.

Exhibit 1.4 Job Costing Transactions for Normal Overhead Cost Allocations



The third type of job costing transaction is related to overhead costs. As indicated in Exhibit 1.3, overhead costs are summarized into one or more cost pools and then allocated to all open jobs based on some activity measure. Exhibit 1.3 presents the flow of transactions based on the assumption that actual costing is being used for the overhead allocation process; the normal costing process flow is presented in the next exhibit.

The transaction flow begins with the accumulation of costs into an overhead cost pool. There are a number of sources of these costs. Material supplies (i.e., materials not directly traceable to a specific job) are charged to an overhead cost pool as soon as they are purchased, since they are not stored in the inventory account. Indirect wages, as just noted, are also charged to an overhead cost pool. In addition, there are a number of other expenses, such as utilities and insurance, that are charged directly to a cost pool as soon as bills are received from suppliers. Likewise, several variances from direct labor and direct materials are charged to overhead. One is for direct labor that has not been specifically charged to a job, and another is any normal spoilage or scrap from direct materials. All these journal entries are noted in the top half of Exhibit 1.3. These costs can be accumulated into different overhead cost pools if the activity measures used to allocate them to jobs are substantially different. For example, a cost pool that accumulates all material handling costs can allocate costs based on the number of material moves required for each job, whereas another cost pool for machine-related expenses charges out its costs based on the minutes of machine use by each job. The number and type of cost pools used are based on the activity measures employed and the utility of the resulting increases in the accuracy of allocations. See Chapter 8 for a lengthier description of this topic.

The next step in the cost allocation process is to determine an activity measure to use for allocating the costs in each pool to the various open jobs (again, see Chapter 8 for a discussion of allocation methods). Next, one must accumulate statistics on the amount of each activity used by each job and then allocate costs from the cost pools to the jobs based on the amounts of each activity used. This results in the journal entry in the middle of Exhibit 1.3, where we debit the work-in-process account and credit the overhead cost pool account. We then finish with the usual transactions that shift costs from

work in process to finished goods on completion of each job, and from there to the cost of goods sold when each job is sold.

An alternative to allocating direct costs is to use the normal costing approach as outlined in Exhibit 1.4. With this method, we create a standard allocation rate per unit of activity rather than using the actual cost. This is done in order to facilitate the allocation of costs, which may otherwise be delayed while actual costs are accumulated. As noted in the exhibit, this process starts by creating an allocation rate that is then used to charge costs to jobs. This standard rate is generally based on historical records, so it should not be too far from an allocation rate based on actual costs. In a separate step (as noted by the dividing line in the exhibit), we then accumulate all the actual costs incurred, just as in Exhibit 1.3, and store them in the overhead cost pool. Next we subtract the total amount allocated using the standard allocation rate from the actual amount of overhead costs. There should be a difference between the two types of allocation, which must then be disposed of.

There are three ways to eliminate a variance between the standard and actual allocation totals. One approach, as noted in the lower left corner of Exhibit 1.4, is to charge the entire variance to the cost of goods sold. This is the easiest approach, but it may skew the total cost of goods sold unless the amount of the variance is relatively small. The next option, as shown in the bottom center of the exhibit, is to prorate the variance among the cost of goods sold, work-in-process inventory, and finished goods inventory, based on the ending balances in each account. This option is most useful for external financial statement reporting, where such allocations are required, and is only slightly more difficult to calculate than the direct charge-off to the cost-of-goods-sold option. The final option, as noted in the lower right corner of the exhibit, is to charge the variance to each job that was open during the period when the overhead costs were being accumulated. This method is by far the most labor-intensive since there may be many jobs to which the variance must be allocated. It is recommended only if it is important to have the highest possible level of job record accuracy or if the variance is so large that the other two methods will yield inaccurate reporting results. To calculate this allocation, costs are spread to jobs based on their use of whatever activity measures were originally compiled to allocate overhead costs to them.

The exhibits in this section show the general flow of transactions required to operate a job costing system. Though the basic steps are not difficult to follow, there are quite a few of them, which makes job costing a tricky system to operate and one that frequently results in odd-looking results, thereby forcing the cost accountant to engage in considerable account tracing and reconciliation to see where accounting transactions were incorrectly processed. To avoid these problems, anyone involved with job costing transactions should be thoroughly versed in the process flows noted here.

CONTROL POINT ISSUES

The job costing system requires a significant number of inputs, variance dispositions, and allocations and so is subject to problems at a number of control points. By being aware of these problems, one can revise the system to avoid control problems. This section contains a review of the most common issues.

Disposition of job costing variances is one of the most common control problems. If a manager is oriented toward improving reported profit levels (perhaps because his bonus would be increased), variances are never charged to the cost of goods sold even if they are due to abnormal scrap or spoilage situations. Instead, they are rolled into overhead or prorated among the period-end inventory and cost-of-goods-sold accounts, which keeps some of them from being recognized as expenses in the near term. The best solution to this problem is to periodically review the journal entries used to dispose of variances, as well as to investigate the nature of each one, which can be an ongoing task for the internal auditing department.

A manager who wants to increase profits also has an incentive to park as many jobs in work in process as possible, even if they have really been completed. This gives the manager one or more buckets in which to store extra costs that would otherwise be shifted to finished goods and from there to the cost of goods sold. One way to avoid this issue is to look for old jobs that have not yet been closed. However, a canny manager may shift costs from old jobs to newer ones as the old ones are closed, so it may also be necessary to look for transactions that shift costs between jobs.

Yet another way to pump up reported profit levels is to use indi-

rect labor personnel for work that is really of the direct labor variety, so that these labor costs are shifted to an overhead cost pool rather than being charged straight to a job. If this is done, it is likely that some of the overhead costs will be stored in an inventory account at the end of the accounting period rather than being charged straight to the cost of goods sold. This practice can be avoided by running a trend line of direct labor costs to see if these costs are being reduced despite steady or upward trends in production volume.

An additional control problem occurs when a manager loads costs into a job not scheduled to be sold for some time, thereby keeping them from being charged to the cost of goods sold. This results in a bloated work-in-process or finished goods inventory. The best avoidance measure here is to compare actual job costs to budgeted levels to see if overages are occurring, especially if they are occurring on jobs that are not yet completed.

Another control problem is carrying job cost variances past the end of the fiscal year. A legitimate system always charges any remaining variances to the cost of goods sold. However, anyone wanting to increase reported profit levels tries to avoid this and so routes the variances into an inventory account, thereby hopefully escaping the attention of the auditors who review the year-end accounting records. Once the auditors are gone, the variance is taken back out of the inventory account and charged off in the next year. This issue requires a close examination of the variance accounts to see what journal entries are made to reduce variance levels. If there are many entries running in and out of these accounts, it can be quite a chore to spot such transactions.

Another control problem involves someone trying to add costs to overhead cost pools that are really period expenses and should therefore be charged to the current period. When they are stored in the overhead cost pool, some portion of the overhead is stored in inventory instead of being expensed, thereby increasing reported profits. This common problem can be detected by periodically tracing the origins of all costs added to cost pools, as well as by running trend lines of cost pool totals just to see if they are on a steadily increasing path (which may indicate the addition of unrelated costs).

Another problem arises in the area of allocation methodology. The most appropriate way to spread costs to jobs may be through a

number of cost pools and allocation methods (such as through an activity-based costing system), which yields the most accurate allocations. If this is not done, perhaps through the excessive accumulation of costs into too few cost pools or through inappropriate allocation techniques, the amount of overhead costs charged to each job may be too low or too high. This issue can be avoided by using an activity-based costing system.

When there are many product lines in a facility, it is also possible that different job costing systems are set up for each one because different costing personnel are used to create each one or because there is some perceived justification for using different cost accumulation or allocation systems. In reality this creates confusion, leading to inefficient costing systems. It is better to force all production lines into the same job costing mold.

Allocations can be inaccurate if a company chooses to use a normal costing system without some historical basis for using standard costs. When this happens, the allocations vary significantly from actual costs, resulting in repeated adjustments to the allocation rates being used, which in turn results in inaccurate overhead costs being assigned to jobs. In such situations it is better to start with an overhead allocation system based on actual costs and then switch over to a normal costing system *after* there is a history of costs on which to base a set of valid overhead standards.

A final problem is that some companies feel compelled to update their cost allocation rates too frequently, perhaps every month. They may do this based on a feeling that allocation rates are not accurate if they are not regularly compared to actual costs. However, there can be considerable fluctuation in monthly costs, based on seasonal cost changes, based on the number of workdays in each month, or because the accounts payable staff erroneously records no expenses in one month and double the amount in the next month. Whatever the reason, it is common to see costs fluctuate from month to month, which results in allocation rates for jobs that fluctuate in a corresponding manner. It is better to wait a few months before updating allocation rates simply because a longer time period flattens out any monthly cost changes.

Clearly, there are many control issues related to the job costing system. This does not mean that job costing is an inefficient system,

just that it incorporates so many transactions that there are many situations in which costs can be deliberately or accidentally skewed. Thus, one must keep a watchful eye on the overall process in order to ensure that transactions are appropriately processed.

SUMMARY

Job costing is one of the primary cost tracking systems employed by corporations today. Because it is commonly used, the cost accountant will probably encounter the transactions described in the chapter at some point and so should know how to operate the system and have a firm grasp of its problems and control issues. Because this system is frequently used does not mean that it is perfectly suited to all situations, however; on the contrary, it is too much work for many cost accountants in relation to the types of information it produces. Consequently, one should review the other costing systems described in this book to see if one of them will work better or if job costing can be combined with a different costing system to yield the best blend of efficiency and effectiveness.