Chapter 7

Recording transactions in a job-costing system

Real world case 7.1

This case study shows a typical situation in which management accounting can be helpful. Read the case study now but only attempt the discussion points after you have finished studying the chapter.

Border Electric/Mechanical (Border) is a wholly-owned subsidiary of EMCOR Group, Inc. As a leader in electrical, mechanical, plumbing, and HVAC commercial construction, Border serves the El Paso, Texas and southern New Mexico area. With just under 500 employees, the company offers design/build, design/assist, and value engineering services, specializing in warehouse, manufacturing, distribution, military, and call centers.

Challenges: Border's estimators created estimates manually, which was a time-consuming and arduous process prone to errors. With military a large part of their customer base, it was critical to be exact and adhere to stringent practices and specifications.

Solution: The company uses Maxwell Systems Estimation Logistics for complete estimating that ties together estimates, labor needs, and cost analysis. Because the solution is specifically designed for electrical contractors, Border is able to automate its bidding process and improve its productivity.

Results: Using Maxwell Systems Estimation Logistics, Border has increased the speed and accuracy of its takeoff and estimation process and streamlined operations.

Source: http://www.maxwellsystems.com/?action=maxwell/success&article=287.

Discussion points

1 What are the records that are important for the job cost system in this business?

2 Why does the owner feel happier about using a computerised system?

Contents

Learning outcomes

After reading this chapter you should be able to:

- Prepare ledger accounts to record transactions contributing to work-in-progress and finished goods for a job-costing system.
- Understand and prepare control accounts and supporting records.
- Explain the main features of calculating and reporting periodic profit on contracts, and prepare a contract ledger account.
- Describe and discuss an example of research into applications of job costing.

7.1 Introduction

Chapter 6 explained the elements of a job-costing system (direct materials, direct labour and production overheads). This chapter shows how the bookkeeping system may be used to record transactions in respect of direct materials, direct labour and production overheads and to show how these contribute to the recording of work-in-progress, finished goods and cost of goods sold.

If you have learned bookkeeping in **financial accounting** you will be aware of the bookkeeping rules as shown in Table 7.1. These are the only rules you need for recording management accounting costs.

Table 7.1
Bookkeeping rules for expenses and revenues

Type of account	*Debit entries*	*Credit entries*
Expense (cost) account	Increase in expense	Decrease in expense
Revenue account	Decrease in revenue	Increase in revenue

In management accounting the term 'cost' is used more frequently than 'expense'. Costs tend to move from one ledger account to another in a manner which reflects the physical activity of the enterprise. Changing the name from 'expense' to 'cost', and allowing for the flow of costs around the ledger, Table 7.2 provides a useful summary of the basic approach to recording cost transactions.

Table 7.2
Debit and credit entries for transactions in a ledger account for costs

Type of account	*Debit entries*	*Credit entries*
Cost account	Increase in cost	Decrease in cost
	Transfer of cost from another cost account	Transfer of cost to another cost account

Table 7.2 contains the basic requirements to build up a minimum set of ledger accounts for a job-costing system, sufficient for management accounting purposes but not over-elaborate. The application of this simple system is illustrated in a practical example in section 7.4. The need for control accounts and subsidiary records is then explained and a further practical example is presented in section 7.5 which elaborates on the first example, showing the use of control accounts and integration with the

financial accounting records. Finally a contract account, as a very specific form of job costing, is explained in section 7.6 and illustrated in section 7.7.

7.2 Types and titles of cost ledger accounts

In management accounting there is a need for detailed analysis of transactions and so there is a need for similar detail in the number and type of ledger accounts used.

There is an important question in how to keep track of both the financial accounting and the management accounting information in the ledger system. Some small businesses may prefer to keep their financial accounting ledger separately from the cost accounting records and have two separate sets of ledger accounts for the purpose. However, most larger businesses, especially where a computer is in use, will integrate the cost accounting ledger accounts with the financial accounting records. This chapter will concentrate on the **integrated system** approach.

The choice of headings used in ledger accounts for financial accounting purposes is to some extent constrained by the legislative regulations applied to external financial reporting. Those constraints are not present in management accounting so there are opportunities to choose the number and type of ledger accounts which best serve the management needs.

7.3 The flow of entries in a job-costing system

This description follows transactions through Figure 7.1 by reference to the letters used to label each ledger account. The diagram is based on a situation where materials are acquired on credit whilst wages are paid in cash. It also assumes that all overheads are paid for in cash. For completeness, it also shows the recording of revenue in the profit and loss account.

Activity 7.1

Look at Figure 7.1 and follow the flow of transactions down the diagram. Then use the diagram to explain how costs are collected in the profit and loss account.

7.3.1 Materials inventory

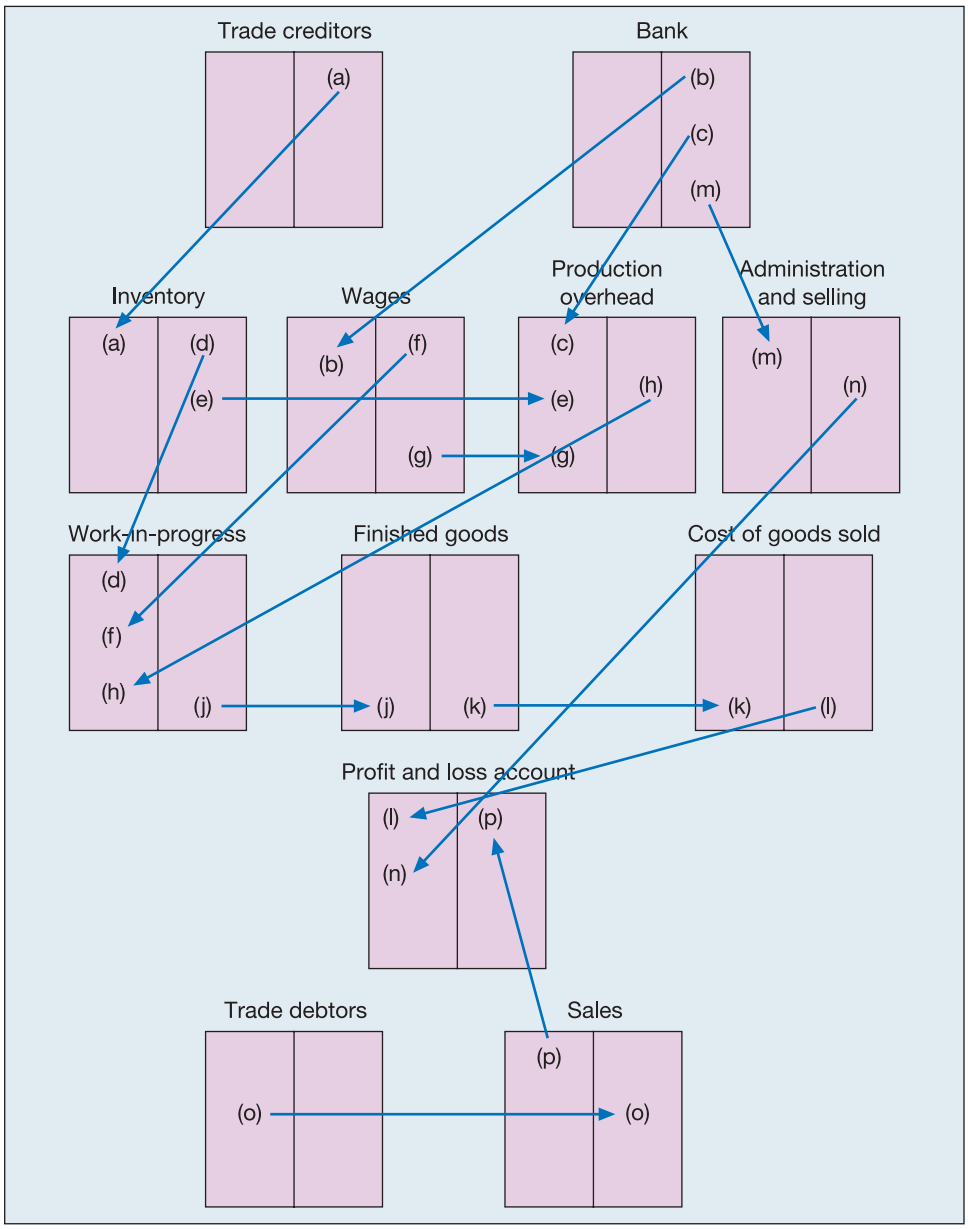
When inventory is acquired an asset is created, shown by a debit entry in the inventory account (a). In this instance the inventory has been purchased on credit terms, shown by a credit entry in the account for trade creditors (a).

When direct materials are issued to production, they cease to be part of the asset of inventory and are transferred to the asset of work-in-progress (d). Some of the materials acquired may be indirect materials (e), which are transferred to the production overhead account (e). All production overhead costs are collected together before being transferred to work-in-progress using a suitable overhead cost rate.

7.3.2 Labour costs

In the situation where the wages are paid immediately from the bank account, an expense is incurred, so there is a debit entry in the wages account (b). The asset of cash is reduced, recorded as a credit entry (b).

Figure 7.1
Diagrammatic representation of the flow of costs and revenue in a job-costing system



The wages are then subdivided for cost accounting purposes into direct labour and indirect labour. The direct labour (f) is transferred to the work-in-progress account while the indirect labour (g) is transferred to the production overhead account.

Detailed job cost records show the amount of direct labour time spent on each job.

7.3.3 Production overhead costs

Production overhead costs incurred as a result of cash payments are debited as costs in the production overhead account (c). There they join the production overhead costs transferred from other ledger accounts (e) and (g). Detailed job cost records will show the amount of time that employees have worked on the job, causing overhead costs

to be incurred. This information will be sufficient to authorise transfers from the production overhead account to the work-in-progress account (h). All production overheads (h) are then transferred to the work-in-progress account so that work-in progress now contains the prime cost (direct materials and direct labour) and all the production overhead costs.

7.3.4 Completion of work-in-progress

When work-in-progress is completed it becomes another asset, finished goods. The completed work-in-progress (j) is transferred to finished goods. When the finished goods are sold they are transferred to the cost of sales account (k) and from there to the profit and loss account (l) which is produced for management accounting purposes.

7.3.5 Administration and selling

There are other overhead costs incurred, such as administration and selling costs, which are not part of the production cost. They are credited in the cash account (m), showing a reduction in the asset of cash, and are debited as expenses in a separate account for administration and selling overheads. From there these administration and selling overhead costs are transferred to profit and loss account (n).

7.3.6 Revenues

Revenue is created for the enterprise by selling goods on credit. The increase in revenue is credited in the sales account (o) while the increase in the asset of debtors is recorded as a debit in the debtors' control account (o). Finally the revenue is transferred from the sales account to the profit and loss account (p).

7.4 Recording transactions for a job-costing system

In this section the general scheme outlined in Figure 7.1 is applied to the practical example, Specialprint, which was explained in Chapter 6. Exhibit 7.1 summarises the transactions of Exhibit 6.2 (Chapter 6). These transactions relate to work undertaken by Specialprint, a company which prints novelty stationery to be sold to a chain of

Exhibit 7.1
Specialprint: transactions for the month of June

1 June	Bought 60 rolls of paper on credit from supplier, invoiced price being £180,000
1 June	Bought inks, glue and dyes, cost £25,000 paid in cash
2 June	Returned to supplier one roll, damaged in transit, £2,500
3 June	Rolls of paper issued to printing department, cost £120,000
4 June	Issued half of inks, glues and dyes to printing department, £12,500
14 June	Paid printing employees' wages £8,000
14 June	Paid maintenance wages £250
16 June	Paid rent, rates and electricity in respect of printing, £14,000, in cash
28 June	Paid printing employees' wages £8,000
28 June	Paid maintenance wages £250
30 June	Transferred printed stationery to finished goods inventory, valued at cost of £160,000
30 June	Sold stationery to customer on credit, cost of goods sold being £152,000

retail stores. The company has only one customer for this novelty stationery. Each transaction is now analysed to determine the relevant journal entry. A brief explanation is provided for each entry. The resulting ledger accounts are presented in Table 7.3 (on p. 156). After reading the explanation of each transaction, you should follow it through into Table 7.3 to see how the ledger entries are built up.

7.4.1 Acquisition of inventory: direct materials

In purchasing the rolls of paper, the business acquires an asset, shown by a debit entry in the ledger account for materials inventory. In taking credit from the supplier it incurs a liability, shown by a credit entry in the ledger account for a trade creditor.

1 June	Materials inventory Trade creditor	Dr	180,000	 Cr	 180,000

7.4.2 Acquisition of inventory: indirect materials

In purchasing the inks, glue and dyes, the business acquires a further asset, shown by a debit entry in the ledger account for materials inventory. In exchange, the asset of cash has diminished, shown by a credit entry in the cash account.

1 June	Materials inventory Cash	Dr	25,000	 Cr	 25,000

7.4.3 Return of inventory to a supplier

Returning the damaged roll of paper reduces the asset of materials inventory, shown by a credit entry, and reduces the liability to the trade creditor, shown by a debit entry.

2 June	Trade creditor Materials inventory	Dr	2,500	 Cr	 2,500

7.4.4 Converting raw materials into work-in-progress: direct materials

When the rolls of paper are issued from the stores to the printing department, they become a part of the work-in-progress of that department. Since this work-in-progress is expected to bring a benefit to the enterprise in the form of cash flows from sales when it is eventually finished and sold, it meets the definition of an asset. The increase in the asset of work-in-progress is shown by a debit entry, while the decrease in the inventory of materials is shown by a credit entry.

3 June	Work-in-progress Materials inventory	Dr	120,000	 Cr	 120,000

7.4.5 Treatment of indirect materials

Inks, glue and dyes are indirect materials. The ledger recording for indirect materials differs from that used for direct materials. The indirect cost is transferred to the production overhead account, to be accumulated with other indirect costs and later transferred to work-in-progress as a global figure for production overhead. In this case only half of the indirect materials have been issued (£12,500), the rest remaining in inventory.

4 June	Production overhead Materials inventory	Dr	12,500	Cr	12,500

7.4.6 Paying the wages

There are two amounts of direct labour costs paid during the period in respect of the printing employees, and two amounts of indirect wages in respect of maintenance. For each amount the wages account is debited (because an expense has occurred) and the cash account is credited because the asset of cash has decreased. At this point no distinction is made between direct and indirect labour because they all form part of the total labour cost. That information is required for other purposes (such as the external financial reporting).

It will only be after analysis of the labour records for the period that an accurate subdivision into direct and indirect costs may be made. Although it is assumed here that all wages of printing employees are direct costs, it could be that enforced idle time through equipment failure would create an indirect cost. (For simplification in this example, income taxes and employer's costs in relation to employees are omitted.)

14 June	Wages Cash	Dr	8,000	Cr	8,000
28 June	Wages Cash	Dr	8,000	Cr	8,000
14 June	Wages Cash	Dr	250	Cr	250
28 June	Wages Cash	Dr	250	Cr	250

7.4.7 Payment for production overhead costs

Rent, rates and electricity costs paid from cash in respect of printing are production overhead costs. They are debited to the cost of production overhead. There is a credit entry in the cash account in this case. (In practice, overhead costs are also incurred on credit terms.)

16 June	Production overhead Cash	Dr	14,000	Cr	14,000

7.4.8 Recording indirect labour as a production overhead cost

The indirect labour cost is treated similarly to the indirect materials. At the end of the month the cost is transferred from wages to production overhead so that all overhead costs are accumulated together.

30 June	Production overhead Wages	Dr	500	Cr	500

7.4.9 Completing the work-in-progress account: direct labour

The direct labour cost amounts to £16,000 and forms part of the prime cost of work-in-progress. At the end of the month a debit entry is made in the work-in-progress

account because the direct labour cost is adding to the value of the asset of work-in-progress. A credit entry is made in the wages account because the cost previously recorded there is now being transferred elsewhere.

30 June	Work-in-progress Labour cost	Dr	16,000	 Cr	 16,000

In a computerised accounting system the transfer to the work-in-progress account would follow immediately on the payment of wages, so that there would be a debit entry in the wages account recording the cost, and a credit entry transferring it to work-in-progress, both on the same date. In a manual system, more of the transfer entries may be left until the end of the month, when management reports are being prepared.

7.4.10 Taking production overheads to the work-in-progress account

It may be seen from Table 7.3 that there is now a total of £27,000 debited to the production overhead ledger account. At the end of the month it is all transferred to the work-in-progress account by a credit entry in the production overhead account (reducing the expense recorded there) and debiting the work-in-progress account (adding to the value of the asset).

30 June	Work-in-progress Production overhead	Dr	27,000	 Cr	 27,000

This transfer will enable the value of work-in-progress to be shown at full cost at the end of the month.

7.4.11 Transferring work-in-progress to finished goods

As the asset of work-in-progress is completed, it changes into another asset, the inventory of finished goods. A credit entry removes the asset from work-in-progress and a debit entry records its new existence as the asset of finished goods.

30 June	Finished goods inventory Work-in-progress	Dr	160,000	 Cr	 160,000

7.4.12 Sale of goods

When a sale is made to a customer, the asset of finished goods inventory is transformed into the expense of cost of goods sold. The expense is recorded by making a debit entry in the cost of goods sold account. The reduction in the asset is shown by a credit entry in the finished goods inventory account. Any balance remaining on the finished goods inventory account represents unsold goods.

30 June	Cost of goods sold Finished goods inventory	Dr	152,000	 Cr	 152,000

Activity 7.2

Check over each of the transactions described in sections 7.4.1 to 7.4.12. Make sure you understand each one. Using a pencil, tick each entry in Table 7.3 to check that you have understood the entry for each transaction.

Table 7.3
Specialprint – ledger account entries

		£			£
			Cash account		
			1 June	Materials	25,000
			14 June	Wages	8,000
			14 June	Wages	250
			16 June	Rent, Rates, etc	14,000
			28 June	Wages	8,000
30 June	Balance c/d	55,500	28 June	Wages	250
		55,500			55,500
			1 July	Balance b/d	55,500
			Trade creditor		
2 June	Materials returned	2,500	1 June	Materials	180,000
30 June	Balance c/d	177,500			
		180,000			180,000
			1 July	Balance b/d	177,500
			Materials inventory		
1 June	Trade creditor, (paper rolls)	180,000	2 June	Returned to supplier	2,500
1 June	Cash (inks, glue, dyes)	25,000	3 June	Work-in-progress	120,000
			4 June	Production overhead	12,500
			30 June	Balance c/d	70,000
		205,000			205,000
1 July	Balance b/d	70,000			
			Wages		
14 June	Cash	8,000	30 June	Production overhead	500
14 June	Cash	250	30 June	Work-in-progress	16,000
28 June	Cash	8,000			
28 June	Cash	250			
		16,500			16,500
			Production overhead		
4 June	Materials inventory	12,500	30 June	Work-in-progress	27,000
16 June	Cash	14,000			
30 June	Wages	500			
		27,000			27,000
			Work-in-progress		
3 June	Direct materials	120,000	30 June	Finished goods	160,000
30 June	Direct labour	16,000	30 June	Balance c/d	3,000
30 June	Production overhead	27,000			
		163,000			163,000
1 July	Balance b/d	3,000			
			Finished goods inventory		
30 June	Work-in-progress	160,000	30 June	Cost of goods sold	152,000
			30 June	Balance c/d	8,000
		160,000			160,000
1 July	Balance b/d	8,000			
			Cost of goods sold		
30 June	Finished goods	152,000			

Real world case 7.2

The following extract is taken from publicity material for a company called My.N.

Once you have turned a quote into a job, you will need to book costs in a number of different ways. The integration of your stock system means that items brought into the job from stock are automatically taken out of stock and booked to work in progress. This result of this is that both your stock, and the costs attributed to the job are automatically updated. Any items not in stock can either be left to go onto back order, or you can generate a purchase order directly from the job. Items ordered in this way are booked straight to the job on receipt. Additional costs such as external consulting and plant hire costs can also be handled in this way and booked directly to the job. Labour and production cost can be booked directly to the job or you can post labour costs through the time sheet. So from whatever direction you are incurring costs, My.N's Job Costing Software is able to bring them in and account for them accurately, and in real time.

To summarise, costs can be added to a job by:

- picking stock and adding it to the order;
- booking the receipt of a purchase order item directly to the job;
- despatching stock (where an item is flagged as 'delivery required');
- posting timesheets;
- booking labour or production costs to the order.

Costs assigned to a customer job are automatically posted to the work in progress account. They will remain there until removed from the order.

Source: http://www.jobcostingsoftware.net/jobcosts.html.

Discussion points

1 What steps are taken in the job-costing process?

2 How will a computerised system save time compared to manual recording?

7.5 The use of control accounts and integration with the financial accounts

Exhibit 7.1 has shown the recording of a set of transactions in ledger accounts which follow the diagram outlined in Figure 7.1, but although it shows the basic rules of bookkeeping applied to a set of transactions it is not sufficiently detailed to be of practical use in management accounting. The company will need to have separate information about the different types of novelty stationery produced, the different types of materials used in manufacture, the various labour resources used and the range of production overhead costs applied.

Where a business is complex and has large numbers of transactions, those transactions are collected together in what are called **cost control accounts** (also called total

Exhibit 7.2

Practical example of the use of control accounts (total accounts)

The following information for Specialprint is reproduced from Exhibit 6.2 of Chapter 6.

In this exhibit, various symbols appear in the second column. These symbols are used in the ledger accounts of Tables 7.4 to 7.7 as an aid to identifying how the subsidiary records match up to the items in the control accounts.

Date	*Symbol*	*Transaction*
1 June	☝	Bought 60 rolls of paper on credit from supplier, invoiced price being £180,000. The rolls of paper acquired consisted of two different grades. 40 rolls were of medium-grade paper at a total cost of £100,000 and 20 rolls were of high grade at a total cost of £80,000.
1 June	♣	Bought inks, glues and dyes at a cost of £25,000 paid in cash. The inks cost £9,000 while the glue cost £12,000 and the dyes £4,000.
2 June	⊗	Returned to supplier one roll of paper damaged in transit, cost £2,500. The roll of paper returned was of medium grade.
3 June	†	Rolls of paper issued to printing department, cost £120,000. 20 high-grade rolls were issued, together with 16 medium-grade rolls. There were three separate jobs: references 601, 602 and 603. The high-grade rolls were all for job 601 (notepaper); 12 medium-grade rolls were for job 602 (envelopes) and the remaining 4 medium-grade rolls were for job 603 (menu cards).
4 June	ø	Issued half of inks, glues and dyes to printing department, £12,500. Exactly half of each item of inks, glue and dyes was issued, for use across all three jobs.
14 June	Ψ	Paid printing employees' wages £8,000. Wages were paid to 10 printing employees, each earning the same amount.
14 June	λ	Paid maintenance wages £250. Maintenance wages were paid to one part-time maintenance officer.
16 June	‡	Paid rent, rates and electricity in respect of printing, £14,000 in cash. Payment for rent was £8,000, rates £4,000 and electricity £2,000.
28 June	ϖ	Paid printing employees' wages £8,000. Wages were paid to the same 10 employees as on 14 June.
28 June	φ	Paid maintenance wages £250. Maintenance wages were paid to the same maintenance officer as on 14 June.
30 June	♥	Employee records show that: 5 printing employees worked all month on job 601; 3 printing employees worked on job 602; and 2 printing employees worked on job 603.
30 June	ξ	It is company policy to absorb production overheads in proportion to labour costs of each job.
30 June	#	Transferred printed stationery to finished goods stock at a total amount of £160,000, in respect of jobs 601 and 602, which were completed, together with the major part of job 603. There remained some unfinished work-in-progress on one section of job 603, valued at £3,000. Separate finished goods records are maintained for notepaper, envelopes and menu cards.
30 June	≈	Sold stationery to customer on credit, cost of goods sold being £152,000. The customer took delivery of all notepaper and all envelopes, but took only £7,600 of menu cards, leaving the rest to await completion of the further items still in progress.

accounts because they control the total transactions of the type being recorded). Separate records for each job (also called secondary records) are available to show the detailed analysis of those control accounts.

Definition

A **cost control account** is a record of the total transactions relating to the costs being recorded. A control account is also called a **total account**. The control account is supported by secondary records showing detailed costs for each job separately.

The use of control accounts allows the management accounting records to be integrated with the financial accounting records. The main ledger contains the control accounts, while the detailed information is recorded outside the main ledger. The control accounts are sufficiently aggregated to be of use for financial accounting purposes where only the total costs of each main category are required.

This section explains the progress of costs through the control accounts in the main ledger until they reach the profit and loss account. It illustrates the use of control accounts and secondary records by expanding on the example contained in Table 7.3.

You will find that the accounts shown in diagram form in Figure 7.1 and in the practical example of Table 7.3 will become the control accounts and that new, more detailed, secondary records will be provided to support these control accounts.

The use of control accounts and subsidiary records may be illustrated by returning to the transactions of Exhibit 7.1 and the ledger accounts of Table 7.3. Those ledger accounts are *all* control accounts (total accounts) because the total amount of each transaction was entered without any analysis into more detailed elements. Consider now the additional information contained in Exhibit 7.2, which will be used to prepare the subsidiary records supporting the control accounts.

7.5.1 Acquisition of inventory: direct and indirect materials costs (Table 7.4)

For accurate control of stores it would be necessary to maintain a separate stores ledger record for each type of material held. Five different types of material are mentioned in Exhibit 7.2 and so five separate ledger accounts are shown in Table 7.4. The separate debits and credits in each ledger account may be seen to equal the total entries in the main ledger account for materials inventory, reproduced here from Table 7.3, and now renamed as the *materials inventory control account* (or total account). Symbols to the right of each monetary amount show the items which, added together, are equal to the corresponding total in the control account.

Activity 7.3

Compare the control account of Table 7.4 with the materials inventory account of Table 7.3 to satisfy yourself that they are the same. Then satisfy yourself that the separate job accounts in Table 7.5 add up to the totals in the control account.

7.5.2 Wages: direct and indirect labour costs (Table 7.5)

The wages account shown in Table 7.3 becomes the wages control account which will be supported by records for 10 individual employees, each debited with £800 on 14 June and £800 on 28 June. There will be a separate employee record for the maintenance officer, debited with £250 on 14 June and £250 on 28 June. Transfers from the employee records will be to the various jobs on which each employee has worked.

There will be ten separate employee records. Employees 1 to 5 work on job 601 so the direct cost of their labour (£8,000) is transferred to job 601 at the end of the month. Employees 6 to 8 work on job 602 so the direct cost of their labour (£4,800) is transferred

Table 7.4
Inventory accounts for each inventory item and inventory control account

		High-grade paper			
1 June	Trade creditor (20 rolls)	80,000 ☝	3 June	Job 601	80,000 †
		plus			
		Medium-grade paper			
1 June	Trade creditor (40 rolls)	100,000 ☝	1 June	Returned (1 roll)	2,500 ⊗
			3 June	Job 602 (12 rolls)	30,000 †
			3 June	Job 603 (4 rolls)	10,000 †
			30 June	Balance c/d (23 rolls)	57,500 *
		100,000			100,000
1 July	Balance b/d	57,500 *			
		plus			
		Inks			
1 June	Cash	9,000 ♣	4 June	Production overhead	4,500 ø
			30 June	Balance c/d	4,500 *
		9,000			9,000
1 May	Balance b/d	4,500 *			
		plus			
		Glue			
1 June	Cash	12,000 ♣	4 June	Production overhead	6,000 ø
			30 June	Balance c/d	6,000 *
		12,000			12,000
1 July	Balance b/d	6,000 *			
		plus			
		Dyes			
1 June	Cash	4,000 ♣	4 June	Production overhead	2,000 ø
			30 June	Balance c/d	2,000 *
		4,000			4,000
1 July	Balance b/d	2,000 *			
		equals			
		Materials inventory control account			
1 June	Trade creditor, (paper rolls)	180,000 ☝	2 June	Returned to supplier	2,500 ⊗
1 June	Cash (inks, glue, dyes)	25,000 ♣	3 June	Work-in-progress	120,000 †
			4 June	Production overhead	12,500 ø
			30 June	Balance c/d	70,000 *
		205,000			205,000
1 July	Balance b/d	70,000 *			

to job 602 at the end of the month. Employees 9 and 10 work on job 603 and the direct cost of their labour (£3,200) is transferred to job 603 at the end of the month.

The transfer from the maintenance officer's record will be to a record which collects all indirect labour costs (which might include printing employee costs if they had unproductive time on their time-sheets). That indirect labour record is one of the subsidiary records supporting the production overhead control account.

Table 7.5
Wages accounts for each employee and wages control account

Printing employee number 1					
14 June	Cash	800 Ψ	30 June	Job 601	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 2					
14 June	Cash	800 Ψ	30 June	Job 601	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 3					
14 June	Cash	800 Ψ	30 June	Job 601	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 4					
14 June	Cash	800 Ψ	30 June	Job 601	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 5					
14 June	Cash	800 Ψ	30 June	Job 601	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 6					
14 June	Cash	800 Ψ	30 June	Job 602	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 7					
14 June	Cash	800 Ψ	30 June	Job 602	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 8					
14 June	Cash	800 Ψ	30 June	Job 602	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 9					
14 June	Cash	800 Ψ	30 June	Job 603	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Printing employee number 10					
14 June	Cash	800 Ψ	30 June	Job 603	1,600 ♥
28 June	Cash	800 ϖ			
		1,600			1,600
Maintenance officer					
14 June	Cash	250 λ	30 June	Indirect labour	500 ♦
28 June	Cash	250 φ			
		500			500
Wages control account					
14 June	Cash	8,000 Ψ	30 June	Work-in-progress	16,000 ♥
14 June	Cash	250 λ	30 June	Production overhead	500 ♦
28 June	Cash	8,000 ϖ			
28 June	Cash	250 φ			
		16,500			16,500

The total of all the entries in each of the individual employee records equals the total shown in the wages account of Table 7.3, now renamed as the *wages control account*.

Activity 7.4

Compare the control account of Table 7.5 with the wages account of Table 7.3 to satisfy yourself that they are the same. Then satisfy yourself that the separate job accounts in Table 7.5 add up to the totals in the control account.

7.5.3 Production overhead costs (Table 7.6)

The *production overhead control account* will be supported by one subsidiary record for each type of overhead cost. The payments on 16 June relate to rent, rates and electricity,

Table 7.6
Production overhead accounts for each cost item, and production overhead control account

Production overhead: rent *Overhead cost rate = 25p per £ of direct labour*					
16 June	Cash	8,000 ‡	30 June	Job 601	4,000 ξ
				Job 602	2,400 ξ
				Job 603	1,600 ξ
		8,000			8,000
Production overhead: rates *Overhead cost rate = 50p per £ of direct labour*					
16 June	Cash	4,000 ‡	30 June	Job 601	2,000 ξ
				Job 602	1,200 ξ
				Job 603	800 ξ
		4,000			4,000
Production overhead: electricity *Overhead cost rate = 12.5p per £ of direct labour*					
16 June	Cash	2,000 ‡	30 June	Job 601	1,000 ξ
				Job 602	600 ξ
				Job 603	400 ξ
		2,000			2,000
Production overhead: indirect material *Overhead cost rate = 78.125p per £ of direct labour*					
4 June	Ink	4,500 ø		Job 601	6,250 ξ
	Glue	6,000 ø		Job 602	3,750 ξ
	Dyes	2,000 ø		Job 603	2,500 ξ
		12,500			12,500
Production overhead: indirect labour *Overhead cost rate = 3.125p per £ of direct labour*					
30 June	Maintenance officer	500 ♦		Job 601	250 ξ
				Job 602	150 ξ
				Job 603	100 ξ
		500			500
Production overhead control account					
4 June	Materials inventory	12,500 ø	30 June	Work-in-progress	27,000 ξ
16 June	Cash	14,000 ‡			
30 June	Wages	500 ♦			
		27,000			27,000

each of which will require a separate record. Additionally there are overheads of indirect materials and indirect labour created by transfers from other records.

We are told in Exhibit 7.2 that production overheads are allocated in proportion to the direct labour costs of each job. The total direct labour cost for the period is £16,000 and so for each item of production overhead the overhead cost rate must be calculated as:

$$\text{Overhead cost rate (in £ per £ of direct labour)} = \frac{\textit{overhead cost}}{\text{£16,000}}$$

For indirect material the calculations are slightly more complex. The total indirect material cost transferred to production overhead is £12,500. The overhead cost rate is therefore calculated as:

$$\frac{\text{£12,500}}{\text{£16,000}} = 78.125 \text{ pence per £ of direct labour}$$

This rate is then applied to the amounts of direct labour already charged to each job (which was £8,000 for job 601, £4,800 for job 602 and £3,200 for job 603). The resulting amounts are transferred from the indirect materials account to the relevant job records.

For indirect labour the only item is the cost of the maintenance officer.

Adding together all these subsidiary records gives amounts equal to the totals in the production overhead control account. In the ledger accounts different symbols are shown to the right-hand side of each monetary amount as an indication of the items which add to give the respective totals.

Activity 7.5

Compare the control account of Table 7.6 with the production overhead account of Table 7.3 to satisfy yourself that they are the same. Then satisfy yourself that the separate wages accounts in Table 7.5 add up to the totals in the control account.

7.5.4 Work-in-progress (Table 7.7)

Work-in-progress records are maintained for each job. The total of the separate job records will equal the total of the work-in-progress control account. The separate job records now follow, with symbols indicating those individual amounts which correspond to the totals in the *work-in-progress control account*.

7.5.5 Finished goods inventory (Table 7.8)

There must be a separate record for each line of finished goods, the total of which is represented by the control account for finished goods. In this example there are three categories of finished goods, namely notepaper (produced by job 601), envelopes (produced by job 602) and menu cards (produced by job 603).

There will be three different records for finished goods, which may be notepaper, envelopes or menu cards. The total of the three separate records is £160,000 which equals the amount shown by the *finished goods control account*.

Finally, the sale of goods to the customer is recognised by a transfer from the finished goods inventory to the cost of goods sold account. In order to analyse each product line separately, there will be separate cost of goods sold accounts for each item (notepaper, envelopes and menu cards) and a cost of goods control account to record the total amount.

Table 7.7
Work-in-progress subsidiary records and control account

		Work-in-progress: job 601			
3 June	Direct materials	80,000 †	30 June	Finished goods	101,500 #
30 June	Direct labour	8,000 ♥			
30 June	Production overhead:				
	Rent	4,000 ξ			
	Rates	2,000 ξ			
	Electricity	1,000 ξ			
	Indirect materials	6,250 ξ			
	Indirect labour	250 ξ			
		101,500			101,500
		Work-in-progress: job 602			
3 June	Direct materials	30,000 †	30 June	Finished goods	42,900 #
30 June	Direct labour	4,800 ♥			
30 June	Production overhead:				
	Rent	2,400 ξ			
	Rates	1,200 ξ			
	Electricity	600 ξ			
	Indirect materials	3,750 ξ			
	Indirect labour	150 ξ			
		42,900			42,900
		Work-in-progress: job 603			
3 June	Direct materials	10,000 †	30 June	Finished goods	15,600 #
30 June	Direct labour	3,200 ♥	30 June	Balance c/d	3,000 *
30 June	Production overhead:				
	Rent	1,600 ξ			
	Rates	800 ξ			
	Electricity	400 ξ			
	Indirect materials	2,500 ξ			
	Indirect labour	100 ξ			
		18,600			18,600
1 July	Balance b/d	3,000 *			
		Work-in-progress control account			
3 June	Direct materials	120,000 †	30 June	Finished goods	160,000 #
30 June	Direct labour	16,000 ♥	30 June	Balance c/d	3,000 *
30 June	Production overhead	27,500 ξ			
		163,000			163,000
1 July	Balance b/d	3,000 *			

Activity 7.6

Compare the control account of Table 7.7 with the work-in-progress account of Table 7.3 to satisfy yourself that they are the same. Then satisfy yourself that the separate job accounts in Table 7.7 add up to the totals in the control account.

Table 7.8
Finished goods subsidiary records and control account

Finished goods inventory: notepaper					
30 June	Job 601	101,500#	30 June	Cost of goods sold	101,500≈
Finished goods inventory: envelopes					
30 June	Job 602	42,900#	30 June	Cost of goods sold	42,900≈
Finished goods inventory: menu cards					
30 June	Job 603	15,600#	30 June	Cost of goods sold	7,600≈
Finished goods inventory control account					
30 June	Work-in-progress	160,000#	30 June	Cost of goods sold	152,000≈

Activity 7.7

Compare the control account of Table 7.8 with the finished goods account of Table 7.3 to satisfy yourself that they are the same. Then satisfy yourself that the separate job accounts in Table 7.8 add up to the totals in the control account.

7.6 Contract accounts

One specific application of job costing is in recording contracts which are relatively large in relation to the magnitude of the organisation's activity as a whole, and usually require more than one accounting period for completion. Such large 'jobs' are normally carried out under a legal contract which sets out the conditions of performance required of the enterprise and the conditions of payment to be imposed on the customer.

Because of the size and significance of such a contract, it is common practice to open a separate job cost record in which to collect all costs and revenues of the project so that the document eventually records also the profit on the contract.

7.6.1 Main features of a contract

Before moving on to the accounting aspects, it is necessary to set out some of the main features of most contracts. The contract is usually for some substantial work based on building or engineering applications, but could be a contract for services such as cleaning a building or providing security cover. Because the contract is agreed in very specific terms, most costs will be directly related to the project. Materials, labour and direct expenses will be identifiable with the project. Labour requirements may be provided by employees of the organisation or may be subcontracted to other businesses. Special equipment may be required for the project. The head office of the organisation will seek to charge overhead costs to the project.

Incomplete contract

If the contract is incomplete at the year-end a portion of profit may nevertheless be recognised, on the basis that the work has been done and the profit on that work is earned. If there was no report on profit as the contract progressed, that would give a very distorted picture of the activity of the business. If a contract to build a bridge lasted three years then reporting profit only on completion would give an impression of no activity in the first two years and then high activity in the third year.

In order to achieve a measure of objectivity in assessing the amount of profit earned on a partly completed project, it is normal to seek the opinion of an expert (architect, surveyor or engineer, for example) on the *value of work completed* to date. Any work not certified as being completed at the balance sheet date is carried forward as work-in-progress.

Taking profit as the work progresses is attractive as an application of the accruals concept but is felt to be risky in the context of the prudence concept. In the case of contracts this has led to a wide range of practice across and within the various industries. However, it would be safe to assume that most companies would seek to make some provision against being over-optimistic on a long-term contract.

Payments by the customer

Where the contract lasts over a longer period of time, it is quite usual for the enterprise to ask the customer to make *payments on account of progress*. Invoices for these progress payments are made as soon as the technical expert has certified as complete a stage of the project. When the customer makes a progress payment in advance, the sum is effectively a liability from the point of view of the company receiving the payment. If for any reason the contract were not to be completed, the payment would have to be refunded to the customer.

Activity 7.8

Look at a major development contract under way somewhere near you. Write down some items of costs that relate to the project. Then think about the time scale to complete the project and how the costs will be spread over the contract life.

7.6.2 Recording transactions for a contract

Because a contract is usually a significant activity for the business, the job cost record is used to show every aspect of the contract, including all costs incurred, whether for the current or a later period, and the periodic profit. An example of a job cost record is shown in Table 7.9.

Table 7.9
Job cost record

Contract job cost record Year 1		
Year 1		£000s
Date	Materials purchased	xx
Date	Wages paid	xx
Date	Direct costs paid	xx
Date	Subcontractors paid	xx
Date	Equipment at cost purchased	xx
Date	Architect's fee paid	xx
Date	Head office charges	xx
Date	Due to subcontractor	xx
Date	Direct costs due to suppliers	xx
	Total costs charged Year 1	xxx
	Carry to next period:	
End year	Materials on site	(xx)
End year	Equipment on site	(xx)
End year	Cost of work certified for Year 1	xxx

Costs incurred during the accounting period

The materials, labour, direct and indirect costs of a contract job are recorded on the job card when paid for or when acquired from a supplier who becomes a creditor of the

business. One unusual feature is that any equipment purchased for the contract is recorded in full as soon as it is acquired. The entries for costs are highlighted in Table 7.10.

Table 7.10
Job cost record: entering all costs of the period

Contract job cost record Year 1		
Year 1		£000s
Date	Materials purchased	xx
Date	Wages paid	xx
Date	Direct costs paid	xx
Date	Subcontractors paid	xx
Date	Equipment at cost purchased	xx
Date	Architect's fee paid	xx
Date	Head office charges	xx
Date	Due to subcontractor	xx
Date	Direct costs due to suppliers	xx
	Total costs charged Year 1	xxx
	Carry to next period:	
End year	Materials on site	(xx)
End year	Equipment on site	(xx)
End year	Cost of work certified for Year 1	xxx

Items remaining at the end of an accounting period

At the end of each accounting period the value of equipment and materials remaining on site is estimated. The difference between the original cost and the valuation equals the amount of material and equipment consumed by the contract. Items remaining on site are regarded as assets for the next period. The cost of work certified for the period is the difference between the total costs recorded and the amount carried forward to the next period. These entries are highlighted in Table 7.11.

Table 7.11
Job cost record: items remaining at the end of the period

Contract job cost record Year 1		
Year 1		£
Date	Materials purchased	xx
Date	Wages paid	xx
Date	Direct costs paid	xx
Date	Subcontractors paid	xx
Date	Equipment at cost purchased	xx
Date	Architect's fee paid	xx
Date	Head office charges	xx
Date	Due to subcontractor	xx
Date	Direct costs due to suppliers	xx
	Total costs charged Year 1	xxx
	Carry to next period:	
End year	Materials on site	(xx)
End year	Equipment on site	(xx)
End year	Cost of work certified for Year 1	xxx

Matching costs with revenues of the accounting period

In the statement of contract profit, Table 7.12, an entry will be made for the sales value of work certified by an expert as being complete. Deducting costs of the project from the estimated sales value of work certified will give a profit figure for the period. There are no firm rules as to how much of this profit should be reported for the period, but many companies would report less than the full amount, as a prudent measure. Various formulae are used to decide how much profit to report, but a useful rule of thumb at this stage might be to suggest reporting around two-thirds of the profit calculated.

Table 7.12
Statement of contract profit

		£
Revenue	Value of work certified	xx
Cost	Cost of work certified	xx
Profit calculated	Profit of the period	xx
Deduction for uncertainty	Less portion not reported this period (around one third of calculated profit)	xx
Profit reported	Profit to be reported for Year 1	xx

7.6.3 Contract ledger accounts

When a contract commences, a new ledger account is opened. All direct costs are debited to the contract account and all assets acquired for the contract are also debited.

Direct labour and direct overhead costs should present no problem in being identified and charged to the contract account. There may also be an indirect cost charged in the form of a head office overhead allocation.

At the end of the accounting period the value of equipment and materials remaining on site is estimated. The difference between the original cost and the valuation equals the amount of material and equipment consumed by the contract. Items remaining on site are carried forward as assets to the next period.

On the revenue side of the contract, an entry will be made for the sales value of work certified by an expert as being complete. Deducting costs of the project from the estimated sales value of work certified will give a profit figure for the period.

Finally, the balances taken forward at the end of the accounting period become the opening balances for the next period.

7.7 Illustration of contract accounting

The following sections set out the method of recording the transactions on a contract which lasts 15 months in total and straddles two accounting periods. Office Builders Ltd undertook a contract to build the Western Office Complex for a fixed price of £390,000 during the period from May Year 1 to July Year 2. Exhibit 7.3 gives information for Year 1 which is presented as a job cost record in Table 7.13, leading to a statement of contract profit in Table 7.14. Table 7.15 gives information for Year 2 which is presented as a job cost record in Table 7.16 and a statement of contract profit in

Exhibit 7.3

Office Builders Ltd: Contract for Western Office Complex

Office Builders Ltd undertook a contract to build the Western Office Complex for a fixed price of £390,000 during the period from May Year 1 to July Year 2. This table sets out transactions up to the company's year end in December, Year 1.

Transactions during Year 1:		£000s
May	Materials purchased and delivered to site	87
May	Equipment delivered to site	11
July	Architect's fee	6
June–Dec	Materials issued from store	51
May–Dec	Wages paid on site	65
Sept	Payment to subcontractors	8
May–Dec	Direct costs	25
Dec	Head office charges	7
At the end of Year 1		
Dec	Value of equipment remaining on site	7
Dec	Value of material remaining on site	32
Dec	Sales value of work certified	240
Dec	Amount due to subcontractors	5
Dec	Direct costs incurred but not yet paid	8

Table 7.17. The overall profit on the contract is presented in Table 7.18 and explained in terms of the profit reported in the two separate reporting periods.

7.7.1 Recording the transactions

In respect of materials, £87,000 was purchased and £51,000 recorded as being issued. It might be expected that this would leave £36,000 to be carried forward in store. But only £32,000 of materials were found at the end of the year, implying that £4,000-worth of materials has either been scrapped, because of some defect, or been removed without authority. In practice this would probably lead to an investigation of the control system to discover why some materials have apparently disappeared. The ledger account entries do not show the detail of materials issued, but instead assume that any material not contained in the physical check at the end of the year must have been used on the contract.

The equipment delivered to the site had a cost of £11,000 and an estimated value of £7,000 remaining at the end of the year. Depreciation is therefore £4,000.

The cost of work certified is the total of the costs incurred to date on that portion of the work approved by the architect. In this case the work has been certified at the end of the accounting year so there is no problem in deciding which costs to treat as cost of goods sold and which to carry forward. If the work had been certified before the end of the financial year, any subsequent costs would also need to be carried forward to be matched against future estimated sales value of work done.

An architect's fee would be quite common on contract work of this type. Provided the fee is specific to the project, it forms a direct cost which must be included in the contract account.

All further expenditure of the period, such as wages, other direct costs and payments to subcontractors, are debited to the contract because they are, or will become, costs of the contract. At the end of the accounting period a count is taken of everything remaining unused on the site and this count forms the basis for determining how much of the 'expense' should be carried forward as an asset for the next period.

Any costs not carried to the next period will become part of the cost of goods sold, to be compared with the value of work certified in determining the profit for the period. Those managing an enterprise prudently might decide to hold in suspense some of the profit calculated in the early stages of a project, as a precaution against unforeseen problems later. Various formulae are in use for calculating this 'prudent amount' but this example will take a 'rule of thumb' approach in suggesting that taking credit for two-thirds of the profit calculated might be a reasonably prudent approach.

Table 7.13
Office Builders Ltd: job cost record of Western Office Complex for Year 1

Contract job cost record Year 1		
Year 1		£000s
May	Materials purchased	87
May	Equipment at cost	11
May	Architect's fee	6
May–Dec	Wages paid	65
Sept	Subcontractors	8
May–Dec	Direct costs	25
Dec	Head office charges	7
Dec	Due to subcontractor	5
Dec	Direct costs incurred	8
	Total costs charged Year 1	222
	Carry to next period:	
Dec	Materials on site	(32)
	Equipment on site	(7)
Dec	Cost of work certified for Year 1	183

The costs for Year 1 include all recorded payments plus costs incurred but not paid at the end of the period. These include liabilities to the subcontractor £5,000 and direct costs £8,000, which must be settled early in Year 2. Equipment on site and material on site have been paid in Year 1 but will not be used in earning revenue until Year 2. The overall cost of the work certified as completed during Year 1 is therefore £183,000 (as shown in Table 7.13).

7.7.2 Reporting the profit of the period

In the profit and loss statement for Year 1 (see Table 7.14), Office Builders Ltd has shown the total profit of £57,000 in two components. Two-thirds of this amount, £38,000, will be reported in the profit and loss account for Year 1. One-third will be held back until Year 2 as a precaution against unforeseen problems causing additional costs that might reduce the overall contract profit.

Table 7.14
Statement of contract profit to be reported in Year 1

	£000s
Value of work certified	240
Cost of work certified	183
Profit of the period	57
Less portion not reported this period (one-third of calculated profit)	(19)
Profit to be reported for Year 1	38

7.7.3 Transactions for the following period

To show the complete picture on the contract it is necessary to consider Year 2 also. Table 7.15 sets out the transactions undertaken during Year 2.

Table 7.15
Office Builders Ltd: transactions of Western Office Complex for Year 2

Transactions during Year 2:		
Jan	Paid subcontractor amount due	5
Jan	Paid direct costs due at end of Year 1	8
Feb	Materials purchased and delivered to site	24
June–Dec	Materials issued from store	56
May–Dec	Wages paid on site	31
Sept	Payment to subcontractors	17
May–Dec	Direct costs	15
Dec	Head office charges	7
At the end of Year 2		
Dec	Value of equipment remaining on site	nil
Dec	Value of material remaining on site	nil
Dec	Sales value of work certified	150
Dec	Direct costs incurred but not yet paid	8

Table 7.16 sets out the statement of costs for the second year, showing that the cost of work certified for Year 2 is £141,000.

Table 7.16
Office Builders Ltd: job cost record of Western Office Complex for Year 2

Contract job cost record Year 2		
Year 2		£000s
Jan	Material on site b/d	32
Jan	Equipment on site b/d	7
Jan–July	Materials purchased	24
Jan–July	Wages paid	31
Mar	Subcontractors	17
Jan–July	Direct costs paid	15
July	Head office charges	7
July	Direct costs incurred	8
	Cost of work certified	141

The statement of contract profit for Year 2 is set out in Table 7.17. It shows that the calculated profit for Year 2 is equal to £9,000 (£150,000 value of work certified minus £141,000 costs incurred for the period). The profit 'held back', £19,000, is added to the profit and loss section of the contract account to give an overall profit of £28,000 reported in Year 2. With the benefit of hindsight it probably was a wise precaution to hold some of the Year 1 profit back from the reported profit and it would appear possible that some of the costs incurred in Year 1 were providing a benefit to the work of Year 2.

At the end of Year 2 all of the remaining profit can be reported since the outcome is certain. In practice, there will be a further period during which the builder has responsibility to put right any defects. It would therefore be prudent to make provision again for possible losses on repairs needed before the hand-over date, but that has not been done in this illustration.

Table 7.17
Statement of contract profit to be reported in Year 2

	£000s
Value of work certified	150
Cost of work certified	141
Profit of the period	9
Add portion not reported in previous period	19
Profit to be reported for Year 1	28

7.7.4 Total contract profit

Table 7.18 shows an overall statement of profit. It reports the full contract price, against which are matched all the costs of the contract. The total contract profit is shown to be £66,000, reported as £38,000 in Year 1 and £28,000 in Year 2.

Table 7.18
Statement of total contract profit

	£000s	£000s
Contract price		390
Direct costs		
Materials (87 + 24)	111	
Labour (65 + 31)	96	
Direct costs (25 + 8 + 15 + 8)	56	
Payments to subcontractors (8 + 5 + 17)	30	
Depreciation of equipment	11	
Architect's fee	6	
	310	
Indirect costs		
Head office charges (7 + 7)	14	
		324
Total contract profit (reported as £38,000 in Year 1 and £28,000 in Year 2)		66

7.7.5 Ledger account records

The transactions of Exhibit 7.3 are recorded in the ledger accounts of Table 7.19, showing how the debit and credit entries appear in the contract account. There will, naturally be other ledger accounts, such as cash, creditors and the profit and loss account, where the other half of the journal entry may be found.

In the profit and loss section for Year 1, Office Builders Ltd has shown the total profit of £57,000 in two components. Two-thirds of this amount, £38,000, will be reported in the profit and loss account for Year 1. One-third will be held in suspense to be carried forward to Year 2 in the ledger account and await recognition there.

In the 'balances brought forward' section, two assets and two liabilities are also brought forward. Equipment on site and material on site represent the items remaining in a good state for use in Year 2. There are liabilities to the subcontractor (£5,000) and to pay for direct costs (£8,000), which must be settled early in Year 2.

To show the complete picture on the contract it is necessary to consider Year 2 also. The transactions undertaken during Year 2, as set out in Table 7.15, are set out in

Table 7.19
Office Builders Ltd: ledger accounts for Western Office Complex for Year 1

Contract account						
Current transactions section						
Year 1				*Year 1*		
May	Materials purchased	87				
May	Equipment at cost	11		Dec	Materials on site c/d	32
May	Architect's fee	6			Equipment on site c/d	7
May–Dec	Wages paid	65				
Sept	Subcontractors	8		Dec	Cost of work certified	183
May–Dec	Direct costs	25				
Dec	Head office charges	7				
Dec	Due to subcontractor c/d	5				
Dec	Direct costs incurred c/d	8				
		222				222
Profit and loss section						
Year 1				*Year 1*		
Dec	Cost of work certified b/d	183		Dec	Value of work certified	240
Dec	Profit and loss account	38				
Dec	Contract profit suspense c/d	19				
2		240				240
Balances brought forward section						
Year 2				*Year 2*		
Jan	Equipment on site b/d	7		Jan	Due to subcontractor b/d	5
	Material on site b/d	32		Jan	Due for direct costs b/d	8
				Jan	Contract profit suspense b/d	19

ledger accounts in Table 7.20. The liabilities to pay for subcontractors and for direct costs are met by payment in January.

The profit in suspense (£19,000) which was brought down with other balances at the start of Year 2 is taken to the profit and loss section of the contract account. The profit for Year 2 is equal to £9,000 (£150,000 value of work certified minus £141,000 costs incurred for the period), but adding on the profit in suspense gives an overall profit of £28,000 reported in Year 2. With the benefit of hindsight it probably was a wise precaution to hold some of the Year 1 profit back from the reported profit and it would appear possible that some of the costs incurred in Year 1 were providing a benefit to the work of Year 2.

At the end of Year 2 all profit can be reported since the outcome is certain. In practice there will be a further period during which the builder has responsibility to put right any defects. It would therefore be prudent to make provision again for possible losses on repairs needed before the hand-over date, but that has not been done in this illustration.

Although the profit is completed, the ledger account is kept open because there is still a payment due to a subcontractor, recorded in the 'balances brought forward' section. Once that payment is made, the bookkeeping records for this contract may be terminated.

If ledger accounts are not required, this procedure may be regarded as a somewhat tedious process and it may be more convenient to move directly to an overall statement of contract profit, as seen in Table 7.18.

Table 7.20
Office Builders Ltd: ledger accounts for Western Office Complex for Year 2

Contract account

Current transactions section

Year 2		£000s	Year 2		£000s
Jan	Equipment on site b/d	7	Jan	Due to subcontractor b/d	5
Jan	Material on site b/d	32	Jan	Due for direct costs b/d	8
Dec	Contract profit suspense c/d	19	Jan	Contract profit suspense b/d	19
Jan	Paid subcontractor	5			
Jan	Paid direct costs	8	July	Cost of work certified c/d	141
Jan–July	Materials purchased	24			
Jan–July	Wages paid	31			
Mar	Subcontractors	17			
Jan–July	Direct costs paid	15			
July	Head office charges	7			
July	Direct costs incurred c/d	8			
		173			173

Profit and loss section

Year 2		£000s	Year 2		£000s
Dec	Cost of work certified b/d	141	Jan	Contract profit suspense b/d	19
Dec	Profit and loss account	28	July	Sales value of work certified	150
Dec		169			169

Balances brought forward section

Year 3		£000s	Year 3		£000s
			Jan	Due to subcontractors b/d	8

7.8 What the researchers have found

As an example of a high-profile contract, Hayward (2003) reported progress on the new Wembley Stadium in London. The old football stadium, which was a well-known London landmark, was demolished in 2003 to make way for a new stadium with a target completion date of 2006. At the time of the report by Hayward, the project was scheduled to cost £757 million. The article explains the process of setting up a contract for such a large project where there are so many parties interested in the outcome.

Real world case 7.3

The following features are advertised by SAGE as being available within its 'job costing' software module.

Is this right for me?

- Keep track of job-specific information including job and customer progress and finance details.
- Record jobs by classification and add your own additional analysis fields
- Set the level of cost tracking required for each job, allocating business costs to individual activities.
- User-definable cost structures can be tailored to suit your business
- Choose when and how to invoice your customers and print invoices directly from the program
- Set and monitor your budgets
- Analyse any job at any time with the in-depth enquiry function, focusing on job progress, job costs and revenue to date
- Integrates with Sage 50 Accounts and Sage 50 Payroll, providing a comprehensive costing solution.

Source: http://shop.sage.co.uk/jobcosting.aspx.

Discussion point

1 What are the advantages of a computerised package compared to manual recording?

7.9 Summary

Key themes in this chapter are:

- A detailed explanation of the use of debit and credit bookkeeping for recording the transactions of a business in a **job-costing system**.
- An explanation and illustration of how an **integrated system** may serve the needs of both financial accounting and management accounting.
- An explanation and illustration of the use and importance of **control accounts**.
- An explanation of the method of calculating and recording costs and profits of long-term contracts.

Reference and further reading

Hayward, C. (2003), 'They thought it was all over', *Financial Management* (*UK*), November: 18–20.

QUESTIONS

The Questions section of each chapter has three types of question. '**Test your understanding**' questions to help you review your reading are in the 'A' series of questions. You will find the answer to these by reading and thinking about the material in the textbook. '**Application**' questions to test your ability to apply technical skills are in the 'B' series of questions. Questions requiring you to show skills in '**Problem solving and evaluation**' are in the 'C' series of questions. The symbol **[S]** indicates that a solution is available at the end of the book.

A Test your understanding

A7.1 How does a cost account in management accounting relate to an expense account in financial accounting (section 7.1)?

A7.2 What types of transactions are recorded as debit entries in ledger accounts for costs (section 7.1)?

A7.3 What types of transactions are recorded as credit entries in ledger accounts for costs (section 7.1)?

A7.4 Why is there no definitive list of ledger account headings for management accounting purposes (section 7.2)?

A7.5 State the debit and credit entries for each of the following types of transaction:
(a) Acquisition of inventory of materials (section 7.4.1);
(b) Return of inventory to a supplier (section 7.4.3);
(c) Payment of wages (section 7.4.6);
(d) Payment for production overhead costs (section 7.4.7).

A7.6 State the debit and credit entries for each of the following types of transaction:
(a) transfer of inventory of materials to be used as part of work-in-progress (section 7.4.4);
(b) recognition that labour cost has been incurred in creating work-in-progress (section 7.4.9);
(c) transfer of production overhead costs to work-in-progress (section 7.4.10).

A7.7 State the debit and credit entries for each of the following types of transaction:
(a) transfer of completed work-in-progress to finished goods inventory (section 7.4.11);
(b) recognition that finished goods inventory has become part of cost of goods sold when a sale takes place (section 7.4.12).

A7.8 What is the purpose of the work-in-progress account and what types of entries would you expect to see there (section 7.5.4)?

A7.9 Why is the use of control accounts essential in both management accounting and financial accounting (section 7.5)?

A7.10 Why is profit calculated on incomplete contracts, rather than waiting until the contract is completed (section 7.6.1)?

A7.11 How is the profit on an incomplete contract calculated (section 7.6.1)?

A7.12 How are payments in advance from the customer recorded (section 7.6.1)?

A7.13 How are costs of a contract recorded during an accounting period (section 7.6.2)?

A7.14 How are costs remaining at the end of the accounting period carried forward (section 7.6.2)?

A7.15 What information is provided in a statement of contract profit (section 7.6.2)?

A7.16 What is the purpose of a contract ledger account and what types of entry would you expect to see there (section 7.6.3)?

A7.17 [S] In a job-costing system, the following list of transactions for a month is to be entered in the relevant ledger accounts. In which ledger accounts would each of these figures be located?

	£
Purchases of raw materials	45,000
Wages paid to production employees	16,000
Salary of personnel manager	2,000
Sales	65,000
Heat and light expense paid	6,500

A7.18 [S] In a job-costing system, the production department orders 20 components from store at a cost of £4 each, to be used on job 36. Explain how this transaction will be recorded in a debit and credit system where control accounts are in operation.

A7.19 [S] In a job-costing system, an employee (A Jones) receives a weekly wage of £600. In week 29 this employee's time has been spent two-thirds on job 61 and one-third on job 62. Explain how this transaction will be recorded in a debit and credit system where control accounts are in operation.

A7.20 [S] On 16 June, job 94 is finished at a total cost of £3,500. The job consisted of printing brochures for a supermarket advertising campaign. Explain how this transaction will be recorded in a debit and credit system where control accounts are in operation and the printing of brochures is one of three production activities in the business, all of which contribute to the inventory of finished goods.

B Application

B7.1 [S]

The following transactions relate to a dairy, converting milk to cheese, for the month of May. Prepare ledger accounts which record the transactions.

1 May	Bought 600 drums of milk from supplier on credit, invoiced price being £90,000
1 May	Bought cartons, cost £6,000 paid in cash
2 May	Returned to supplier one drum damaged in transit, £150
3 May	500 drums of milk issued to cheesemaking department, cost £75,000
4 May	Issued two-thirds of cartons to cheesemaking department, £4,000
14 May	Paid cheesemakers' wages £3,000
14 May	Paid wages for cleaning and hygiene £600
16 May	Paid rent, rates and electricity in respect of printing, £8,000, in cash
28 May	Paid cheesemakers' wages £3,000
28 May	Paid wages for cleaning and hygiene £600
31 May	Transferred all production of cheese in cartons to finished goods inventory.
31 May	No work-in-progress at end of month.
31 May	Finished goods stock value at £6,000

B7.2 [S]

Write journal entries for the following transactions:

Transfer production overhead cost of £27,000 to work-in-progress account.
Transfer work-in-progress of £12,000 to finished goods inventory account.
Pay £1,500 cash for production overhead costs.
Return to a supplier items of inventory having a cost of £900.
Transfer finished goods inventory of £31,000 to cost of goods sold.
Transfer cleaner's wages of £500 from wages ledger account to production overhead cost ledger account.
Purchase inventory of raw materials on credit, cost of £14,000.
Transfer raw materials inventory of £980 to work-in-progress
Pay direct labour wages in cash £1,000.
Transfer direct labour wages £1,000 to work-in-progress.

B7.3

Set out below are three job cost records. Prepare the work-in-progress control account in the general ledger which represents the total of these three separate records.

Month of April	*Job 1* £	*Job 2* £	*Job 3* £
Direct materials used	2,700	3,000	1,200
Direct labour worked	1,900	2,800	800
Allocation of production overheads:			
Rent	200	350	200
Rates	140	250	180
Electricity	160	170	140
Indirect materials	700	550	490
Indirect labour	660	400	320
Total cost incurred	6,460	7,520	3,330
Completed during period	5,000	7,100	2,800
Work not yet completed	1,460	420	530
	6,460	7,520	3,330

B7.4

The following statement shows a note of information relating to materials inventory during the month of May. Prepare the materials inventory control account in the general ledger.

		£
1 May	Purchased direct materials on credit, for various jobs:	
	Job 901	1,300
	Job 902	1,100
	Job 903	900
2 May	Returned materials which failed quality inspection	
	Job 901	200
	Job 902	300
5 May	Paid cash for indirect materials to be used during May and June	4,200
31 May	Job records for May showed the following information:	
	Job 901 All materials transferred to work-in-progress (1,300 – 200)	1,100
	Job 902 Start of work delayed. 75% of materials transferred to work-in-progress 75% of (1,100 – 300)	600
	Job 903 Start of work delayed. 50% of materials transferred to work-in-progress 50% of 900	450
31 May	Records show two-thirds of indirect materials used in production	2,800
31 May	Inventory at end of month:	
	For Job 901	nil
	For Job 902	200
	For Job 903	450
	Indirect materials	1,400

C Problem solving and evaluation

C7.1 [S]

Bridge Builders Ltd undertook a contract to build a pedestrian footbridge for a fixed price of £400,000 during the period from May Year 1 to July Year 2. This table sets out transactions up to the company's year end in December, Year 1.

Transactions during Year 1:		£000s
May	Materials purchased and delivered to site	91
May	Equipment delivered to site	14
July	Architect's fee	7
June–Dec	Materials issued from store	76
May–Dec	Wages paid on site	71
Sept	Payment to subcontractors	10
May–Dec	Direct costs	22
Dec	Head office charges	6
At the end of Year 1		
Dec	Value of equipment remaining on site	9
Dec	Value of material remaining on site	15
Dec	Sales value of work certified	280
Dec	Amount due to subcontractors	3
Dec	Direct costs incurred but not yet paid	3

Required:

(a) Prepare relevant ledger account records.
(b) Prepare a statement of contract profit for Year 1.

C7.2

Builders Ltd has undertaken to refurbish the Black Swan Hotel. The contract price was agreed at £480,000 based on estimated total costs of £440,000. The contract work began on 1 January Year 8. The accounting year of Builders Ltd ended on 31 August Year 8 at which date the contract was not completed. The following information provides the full contract estimate and the payments up to 31 August:

	Original estimate for full contract	*Actual cash paid up to 31 August*
	£	£
Subcontractors' costs:		
Substructure	21,910	20,050
Superstructure	140,660	135,200
External works	111,256	95,000
Main contractors' costs:		
Materials –		
Internal finishing	22,800	23,370
Fittings and furnishings	9,300	10,000
Utilities	42,400	31,800
Direct labour and overheads –		
Internal finishing	23,100	17,325
Fittings and furnishings	9,100	6,916
Utilities	39,100	30,107
Administration overhead	20,374	15,402
	440,000	385,170

Further information:

1. The substructure was completed on 31 July but a subcontractor's invoice for £2,500 in respect of the final work done was not paid until 4 September.
2. The superstructure was also completed on 31 July and subcontractors were paid in full during August.

3 External works were 80% completed at 31 August. There was a delay in March due to adverse weather affecting the pebble-dashing, which cost £3,500 to remove and restore.
4 Cash paid for materials for internal finishing covered the cost of all paint and wallpaper necessary to complete the contract. The actual paint and wallpaper unused at 31 August was valued at £4,000.
5 All fittings and furnishings required for the contract had been bought and paid for before 31 August. Only 70% by value had been installed by 31 August.
6 Materials costs of utilities were 80% complete in respect to estimates.
7 Labour hours worked up to 31 August on internal finishing, fittings and furnishings and services were 70% of the estimated total.
8 Administration overhead is allocated as a percentage of total sales value.
9 It is company policy to credit to management profit and loss account not more than 75% of the profit earned in any period.
10 It is estimated that the main contractor's material and labour costs for the remainder of the contract will be incurred at the same rate as was experienced up to 31 August.
11 An independent surveyor estimated the contract value of work done up to 31 August at £400,000.
12 On 31 August the customer paid £380,000 on account of work completed.

Required
Prepare a report for the directors of Builders Ltd containing:

1 The profit on the contract for the accounting year ended 31 August Year 8 in a form which highlights variances from the initial estimate.
2 An estimate of the actual profit to be achieved on the contract as a whole.
3 Brief comments on the contract outcome.

Case studies

Real world cases

Prepare short answers to Case studies **7.1**, **7.2** and **7.3**.