



Certificate
in
Business Administration
Study Manual

Introduction to Accounting

The Association of Business Executives

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ABE Certificate in Business Administration

Study Manual

Introduction to Accounting

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Certificate in Business Administration

Introduction to Accounting

Syllabus

Aims

1. Understand the basic principles of both financial accounting and management accounting and their applications.
2. Acquire the knowledge and techniques which will assist students in the performance of both financial and management accountancy functions in industry and commerce.
3. Acquire the basic skills necessary for the pursuit of a recognised accountancy qualification.

Programme Content and Learning Objectives

After completing the programme, the student should be able to:

1. Prepare a trading, profit and loss account, balance sheet and cash flow report for sole traders, partnerships and limited liability companies, after taking into account the normal range of adjustments to the trial balance necessary for such preparation.
2. Recognise and apply the appropriate accounting conventions to a range of transactions within the context of the accounting regulatory requirements.
3. Understand and describe the appropriate books of account for different types of accounting transactions and be able to prepare a trial balance from these books of account. To prepare and maintain a range of control accounts appropriate to the books of account. To prepare journal entries and deal with the treatment of suspense account items.
4. Understand, calculate and interpret a range of basic financial ratios appropriate to a set of financial statements, particularly in the key areas of profitability, solvency/liquidity, asset utilisation and investment ratios.
5. Understand the basic principles of cost behaviour, cost ascertainment and be able to:
 - Classify direct and indirect costs
 - Prepare an indirect overheads allocation summary
 - Calculate overhead recovery rates by a variety of techniques and to apply these for the purpose of cost compilation
 - Explain the difference between fixed and variable costs
 - Calculate break-even points of activity and prepare break-even charts
 - Appreciate and explain the limitations of break-even analysis.

6. Understand the basic principles of different costing techniques and to be able to:
 - Define the different costing techniques
 - Explain and understand the differences between each technique, and
 - Calculate costs using any of the techniques.
7. Understand the basic principles of capital investment appraisal and be able to calculate and interpret figures using the pay back, accounting rate of return or discounted cash flow methods of investment appraisal.

Method of Assessment

By written examination. The pass mark is 40%. Time allowed 3 hours.

The question paper will contain *two compulsory questions* – one in financial accounting and one in management accounting – and a choice of three from four remaining questions.

Reading List

Essential Reading

- Wood, F. (1999), *Business Accounting 1*; 8th edition, Pitman Publishing
- Drury, C., *Costing: An Introduction*; 3rd edition, Chapman and Hall
- Lucey, T., *Costing*; 5th edition, DP Publications
- Cox, D., *Business Accounts*; 2nd edition, Osbourne Books

Additional Reading

- Millchamp, A. (1992), *Foundation Accounting*; DP Publications
- Wood, F. (1999), *Business Accounting 2*; 8th edition, Pitman Publishing

Study Unit 1

Nature and Scope of Accounting

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A. PURPOSE OF ACCOUNTING

A business proprietor normally runs a business to make money. He or she needs information to know whether the business is doing well. The following questions might be asked by the owner of a business:

How much profit or loss has the business made?

How much money do I owe?

Will I have sufficient funds to meet my commitments?

The purpose of conventional business accounting is to provide the answers to such questions by presenting a summary of the transactions of the business in a standard form.

Financial and Management Accounting

Accounting may be split into financial accounting and management accounting.

(a) **Financial accounting**

Financial accounting comprises *two* stages:

- book-keeping, which is the recording of day-to-day business transactions; and
- preparation of accounts, which is the preparation of statements from the book-keeping records; these statements summarise the performance of the business – usually over the period of one year.

(b) **Management accounting**

Management accounting is defined by the Chartered Institute of Management Accountants as:

“The application of professional knowledge and skill in the preparation and presentation of accounting information in such a way as to assist management in the formulation of policies and in the planning and control of the operations of the undertaking”.

Management accounting, therefore, seeks to provide information which will be used for decision-making purposes (e.g. pricing, investment), for planning and control.

Money as the Common Denominator

Accounting is concerned only with information which can be given a *monetary value*. We put money values on items such as land, machinery and stock, and this is necessary for comparison purposes. For example, it is not very helpful to say: “Last year we had four machines and 60 items of stock, and this year we have five machines and 45 items of stock.”. It is the money values which are useful to us.

Whilst we are concerned with money, we should note that there are limitations to the use of money as the unit of measurement.

(a) **Human asset and social responsibility accounting**

We have seen that accounting includes financial accounting and management accounting. Both of these make use of money measurement. However, we may want further information about a business:

- Are industrial relations good or bad?
- Is staff morale high?
- Is the management team effective?

- What is the employment policy?
- Is there a responsible ecology policy?

These questions will not be answered by conventional business accounting in money terms but by “human asset accounting” and “social responsibility accounting”. These subjects have not yet been fully developed and are outside the scope of your syllabus.

(b) **Devaluation**

The value of money does not remain constant, and there is normally some degree of inflation in the economy. We will look at the steps that have been taken to attempt to adjust accounting statements to the changing value of money later in the course.

The Business Entity

The business as accounting entity refers to the separate identities of the business and its owners.

(a) **Sole trader**

There must always be a clear distinction between the owner of the business and the business itself. For example, if Mr X owns a biscuit factory, we are concerned with recording the transactions of the factory. We are not concerned with what Mr X spends on food and clothes. If Mrs Y, works at home, setting aside a room in her house, an apportionment may have to be made.

(b) **Partnership**

Similarly, the partners in a business must keep the transactions of the business separate from their own personal affairs.

(c) **Companies**

In law, a company has a distinct “legal personality”. This means that a company may sue or be sued in its own right. The affairs of the shareholders must be distinguished from the business of the company. The proprietor of a limited company is therefore distinct from the company itself.

Users of Accounting Information

We need to prepare accounts in order to “provide a statement that will meet the needs of the user, subject to the requirements of statute and case law and the accounting bodies, and aided by the experience of the reception of past reports”.

So if we prepare accounts to meet the needs of the user, *who is the user?*

The main users of financial accounts are:

- Equity investors (shareholders, proprietors, buyers)
- Loan creditors (banks and other lenders)
- Employees
- Analysts/advisers
- Business contacts (creditors and debtors, competitors)
- The government (The Inland Revenue)
- The public
- Management (board of directors)

Users can learn a lot about the running of a company from the examination of its accounts, but each category of user will have its own special perspective. We need to look at some of these in more detail.

- **Proprietor**

The perspective of the business proprietor is explained above (but see below for the interests of shareholders).

- **Inland Revenue**

The Inland Revenue will use the accounts to determine the liability of the business for taxation.

- **Banks and other lending institutes**

These require to know if the business is likely to be able to repay loans and to pay the interest charged. But often the final accounts of a business do not tell the lender what he or she wishes to know. They may be several months old and so not show the up-to-date position. Under these circumstances, the lender will ask for cash flow forecasts to show what is likely to happen in the business. This illustrates why accounting techniques have to be flexible and adaptable to meet users' needs.

- **Creditors and debtors**

These will often keep a close eye on the financial information provided by companies with which they have direct contact through buying and selling, to ensure that their own businesses will not be adversely affected by the financial failure of another. An indicator of trouble in this area is often information withheld at the proper time, though required by law. Usually, the longer the silence, the worse the problem becomes.

- **Competitors**

Competitors will compare their own results with those of other companies. A company would not wish to disclose information which would be harmful to its own business: equally, it would not wish to hide anything which would put it above its competitors.

- **Board of Directors**

The board of directors will want up-to-date, in-depth information so that it can draw up plans for the long term, the medium term and the short term, and compare results with its past decisions and forecasts. The board's information will be much more detailed than that which is published.

- **Shareholders**

Shareholders have invested money in the company and as such are the owners of the business. Normally, the company will be run by a team of managers and the shareholders require the managers to account for their "stewardship" of the business, i.e. the use they have made of the shareholders' funds.

- **Employees**

Employees of the company look for, among other things, security of employment.

- **Prospective buyers**

A prospective buyer of a business will want to see such information as will satisfy him or her that the asking price is a good investment.

B. RULES OF ACCOUNTING (ACCOUNTING STANDARDS)

As different businesses use different methods of recording transactions, the result might be that financial accounts for different businesses would be very different in form and context. However, various standards for the preparation of accounts have been developed over the years. We shall be looking at the layout of financial accounts later on in the course. With regard to companies, various rules have been incorporated into legislation (Companies Acts). Companies whose shares are listed on the Stock Exchange are subject to Stock Exchange rules. There are also "Statements of Standard

Accounting Practice” (SSAPs) and Financial Reporting Statements (FRSs) which are issued by the main professional accounting bodies through the Accounting Standards Board (ASB).

Development of Accounting Standards

In 1942, the Institute of Chartered Accountants in England and Wales began to make recommendations about accounting practices, and over time issued a series of 29 Recommendations, in order to codify the best practice to be used in particular circumstances. Unfortunately, these recommendations did not reduce the diversity of accounting methods.

(a) The Accounting Standards Committee

In the late 1960s, there was a lot of public criticism of financial reporting methods and the accounting profession responded to the criticism by establishing the Accounting Standards Committee (ASC) in 1970. The ASC was set up with the object of developing definitive standards for financial reporting. A statement of intent produced in the 1970s identified the following objectives:

- To narrow the areas of difference in accounting practice
- To ensure disclosure of information on departures from definitive standards
- To provide a wide exposure for new accounting standards
- To maintain a continuing programme for improving accounting standards.

(b) Statements of Standard Accounting Practice (SSAP)

The ASC comprised representatives of all the six major accounting bodies, i.e. the Chartered Accountants of England and Wales, of Scotland, and of Ireland, the Certified Accountants, the Cost and Management Accountants, and the Chartered Institute of Public Finance and Accountancy. The procedure was for the Committee to produce an *exposure draft* on a specific topic, for comment by accountants and other users of accounting information. A formal statement was then drawn up, taking account of comments received, and issued as a *Statement of Standard Accounting Practice (SSAP)*. Once a statement had been adopted by the accountancy profession, any material departures by a company from the standard practice had to be disclosed in notes to the Annual Financial Accounts.

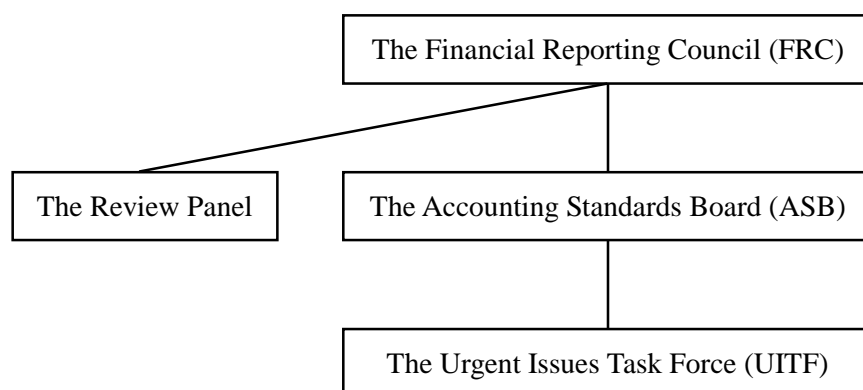
(c) The Dearing Report

Although the ASC had much success during its period of operation and issued 25 SSAPs as well as a number of exposure drafts (EDs), Statements of Intent (SOI), and Statements of Recommended Practice (SORP), there were many serious criticisms of its work, leading to its eventual demise.

In July 1987, the Consultative Committee of Accountancy Bodies (CCAB) set up a review of the standard-setting process under the chairmanship of Sir Ron Dearing. The *Dearing Report* subsequently made a number of very important recommendations. The government accepted all but one of them and in August 1990 a new standard setting structure was set up.

Current Standards Setting Structure

The system is centred around the Accounting Standards Board, and the structure, as recommended by the Dearing Report, is shown in Figure 1.1.

Figure 1.1: Standard Setting Structure

The FRC acts as a policy-making body for accounting standard-setting.

(a) Financial Reporting Standards (FRS)

The ASB is more independent than the ASC was and can issue standards known as *Financial Reporting Standards (FRS)*. The ASB accepted the SSAPs then in force and these remain effective until replaced by an FRS. The ASB develops its own exposure drafts along similar lines to the ASC; these are known as FREDs (Financial Reporting Exposure Drafts).

(b) Statements of Recommended Practice (SORP)

Although the ASB believed that Statements of Recommended Practice (SORPS) had a role to play, it did not adopt the SORPS already issued. Not wishing to be diverted from its central task of developing accounting standards, the Board has left the development of SORPS to bodies recognised by the Board.

The SORPS issued by the ASC from 1986 differed from SSAPs in that SSAPs had to be followed unless there were substantive reasons to prove otherwise, and non-compliance had to be clearly stated in the notes to the final accounts. A SORP simply sets out best practice on a particular topic for which a SSAP was not appropriate. However, the later SORPs are mandatory and cover a topic of limited application to a specific industry (e.g. local authorities, charities, housing associations). These SORPS do not deviate from the basic principles of the various SSAPs and FRSs currently in issue.

(c) Urgent Issues Task Force (UITF)

This is an offshoot of the ASB which tackles urgent matters not covered by existing standards or those which, if covered, were causing diversity of interpretation. In these circumstances, the UITF issues a “Consensus Pronouncement” in order to detect whether or not accounts give a true and fair view.

(d) Financial Reporting Review Panel

This examines contentious departures from accounting standards by large companies. The panel has the power to apply to the court for an order requiring a company’s directors to revise their accounts.

Apart from the UK Accounting Standards, there are also standards issued by the *International Accounting Standards Committee (IASC)* which was established in 1973. Representatives from the United Kingdom sit on this Committee with those of other countries. The need for the IASC arose because of international investment, the growth of multinational firms and the desire to have common standards worldwide. In the United Kingdom, our own standards take precedence over the IASC but most of the provisions of IASs are already contained in existing SSAPs or FRSs. Where there is non-compliance with an IAS, this is disclosed in the UK standard.

Statements of Standard Accounting Practice

A detailed knowledge of all the current SSAPs and FRSs is *not* required by your examiners, but you should be aware of what they cover. However, some of the more important standards are dealt with in the main body of this course material under their own topic headings.

- **SSAP 1: Accounting for Associated Companies**

Where one company has invested in another company and can significantly influence the affairs of that company, then rather than simply show dividends received as a measure of income, the full share of the profits of that company should be shown in the investing company's accounts.

- **SSAP 2: Disclosure of Accounting Practice**

This standard requires disclosure if the accounts are prepared on the basis of assumptions which differ materially from the generally accepted fundamental accounting concepts.

The position must be disclosed as a note to the accounts. (Accounting concepts are more fully covered later on in this study unit.)

- **SSAP 3: Earnings Per Share**

This SSAP defines how earnings per share is calculated and is covered in more detail later in the course.

- **SSAP 4: Accounting for Government Grants**

Grants should be recognised in the profit and loss account so as to match the expenditure to which they relate. Capital grants relating to capital expenditure should be credited to revenue over the expected useful economic life of the asset.

- **SSAP 5: Accounting for Value Added Tax**

This aims to achieve uniformity of accounting treatment of VAT in financial statements.

- **SSAPS 6 and 7**

These have been withdrawn.

- **SSAP 8: Treatment of Tax Under the Imputation System in Accounts of Companies**

This establishes a standard treatment of taxation in company accounts with particular reference to advance and mainstream corporation tax.

- **SSAP 9: Stocks and Long-term Contracts**

Stocks should be valued at the lower of cost or net realisable value. With long-term contracts the accounts should not recognise profit in advance but should account immediately for any anticipated losses (covered later in the course).

- **SSAPs 10 and 11**

SSAP 10 has been superseded by FRS 1 and SSAP 11 has been withdrawn.

- **SSAP 12: Accounting for Depreciation**

This SSAP applies to all fixed assets except investment properties, goodwill, development costs and investments. All assets with a finite life should be depreciated by allocating cost less residual value to the revenue account, over their economic lives. The SSAP recognises several different methods but does not insist on which method should be used; the method applied, however, should be consistent. (Covered later in the course.)

- **SSAP 13: Accounting for Research and Development**

Expenditure on pure (basic) or applied research can be regarded as ongoing to maintain a company's business. Expenditure on developing new and improved products is normally

undertaken to secure future benefits, but should still also be written off in the year of expenditure unless it complies with stringent conditions, e.g. the project is commercially viable.

- **SSAP 14**

SSAP 14 has been superseded by FRS 2.

- **SSAP 15: Accounting for Deferred Tax**

This covers the treatment of taxation attributable to timing differences between profits computed for tax purposes and profits as stated in financial statements. Timing differences originating in one period are likely to be reversed in a subsequent period.

- **SSAP 16**

SSAP 16 has been withdrawn.

- **SSAP 17: Accounting for Post Balance Sheet Events**

Any event occurring up to balance sheet date will have affected the balance sheet, but normally it is impossible to alter the accounts after approval by the directors. However, between these two dates some types of events can be adjusted for, e.g. discovery of errors or frauds which show that the financial statements were incorrect.

- **SSAP 18: Accounting for Contingencies**

A contingency is a situation that exists at the balance sheet date, the outcome of which is uncertain. Contingent losses must be taken into account and the contingent gains left out. Material contingent losses can be disclosed in the notes to the balance sheet.

- **SSAP 19: Accounting for Investment Properties**

This standard requires investment properties to be included in the balance sheet at open market value. Where investment properties represent a substantial proportion of the total assets the valuation should be carried out by a recognised professional person, and by an external valuer at least every five years.

- **SSAP 20: Foreign Currency Translation**

This deals with the translation of foreign currency transactions from overseas branches or subsidiaries into sterling. The method used should be disclosed as a note to the final accounts.

- **SSAP 21: Accounting for Leases and Hire Purchase Contracts**

This requires that a finance lease (where the lessee takes on the risks and rewards of ownership) should be accounted for by the lessee as if the asset had been purchased. In other words, substance over form.

- **SSAP 22: Accounting for Goodwill**

Goodwill purchased should reflect the difference between the price paid for a business and the fair value of the net assets acquired. Goodwill should not include any value for intangible items; these should be included under the heading of intangible assets in the balance sheet. Purchased goodwill should not remain as a permanent item in the balance sheet. It must either be written off immediately on acquisition against reserves, or amortised against profit and loss on ordinary activities over its useful economic life. (This is covered in more detail later in the course.)

- **SSAP 23: Accounting for Acquisitions and Mergers**

This deals with the different accounting methods for acquisitions or mergers. (See also FRS 6 later in this Study Unit.)

- **SSAP 24: Accounting for Pension Costs**

An employer should recognise the cost of providing pensions on an equitable basis in relation to the period over which he derives benefit from services rendered by employees.

- **SSAP 25: Segmental Reporting**

Information in accounts should be broken down by class of business and geographically (covered later in the course).

Financial Reporting Standards 1-7

- **FRS 1: Cash Flow Statements**

Cash flow statements *replace* the source and application of funds statement, so that the emphasis is now on what cash has flowed in or out of the business during the accounting period rather than on how the components of working capital have changed in the year. (See later in the course.)

- **FRS 2: Accounting for Subsidiary Undertakings**

This deals with preparing accounts for parent and subsidiary companies.

- **FRS 3: Reporting Financial Performance**

This covers the treatment of extraordinary and exceptional items in financial statements, and requires a statement of total recognised gains and losses to be prepared. (Covered later.)

- **FRS 4: Accounting of Capital Instruments**

This standard supersedes the Urgent Issues Task Force's (UITF) Abstract 1 "Convertible Bonds" and Abstract 8 "Repurchase of own debt". The subject matter involved is to do with raising finance.

- **FRS 5: Reporting the Substance of Transactions**

This standard, issued 14 April 1994, ensures that financial statements report the *substance of transactions* and not merely their legal form. (Covered later.)

- **FRS 6: Accounting for Business Combinations (Acquisitions and Mergers)**

This standard limits the ability of a company to use merger accounting in accordance with SSAP 23 by setting out a number of conditions which must first be satisfied before merger accounting can be adopted. FRS 6 in conjunction with FRS 7 (see next paragraph) are *mandatory* for accounting periods commencing on or after 23 December 1994.

- **FRS 7: Fair Values in Acquisition Accounting**

All business combinations that do not qualify as a merger in accordance with FRS 6 must therefore adopt acquisition accounting. This Standard ensures that all the assets and liabilities of the acquired company at the date of acquisition are recorded at "fair values" in the financial records of the acquiring company.

C. ACCOUNTING PERIODS

An owner of a business will require financial information at regular intervals. As we have noted, he or she will want to be able to check periodically how well or badly the business is doing. Financial accounts are normally prepared on an annual basis, e.g. twelve months to the 31 March. Preparing accounts on an annual basis facilitates comparisons between one year and previous years and assists forecasting the next year. For example, there may be seasonal factors affecting the business, which will even out over the year. An ice-cream vendor will expect to make more sales in the summer months than in the winter months. He would not be able to tell if business is improving by looking at accounts for six months ended 31 March 19XX and

comparing them with accounts for the six months ended 30 September 19XX. True comparison of profit/loss can be gained only when he examines his accounts for the years (say) 31 March 19X1 and 31 March 19X2.

Accounts normally have to be prepared annually for tax purposes as tax is assessed on profits of a 12-month accounting period. In the case of limited companies, accounts are prepared annually to the “accounting reference date”. It is necessary to calculate annually the amount of profit available for distribution to shareholders by way of dividend.

D. THE FUNDAMENTAL CONCEPTS OF ACCOUNTANCY

The purpose of *SSAP 2: Disclosure of Accounting Policies* is to ensure that the fundamental bases on which the accounts of a company are prepared are disclosed in notes to the published accounts, thus enabling any person to understand and interpret them in the light of the information disclosed.

The statement distinguishes between fundamental accounting concepts, accounting bases and accounting policies.

- **Accounting concepts**

These are defined as broad basic assumptions which underline the periodic financial accounts of business enterprises. *Four* are singled out for special mention (see below). The Companies Act 1985 refers to these four accounting concepts as “*fundamental principles*”, gives them statutory force and takes into account two additional principles, i.e. non-aggregation (assets must be valued individually) and set-off (assets or income cannot be set off against liabilities of expenditure or vice-versa).

- **Accounting bases**

These are different methods that have been developed for expressing or applying the fundamental accounting concepts, e.g. calculation of depreciation, valuation of stocks.

- **Accounting policies**

These are the specific accounting bases judged by business enterprises to be the most appropriate to their circumstances and adopted by them for the purpose of preparing their financial accounts.

The Four Fundamental Concepts

These are the fundamental principles referred to in SSAP2.

- **“Going concern” concept**

The assumption is made that the business entity will continue in existence for the foreseeable future. This is an important concept, as the value placed on the assets of a continuing business is different from the value placed on the assets of a closing business. Stock is normally valued at cost price but if the business were about to cease trading, then the resale value of the stock would be more relevant, as the owner will try to sell off the remaining stock. One obvious problem with this concept is that we can never be entirely sure that the business will continue. The concept also applies to the significant curtailment of any part of the business operation.

- **Consistency concept**

Once a business has decided which accounting methods it is going to apply and how it is going to interpret the various rules of accounting, it should be consistent in these matters from year to year. Consistency is necessary so that the results of the business, as shown by the accounts, may be compared from year to year. Changes should be adopted only if the old methods, for a good reason, can no longer apply.

- **Concept of prudence**

The accountant should adopt procedures which do not overstate or anticipate profits and do not understate losses but which do provide for all potential losses. Profit should be included only when it is reasonably certain that cash will be received. Adopting the concept of prudence is a measure against drawing money from the business out of profits which may not materialise, or when a loss arises which had not been anticipated.

- **Accruals concept**

Revenues and costs are recognised as they are earned or incurred, and not when the money is received or paid. For example, if in year 1 a trader has only paid three of four telephone bills, and in year 2 pays the outstanding bill in addition to the four bills received in year 2, then the outstanding bill should be adjusted for (“accrued”) in the accounts of year 1, so that each year is charged with the appropriate telephone costs incurred, rather than with the amount actually paid.

Other Concepts of Accountancy

In addition to the four basic concepts of accounting, there exist various other conventions, which may be encountered in examinations. (You should note here that, sometimes, the terms accounting “rules”, “concepts” and “conventions” are used interchangeably, so do be prepared for this.)

- **Historical cost**

Accounting information is quantitative information, recorded in monetary value at “historical cost”. This means that transactions are recorded at their original price, e.g. purchases of stock are recorded at cost price.

- **Materiality**

If it would serve no useful purpose, i.e. it is not worthwhile to record an item in a particular way, or to show an item separately in the accounts, then it should not be done. If an item is “immaterial”, it may be that the costs of recording it in a particular way outweigh any benefit of doing so. Each business must quantify “materiality” individually as, for example, an item costing £50 might be material to a business with a turnover of £1,000 and a profit of £100, but not to a business with a turnover of £5m and a profit of £350,000. Also, other conventions may be ignored if the cost of adopting them outweighs the benefit.

- **Matching**

Income should be included in the accounts in the same accounting period as the expenses relating to that income.

- **Realisation**

Transactions are recorded when the customer incurs liability for the goods or services (normally, liability is incurred when the goods or services are actually received). Any profit on the transaction is not realised until that time.

This convention is in conflict with the economist’s view that, if an asset has increased in value, that increase should be recognised.

- **Dual aspect**

Every transaction involves an act of giving and an act of receiving. For example, if A buys a car from B for £2,500, then A receives a car and “gives” £2,500. It is from this aspect of transactions that the **double-entry** system of book-keeping developed.

Study Unit 2

Double-Entry Book-Keeping and the Ledger

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A. PRINCIPLES OF DOUBLE-ENTRY BOOK-KEEPING

At the outset here we need to clear about a number of terms and concepts upon which are built the system of double-entry book-keeping.

- **Dual aspect**

You will recall from the last unit that the system of double-entry book-keeping is based on the dual aspect of transactions, i.e. for every transaction there is a *receiving* and a *giving*. For example, if I buy a book and pay cash, I receive a book and give cash.

- **The ledger**

We record the receiving and giving aspects of business transactions in a book of accounts which we call “the ledger”. An account is opened in the ledger for each receiving person or “thing” and for each giving person or “thing”. For example, if I am in business and I buy a car, paying by cheque, I would open an account in my ledger for “motor vehicles” and one for “bank”. If I then buy a fax machine and pay cash, I would open an account for “office equipment” and one for “cash”.

- **Debits and credits**

We record the receiving aspect of transactions by *debiting* the “receiving” account and *crediting* the “giving” account. If we look at the example in paragraph above, we can see which accounts to debit and which accounts to credit. When I buy a car, paying by cheque, I debit the account for motor vehicles as the receiving account, and credit the account for bank as the giving account. When I buy a fax for cash, I debit the account for office equipment as the receiving account, and credit the account for cash as the giving account.

- **Stock**

It is worth mentioning at this stage that the account for stock is split into an account for “purchases of stock” and an account for “sales of stock”. When we purchase goods for resale (i.e. purchase stock) for cash, we debit the account for purchases as the receiving account, and we credit the account for cash as the giving account. If we sell items of stock to Mr X on credit, we debit the account for Mr X as the receiving account and we credit the account for sales as the giving account.

- **Capital**

The other account at which we should look at this stage, is the *capital account*. First, do remember that, in our ledger, we keep the accounts which reflect the transactions of a business. In the capital account we record the amount which the proprietor of the business personally pays into the business itself. For example, if Mrs Y starts a business by paying some of her own money into the business bank account, then we debit the bank account as the receiving account, and we credit the capital account as the giving account. If Mrs Y draws cash from the business for her own personal use, we open a *drawings account*, and we debit the drawings account as the receiving account, and credit the cash account as the giving account.

B. LEDGER ACCOUNTS

Recording Transactions in the Ledger

Each account that we open in a ledger will be shown on a separate page. We shall show the debit entries on the left-hand side of the page and the credit entries on the right-hand side.

For example, we represent the bank account in our ledger as follows:

Dr		Bank			Cr
Date	Details	£ Amount	Date	Details	£ Amount

Let us look at an example. Ms A starts in business on 1 January 19X0 by lodging £500 of her personal money into a business bank account. We would record the event in her books of account in the following way.

Dr		Bank			Cr
19X0		£	19X0		£
Jan. 1		500			

Dr		Capital			Cr
19X0		£	19X0		£
		500	Jan. 1		500

When Ms A later looks at her ledger, she will see from the account for “Bank” that £500 has been lodged on 1 January. She will also want to know where the £500 came from (bearing in mind that she may be recording a large number of transactions and is unlikely to remember the details of each one). Similarly, when Ms A looks at her “Capital” account, she will want to know which account has “received” the £500 that she has paid into the business.

Therefore, when we enter a transaction in the ledger accounts, we enter, in the “details” column, the name of account in which we are entering the opposite entry.

In the example of Ms A, above, her two ledger accounts now appear as follows.

Dr		Bank			Cr
19X0		£	19X0		£
Jan. 1	Capital	500			

Dr		Capital			Cr
19X0		£	19X0		£
			Jan. 1	Bank	500

Ms A can now see from her “Bank” account that the £500 lodged has come from capital, and from her “Capital” account that the £500 paid into the business has been lodged in the bank.

Worked example

Read through the following example and try to work out what the entries in the ledger accounts will be, *before* looking at the solution.

Mr Fisher started in business by lodging £10,000 of his own money into a business account on 1 March 19X1. On 3 March, he bought a van, paying £3,000 for it by cheque. On 8 March, he purchased goods for resale from Mr Hunter for £1,000 on credit. On 12 March he paid £500 to Mr Hunter by cheque.

Let us decide which accounts to debit and which to credit. First, the bank account “receives” £10,000 which is “given” by Mr Fisher personally. So the entries in the ledger accounts will be:

Debit: bank account £10,000
Credit: capital account £10,000

Secondly, the motor vehicles account “receives” £3,000 and the bank account “gives” £3,000. The entries will be:

Debit: motor vehicles account £3,000
Credit: bank account £3,000

Next, the purchases account “receives” £1,000 which is “given” by Mr Hunter. The entries will be:

Debit: purchases account £1,000
Credit: Mr Hunter’s account £1,000

Finally, Mr Hunter “receives” £500, “given” by the bank account. The entries will be:

Debit: Mr Hunter’s account £500
Credit: bank account £500

Mr Fisher’s ledger accounts will appear as follows:

Dr	Capital		Cr
19X1	£	19X1 Mar 1 Bank	£ 10,000

Dr	Bank		Cr
19X1 Mar 1 Capital	£ 10,000	19X1 Mar 3 Motor vehicles Mar 12 Mr Hunter	£ 3,000 500

Dr	Motor vehicles		Cr
19X1 Mar 3 Bank	£ 3,000	19X1	£

Dr		Purchases		Cr	
19X1		£	19X1		£
Mar 8	Mr Hunter	1,000			

Dr		Mr Hunter		Cr	
19X1		£	19X1		£
Mar 12	Bank	500	Mar 8	Purchases	1,000

Rules for Debits and Credits

The types of account which we require in the ledger fall into five categories:

- **Assets** – which are the resources possessed by the business: property; motor vehicles; bank balance; cash; debts owing to the business; etc.
- **Liabilities** – which are moneys owing by the business for goods supplied, for expense items and for amounts borrowed.
- **Capital** – which is the amount supplied by the proprietor to the business.
- **Income** – which is the revenue of the business. It may be sales; work done; fees earned; rents receivable; commission; etc.
- **Purchases and expenses** – which are items of expenditure “used up” by the business. Purchases are of goods for resale. Expense items may include, for example, wages, insurance, repairs, rent, etc.

Transactions are recorded in the ledger by debiting one account and crediting another. The treatment of the debit and credit will depend on the type of account concerned in the transaction. Table 2.1 sets out the rules.

Table 2.1: Rules for debits and credits for particular types of account

	Debit	Credit
Assets	Increase	Decrease
Liabilities	Decrease	Increase
Capital	Decrease	Increase
Income	Decrease	Increase
Purchases and expenses	Increase	Decrease

Let’s think about each of the entries in the table in turn. One example of a ledger account for an asset is the bank account. If the bank account “receives”, then the bank balance has increased so we debit the bank account. If the bank account “gives”, then the bank balance has decreased, so we credit the bank account.

An example of a ledger account for a liability is the account for a creditor – say, Mr X. If Mr X “gives”, the liability to pay him increases so we credit his account. If Mr X “receives”, the liability to pay him decreases, so we debit his account. Similarly, if the capital account “gives”, the liability to pay the proprietor increases, so we credit the capital account. If the capital account “receives”, then

the liability to pay the proprietor decreases, so we debit the capital account. Let us use sales as our example of an income account. If sales “gives” (i.e. the business sells goods), sales have increased, so we credit the sales account. If sales “receives” (i.e. goods sold are returned), then sales have decreased, so we debit the sales account.

Stationery is an example of an expense account. If stationery “receives”, the stock of stationery has increased and we debit the stationery account. If stationery “gives” – i.e. stationery is returned to the supplier – the stock of stationery has decreased, and we credit the stationery account.

Worked example

Let us go back now to our earlier example of Mr Fisher, and look at his transactions in terms of “increasing” and “decreasing”.

First, Mr Fisher lodges £10,000 of his own money into the business bank account. The asset of bank has increased and the amount which the business owes to Mr Fisher personally has also increased – so, we can see that the entries are:

Debit:	bank account	(increase in an asset)
Credit:	capital account	(increase in capital)

Second, he buys a van (an asset) and pays by cheque from his bank account (an asset). So, we can agree the entries as:

Debit:	motor vehicles account	(increase in an asset)
Credit:	bank account	(decrease in an asset)

Next, he purchases goods on credit from Mr Hunter, so the entries are:

Debit:	purchases	(increase in purchases)
Credit:	Mr Hunter	(increase in a liability)

Finally, he pays a cheque to Mr Hunter, so the entries are:

Debit:	Mr Hunter	(decrease in a liability)
Credit:	bank	(decrease in an asset)

C. THE ACCOUNTING EQUATION

The accounting equation states that:

$$\text{Assets} = \text{Liabilities} + \text{Capital}$$

This means that what the business owns is equal to what it owes (to any creditors, other lenders and the proprietor).

Let us look at a simple example.

If I start in business by paying £500 of my own money into a business bank account, then I have an asset (bank) of £500 and capital of £500.

$$\text{Asset (£500)} = \text{Liabilities (nil)} + \text{Capital (£500)}$$

If I then buy a second-hand PC on credit for £150 from Mr W, then I have assets of £500 (bank) + £150 (PC), I have a liability to pay Mr W £150, and I have capital of £500.

$$\text{Assets (£650)} = \text{Liabilities (£150)} + \text{Capital (£500)}$$

We shall see the accounting equation in operation in the unit on balance sheets, later in the course.

D. BALANCING OFF

Why Do We “Balance Off” Ledger Accounts?

We shall use an example to illustrate. Mrs P. Potter commenced in business on 1 January 19X1. The bank account in her ledger appears as follows for the month of January 19X1.

Dr	Bank		Cr
19X1	£	19X1	£
Jan 1 Capital	2,000	Jan 2 Purchases	400
Jan 9 Sales	320	Jan 4 Motor vehicle	1,200
Jan 17 Sales	205	Jan 12 Insurance	110
Jan 23 Cash	190	Jan 20 Purchases	270
Jan 31 Sales	380	Jan 24 Motor expenses	90

We can tell from this account the amounts which P. Potter has lodged in the bank, and the amounts which she has drawn from the bank. We can tell from the narrative where each lodgement has come from (e.g. sales, cash) and where each amount drawn has gone to (e.g. purchases, insurance). What else do we want to know about the bank account? *The bank balance.*

To find how much P. Potter has in the bank at 31 January, we simply add the amounts which she had lodged in the bank (£2,000 + £320 + £205 + £190 + £380 = £3,095) and subtract the amounts which she had paid out of the bank account (£400 + £1,200 + £110 + £270 + £90 = £2,070). Her bank balance at 31 January was, therefore, £3,095 – £2,070 = £1,025.

In this case, P. Potter has a *debit* balance of £1,025, as the total of the amounts on the debit side of her bank account is greater than the total of the amounts on the credit side.

Procedure for Balancing Off

In the bank account of Mrs Potter’s ledger we want to show that, at 31 January 19X1, the debit side was greater than the credit side by £1,025. We do this by entering the balancing figure on the credit side as follows, and totalling the two columns.

Dr	Bank		Cr
19X1	£	19X1	£
Jan 1 Capital	2,000	Jan 2 Purchases	400
Jan 9 Sales	320	Jan 4 Motor vehicle	1,200
Jan 17 Sales	205	Jan 12 Insurance	110
Jan 23 Cash	190	Jan 20 Purchases	270
Jan 31 Sales	380	Jan 24 Motor expenses	90
		Jan 31 Balance c/d	1,025
	3,095		3,095

“Balance c/d” means balance carried down to the next month. If P. Potter had £1,025 in the bank at the close of business on 31 January, then she also had £1,025 in the bank at the start of business on 1 February. We want to show in the ledger account for bank that P. Potter started off February with £1,025 in the bank.

This is done as follows:

Dr		Bank		Cr		
19X1		£		19X1	£	
Jan 1	Capital	2,000		Jan 2	Purchases	400
Jan 9	Sales	320		Jan 4	Motor vehicle	1,200
Jan 17	Sales	205		Jan 12	Insurance	110
Jan 23	Cash	190		Jan 20	Purchases	270
Jan 31	Sales	380		Jan 24	Motor expenses	90
				Jan 31	Balance c/d	1,025
		<u>3,095</u>				<u>3,095</u>
Feb 1	Balance b/d	1,025				

“Balance b/d” means balance brought down from the previous month. Instead of saying that P. Potter started February with debits of £3,095 and credits of £2,070 in her bank account, we say that she had a debit balance of £1,025.

The procedure for balancing off is as follows.

- Total both sides of the ledger account.
- Which side is “bigger”? Enter the balancing figure required on the “smaller” side.
- The total of both sides should now agree. Enter the totals and “rule off” (i.e. underline).
- Bring the balance down to the beginning of the following month.

N.B. Balancing off is normally done every month, though it may be done more, or less frequently.

One further point of procedure is worth mentioning. If there is only one entry in a particular ledger account for the month, it is unnecessary to enter the totals.

For example, suppose that P. Potter had lodged £2,000 from capital into the bank account and had made no further transactions during the month. Her bank account would appear as follows.

Dr		Bank		Cr	
19X1		£		19X1	£
Jan 1	Capital	2,000			

If we followed stages (a) to (d) of our procedure list, the bank account would appear as follows.

Dr		Bank		Cr		
19X1		£		19X1	£	
Jan 1	Capital	2,000		Jan 31	Balance c/d	2,000
		<u>2,000</u>				<u>2,000</u>
Feb 1	Balance b/d	2,000				

However, in this case we can omit stage (c) – entering the totals. Instead we simply rule off, and the account will look as shown below.

Dr		Bank	Cr		
19X1		£	19X1	£	
Jan 1	Capital	2,000	Jan 31	Balance c/d	2,000
Feb 1	Balance b/d	2,000			

Balancing Off Month by Month

Now let us suppose that, in our original example, P. Potter made the following transactions in February 19X1:

- Feb 6 Purchased goods for resale £400, paying by cheque.
- Feb 18 Sold goods for £140, the money being banked immediately.
- Feb 21 Paid £60 by cheque for stationery.
- Feb 27 Received a cheque for £200 from D. Smith, a debtor.

Mrs Potter's bank account now appears as follows:

Dr		Bank	Cr		
19X1		£	19X1	£	
Jan 1	Capital	2,000	Jan 2	Purchases	400
Jan 9	Sales	320	Jan 4	Motor vehicle	1,200
Jan 17	Sales	205	Jan 12	Insurance	110
Jan 23	Cash	190	Jan 20	Purchases	270
Jan 31	Sales	380	Jan 24	Motor expenses	90
			Jan 31	Balance c/d	1,025
		3,095			3,095
Feb 1	Balance b/d	1,025	Feb 6	Purchases	400
Feb 18	Sales	140	Feb 21	Stationery	60
Feb 27	D. Smith	200	Feb 28	Balance c/d	905
		1,365			1,365
Mar 1	Balance b/d	905			

Comprehensive example

Jean started in business on 1st January 19X1, as a computer consultant. Her transactions for her first two months of trading are listed below.

- Jan 1 Transferred her car, value £8,400, to the business.
- Jan 9 Purchased headed notepaper, business cards, etc. to the value of £135, on credit from OK Paper Limited.
- Jan 10 Received a consultancy fee of £400 by cheque from a client.

- Jan 19 Paid motor expenses of £90 by cheque.
 Jan 20 Drew £50 from the bank for business use.
 Feb 2 Invoiced W Watson £200 for work done.
 Feb 9 Paid OK Paper Limited £20 cash.
 Feb 22 Drew £40 from the bank for personal use.

Her ledger accounts at 1 March 19X1 will appear as follows.

Dr		Motor Vehicle		Cr
19X1		£	19X1	£
Jan 1	Capital	8,400	Jan 31	Balance c/d
Feb 1	Balance b/d	8,400	Feb 28	Balance c/d
Mar 1	Balance b/d	8,400		

Dr		Capital		Cr
19X1		£	19X1	£
Jan 31	Balance c/d	8,400	Jan 1	Motor vehicle
Feb 28	Balance c/d	8,400	Feb 28	Balance b/d
			Mar 1	Balance b/d

Dr		Stationery		Cr
19X1		£	19X1	£
Jan 9	OK Paper Ltd	135	Jan 31	Balance c/d
Feb 1	Balance b/d	135	Feb 28	Balance c/d
Mar 1	Balance b/d	135		

Dr		OK Paper Limited		Cr
19X1		£	19X1	£
Jan 31	Balance c/d	135	Jan 9	Stationery
Feb 9	Cash	20	Feb 1	Balance b/d
Feb 28	Balance c/d	115		
		135	Mar 1	Balance b/d

Dr		Bank		Cr		
19X1		£		19X1	£	
Jan 10	Consultancy Fees	400		Jan 19	Motor expenses	90
				Jan 20	Cash	50
				Jan 31	Balance b/d	260
		400				400
Feb 1	Balance b/d	260		Feb 22	Drawings	40
				Feb 28	Balance c/d	220
		260				260
Mar 1	Balance b/d	220				

Dr		Consultancy Fees		Cr		
19X1		£		19X1	£	
Jan 31	Balance c/d	400		Jan 10	Bank	400
				Feb 1	Balance b/d	400
Feb 28	Balance c/d	600		Feb 2	W. Watson	200
		600				600
				Mar 1	Balance b/d	600

Dr		Motor Expenses		Cr		
19X1		£		19X1	£	
Jan 19	Bank	90		Jan 31	Balance c/d	90
Feb 1	Balance b/d	90		Feb 28	Balance c/d	90
Mar 1	Balance b/d	90				

Dr		Cash		Cr		
19X1		£		19X1	£	
Jan 20	Bank	50		Jan 31	Balance c/d	50
Feb 1	Balance b/d	50		Feb 9	OK Paper Ltd	20
					Balance c/d	30
		50				50
Mar 1	Balance b/d	30				

Dr		W Watson		Cr	
19X1		£		19X1	£
Feb 2	Consultancy Fees	200		Feb 28	Balance c/d
Mar 1	Balance b/d	200			

Dr		Drawings		Cr	
19X1		£		19X1	£
Feb 22		40		Feb 28	Balance c/d
Mar 1	Balance b/d	40			

E. CLASSIFICATION OF LEDGER ACCOUNTS

The accounts which may appear in the ledger are commonly classified into the following groupings.

(a) **Personal accounts**

These are the accounts for each person to whom we sell on credit (i.e. our debtors) and from whom we purchase on credit (i.e. our creditors). The capital account is also a personal account.

(b) **Impersonal accounts**

These are all the accounts which are not personal accounts, and they may be subdivided into:

- **real accounts** – these are our “property” accounts, for instance, vehicles, equipment – and
- **nominal accounts** – these are the accounts for income, purchases and expenses of the business.

Practice Questions

1. Mr Plum has been trading for many years. In April 19X2, he makes the following transactions:
- (a) He buys goods on credit from Miss Peach for £300.
 - (b) He sells goods for cash £150.
 - (c) He pays insurance of £40 by cheque.
 - (d) He pays Miss Peach £150 by cheque.
 - (e) He lodges £50 cash in the bank.

Complete the following table with reference to the above transactions, by entering “debit” and “credit”, as appropriate.

(a)	_____	Miss Peach	_____	purchases
(b)	_____	sales	_____	cash
(c)	_____	insurance	_____	bank
(d)	_____	Miss Peach	_____	bank
(e)	_____	cash	_____	bank

2. Debbie starts in business on 1 January 19X0 as a mobile hairdresser. Draw up her ledger accounts and enter the following transactions.

Jan 6: Debbie pays £1,000 of her own money into a business bank account.

Jan 9: Debbie buys a small second-hand car for £600, paying by cheque.

Jan 2: Debbie draws £100 cash from bank, for business use.

Jan 13: Debbie buys hairdressing supplies for £60 cash.

Jan 16: Debbie buys petrol for £10 cash and sets off for her hairdressing appointments. She takes in £60 cash from these appointments.

Jan 17: More appointments – £70 received in cheques, which Debbie banks immediately.

Balance off all the accounts as at 31 January.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

1. (a) credit, debit
 (b) credit, debit
 (c) debit, credit
 (d) debit, credit
 (e) credit, debit

2. The accounts, balanced off at 31 January, are as follows.

Dr		Capital		Cr	
19X0		£		19X0	
Jan 31	Balance c/d	1,000		Jan 6	Bank
				Feb 1	Balance b/d
					1,000

Dr		Bank		Cr	
19X0		£		19X0	
Jan 6	Capital	1,000		Jan 9	Motor vehicle
Jan 17	Work done	70		Jan 12	Cash
				Jan 31	Balance c/d
		1,070			370
Feb 1	Balance b/d	370			1,070

Dr		Motor Vehicle		Cr	
19X0		£		19X0	
Jan 9	Bank	600		Jan 31	Balance c/d
Feb 1	Balance b/d	600			600

Dr		Cash		Cr	
19X0		£		19X0	
Jan 12	Bank	100		Jan 13	Hairdressing supplies
Jan 16	Work done	60		Jan 16	Motor expenses
				Jan 31	Balance c/d
		160			90
Feb 1	Balance b/d	90			160

Dr		Hairdressing Supplies		Cr	
19X0		£		19X0	£
Jan 13	Cash	60		Jan 31	Balance c/d
Feb 1	Balance b/d	60			60

Dr		Motor Expenses		Cr	
19X0		£		19X0	£
Jan 13	Cash	10		Jan 31	Balance c/d
Feb 1	Balance b/d	10			10

Dr		Work Done		Cr	
19X0		£		19X0	£
Jan 31	Balance c/d	130		Jan 16	Cash
				Jan 17	Bank
		130			60
					70
				Feb 1	Balance b/d
					130

Study Unit 3

Cash and Bank Transactions

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A. NATURE OF THE CASH BOOK

In Study Unit 2, we said that all accounts are opened in the ledger. As cash and bank transactions are numerous, it is more convenient to remove these two accounts from the ledger and give them a book of account of their own. We call this book the “*cash book*”. The procedure for entering all cash and bank transactions is as previously stated, except that the cash account and bank account are kept in the cash book instead of in the ledger.

A specimen cash book is shown in Figure 3.1 and you should review this before continuing.

Twofold Aspect

We have already pointed out that every transaction involves a twofold aspect, i.e. receiving and giving a benefit. The rule here is for you to debit one account and pass a corresponding credit entry to another account, in order to balance the scale.

If you refer to Figure 3.1, you will see that on the 3 January, £675.50 was received from S Jevons and, therefore, *debited* in the cash book – but where is the corresponding credit entry for this transaction?

It would be necessary to open up a personal account in the ledger, designated “S Jevons”, and credit the amount of £675.50. This now completes the twofold aspect. The same procedure is followed with all the other debit items, and the ledger would reveal the following position.

Dr	S. Jevons		Cr
19..	£	19.. Jan 3 Cash	£ 675.50

Dr	D.Copperfield		Cr
19..	£	19.. Jan 8 Bank	£ 895.20

Dr	M. Marks		Cr
19..	£	19.. Jan 20 Bank	£ 2,414.50

Dr	S Jones		Cr
19..	£	19.. Jan 20 Cash	£ 283.50

Dr	Sales Account		Cr
19..	£	19.. Jan 31 Bank	£ 1,000.00

Figure 3.1: Two column cash book

Dr		CASH BOOK						Cr	
		Cash		Bank		Cash			
		£	p	£	p			£	p
Jan. 1	Balance b/d					Jan. 3	J Smith		
" 3	S Jevons	500	00	4,500	00	" 7	Purchases	1,500	00
" 8	D Copperfield	675	50	895	20	" 12	S Weller	2,509	00
" 15	M Marks			2,414	50	" 25	Sundry expenses	825	00
" 20	S Jones	283	50			" 25	Stationery		
" 31	Sales			1,000	00	" 25	Wages	15	00
						" 31	Rent	100	00
Feb. 1	Balance b/d					" 31	Balance c/d	1,169	00
		1,459	00	8,809	70				
		1,169	00	3,975	70			1,459	00
								8,809	70

The above cash book is called a "two-column" cash book, as there is a column for cash and a column for bank on each side.

NB: If the cash book was part of the ledger, as in say a computerised ledger, then "cash in hand" and "cash at bank" would be split into two separate ledger accounts.

You will observe that all the items appearing on the debit side, with the exception of the opening balances, are recorded on the credit side of the various accounts opened in the ledger. This procedure is referred to as *“posting the cash book”*, i.e. you post the information to the ledger from the cash book in order to complete the twofold aspect.

As yet, we have only concerned ourselves with the debit side of the cash book – but what about the credit side?

Here again, we must open up accounts in the ledger and post the amounts to the debit of such accounts – thus completing the twofold aspect. When this is done, the ledger will reveal the following position.

Dr		J Smith		Cr	
19..		£	19..	£	
Jan 3	Bank	1,500.00			

Dr		Purchases Account		Cr	
19..		£	19..	£	
Jan 7	Bank	2,509.00			

Dr		S Weller		Cr	
19..		£	19..	£	
Jan 12	Bank	825.00			

Dr		Sundry Expenses Account		Cr	
19..		£	19..	£	
Jan 25	Cash	15.00			

Dr		Stationery Account		Cr	
19..		£	19..	£	
Jan 25	Cash	25.00			

Dr		Wages Account		Cr	
19..		£	19..	£	
Jan 25	Cash	150.00			

Dr		Rent Account		Cr	
19..		£	19..	£	
Jan 31	Cash	100.00			

Rule for Posting Cash Book to Ledger

The debit or receipts side of the cash book must be posted to the credit side of all relative ledger accounts. The only items on the debit side of the cash book that are not posted to the ledger are the opening balances already referred to earlier.

The credit or payments side of the cash book must be posted to the debit side of all relative ledger accounts. The only items excluded are the closing balances.

The Three-Column Cash Book

It is quite a regular practice for businesses to offer their customers a certain inducement for the prompt settlement of their accounts. The inducement takes the form of a percentage deduction from their account, and it is termed a “*cash discount*”.

For instance, Brown owes a business £20 which is subject to a 5% discount if paid on or before (usually) the 7th of the month following. Now, if Brown pays on or before the stipulated day, he is entitled to a deduction of £1 (5% of £20). He therefore remits £19 in full settlement of the account of £20.

In the same way as a business allows a cash discount to its debtors for the prompt settlement by them of their accounts, it is also possible for the business to receive such a concession from its own creditors. The former is known as “discounts allowed” and the latter as “*discounts received*”.

As these discounts come into existence only at the time payment is received or made, it is convenient to record them in the cash book *alongside the relative receipt or payment*.

The following example clearly illustrates the working of the three-column cash book incorporating the “discount” columns.

Example

The following transactions take place during January 19.. :

- Jan 3 A Jones settled his account of £20 by paying £19 cash.
- 5 B Brown settled, by cheque, his account of £90, less 5% discount.
- 6 C Davis paid cash of £50 against his account.
- 6 Paid J Jasper £38 cash in full discharge of his account of £40.
- 7 Paid S Salvage his account of £50, less 5% discount. The payment was made by cheque.

The three column cash book to record these transactions is as follows, and the ledger accounts are set out on the next page:

Dr				Cash Book				Cr			
				Discount	Cash	Bank					
				£	£	£					
19..							19..				
Jan 3	A Jones			1.00	19.00		Jan 6	J Jasper		2.00	38.00
Jan 5	B Brown			4.50		85.50	Jan 7	S Salvage		2.50	
Jan 6	C Davis				50.00			Balance c/d			31.00
											38.00
				5.50	69.00	85.50				4.50	69.00
											85.50
Jan. 8	Balance b/d				31.00	38.00					

Dr		Discounts Allowed Account		Cr	
19..		£		19..	£
Jan 7	Cash	5.50			

Dr		Discounts Received Account		Cr	
19..		£		19..	£
				Jan 7	Cash
					4.50

Dr		B Brown		Cr	
19..		£		19..	£
Jan 1	Balance b/d	90.00		Jan 5	Bank
					Discount allowed
					85.50
					4.50
		90.00			90.00

Dr		A Jones		Cr	
19..		£		19..	£
Jan 1	Balance b/d	20.00		Jan 3	Cash
					Discount allowed
					19.00
					1.00
		20.00			20.00

Dr		J Jasper		Cr	
19..		£		19..	£
Jan 6	Cash	38.00		Jan 1	Balance b/d
	Discount received	2.00			
					40.00
		40.00			40.00

Dr		S Salvage		Cr	
19..		£		19..	£
Jan 7	Bank	47.50		Jan 1	Balance b/d
	Discount received	2.50			
					50.00
		50.00			50.00

You will notice that the discount that appears on the *debit* side of the cash book appears on the *debit* side of the relative ledger account, and vice versa. Why should this be the case when all other debits are posted to the credit of the ledger, and vice versa?

The explanation is simple.

In the first place, you must remember that the discount is placed in the *cash book* alongside the relative receipt or payment for the sake of convenience. It is recorded there by way of *memorandum*. For instance, the £1.00 and £4.50 appearing on the debit side of the cash book do not represent the debits for those amounts. They assume financial significance only when posted to the debit side of the discounts allowed account in the ledger, and then only in collective form, i.e. the total, £5.50, instead of the cumbersome form of individual amounts.

You can see from this that the double entry is accomplished by crediting £1.00 and £4.50 to Jones and Brown, respectively, and debiting the total of £5.50 to the discounts allowed account. The same remarks apply to discounts received, except that debits become credits, and vice versa.

You will notice that the debit of £5.50 in the discounts allowed account is balanced by two credit entries – £4.50 in the account of Brown, and £1.00 in the account of Jones. Similarly, the credit of £4.50 in the discounts received account is balanced by two debit entries – £2.00 in the account of Jasper, and £2.50 in the account of Salvage.

The reason why the total figure is transferred from the cash book to the discounts allowed account and discounts received account is merely for convenience. If there are many discount items during the course of a month, this method (i.e. the transfer of the total) saves employees having to list individual discounts in the discounts allowed and discounts received accounts, as these details are already noted in the cash book.

How Cash and Bank Columns are Affected

The following tables set out the entries which appear in the cash and bank columns of a cash book, and the effect of transactions.

Cash column

<i>Debits or receipts side</i>	<i>Credit or payments side</i>
<ul style="list-style-type: none"> ● The opening balance of cash brought down from a previous period. ● All cash received, unless paid into the bank immediately on receipt. ● Receipts of cash from bank for office use. <p>These are referred to as “contra entries”, which have the effect of increasing cash and decreasing bank.</p>	<ul style="list-style-type: none"> ● There can never be an opening balance of cash on this side, as it is impossible to pay out more than you have in the office cash box. ● All disbursements made other than by cheque. ● All transfers from cash to bank. <p>These are classed as “contra entries” which cause a decrease in cash and an increase in bank funds.</p>

Bank column

<i>Debits or receipts side</i>	<i>Credit or payments side</i>
<ul style="list-style-type: none"> ● The opening balance in your favour at the bank. ● All cash paid direct into the bank by the firm's debtors. ● All deposits effected ex-office cash. <p>(For the corresponding credit, see point 3 on the credit side of the cash column given above.)</p>	<ul style="list-style-type: none"> ● The opening balance in favour of the bank. This is termed an "overdraft", and it represents a loan made by the bank for which an interest charge is payable by the firm. ● All payments made by cheque only. ● All withdrawals in favour of office cash. <p>(For the corresponding debit, see point 3 on the debit side of the cash column given above.)</p> <ul style="list-style-type: none"> ● All bank charges – i.e. interest on overdraft, ledger fees, collection charges etc. ● All cheques returned unpaid by the bank.

Example

The working of the cash and bank columns of the treble-cash book is clearly illustrated but, for the purpose of greater clarity, make a close study of the following worked exercise.

19..		£
Feb 1	Cash balance	150.00
	Bank balance	2,850.00
Feb 8	Cash sales to date	1,100.00
Feb 9	Received cheques from the under-mentioned:	
	T Thomson	475.00
	Discount allowed	25.00
	B Baxter (on account)	800.00
	F Fernis	950.00
	Discount allowed	50.00
Feb 10	Paid the under mentioned creditors by cheque:	
	C Carter	1,000.00
	P Pickwick	500.00
	J Johnson	475.00
	Discount received	25.00

19..		£
Feb 12	Cash disbursements to date	
	Sundry expenses	50.00
	Office stationery	25.00
	Wages	60.00
Feb 14	Banked	3,325.00
	Cash sales to date	1,000.00
	Cash purchases to date	100.00
	Purchases paid for by cheque	1,800.00
Feb 18	Banked	900.00
Feb 25	Issued cheque for rent	150.00
	Withdrew for office use	250.00
Feb 28	Paid the following amounts from cash:	
	Sundry expenses	40.00
	Office stationery	10.00
	Wages	120.00
	Purchases	50.00

Note: Although it is normal commercial practice to pay all cash receipts including cheques into the bank immediately, this has not been done in this example.

Now work these figures through the following cash book and ledger accounts.

Dr		CASH BOOK												Cr	
		RECEIPTS, FEBRUARY 19..						PAYMENTS, FEBRUARY 19..							
			Discount	Cash	Bank		Discount	Cash	Bank						
		£	p	£	£	p	£	p	£	£	p	£	p	£	p
1	Balance			150	2,850									1,000	
8	Sales			1,100			25							500	
9	T Thomson			475								50			
	B Baxter			800								25			
	F Fernis			950			50					3,325			
14	Transfer		C		3,325							100			
	Sales			1,000								900			
18	Transfer		C											150	
25	"		C											250	
Mar. 1	Balance		b/d	4,725	7,075		75		4,725			4,725		2,900	
				45	2,900									7,075	

Dr		Purchases Account		Cr	
19..		£		19..	£
Feb 14	Cash	100.00			
Feb 14	Cash	1,800.00			
Feb 28	Cash	50.00			

Dr		Sales Account		Cr	
19..		£		19..	£
				Feb 8	Cash 1,100.00
				Feb 14	Cash 1,000.00

Dr		Wages Account		Cr	
19..		£		19..	£
Feb 12	Cash	60.00			
Feb 28	Cash	120.00			

Dr		Office Stationery Account		Cr	
19..		£		19..	£
Feb 12	Cash	25.00			
Feb 28	Cash	10.00			

Dr		Rent Account		Cr	
19..		£		19..	£
Feb 25	Cash	150.00		Feb 8	Cash 1,100.00

Dr		Sundry Expenses Account		Cr	
19..		£		19..	£
Feb 12	Cash	50.00			
Feb 28	Cash	40.00			

Dr		Sundry Expenses Account		Cr	
19..		£		19..	£
Feb 28	Sundries	75.00			

Dr		Discounts Received Account		Cr		
19..	£	19..	£	Feb 28	Sundries	25.00

Dr		B Baxter		Cr		
19..	£	19..	£	Feb 9	Cash	800.00

Dr		F Fernis		Cr		
19..	£	19..	£	Feb 28	Cash	950.00
					Discount allowed	50.00

Dr		T Thomson		Cr		
19..	£	19..	£	Feb 9	Cash	475.00
					Discount allowed	25.00

Dr		C Carter		Cr		
19..	£	19..	£			
Feb 10	Cash	1,000.00				

Dr		J Johnson		Cr		
19..	£	19..	£			
Feb 10	Cash	475.00				
	Discount received	25.00				

Dr		P Pickwick		Cr		
19..	£	19..	£			
Feb 10	Cash	500.00				

You will observe that, when money is paid into or withdrawn from the bank, the expression “transfer” is used. Furthermore, the letter “C” is inserted in the folio column, to indicate that no posting to the ledger is necessary as both the debit and credit entries are in the cash and/or bank accounts. (Sometimes a “tick” is used instead).

Before proceeding, let us deal with these transfers because it is important that you have an unclouded idea of this phase of accounting.

On the 14th, we took £3,325 from office cash, and lodged it in the bank. This decreases cash and increases the bank. As cash gives the benefit, we must *credit cash*, and as bank receives the benefit, we *debit bank*. Now, let us look at the cash book. On the debit side, we see “Transfer £3,325” in the bank column and “Transfer £3,325” in the cash column on the credit side. This completes the double entry, and it is, therefore, not necessary to post to the ledger. To indicate this, we place a “tick” or the letter “C” in the folio column. The same remarks apply to the transfer from cash to bank on the 18th.

We now turn to the transfer effected on the 25th. Instead of putting money into the bank, we now *withdraw* money from the bank. This time, we see that cash is increased and bank decreased. We therefore *debit cash*, because it receives the benefit, and we *credit bank*, because it gives the benefit – thus completing the double entry. As no further posting is necessary, we insert our “C” (or tick) in the folio column.

The Modern Cash Book

The cash book in general business use is the three column cash book, explained already, one column each being used for discounts, cash and bank on both sides.

It is, however, an invariable practice of every soundly-run business to pay all cash receipts into the bank immediately, and to make no cash payments at all (except petty cash payments which are recorded in the petty cash book). Much unnecessary work can, therefore, be saved by eliminating the cash column on the credit side (or not using it at all) and by extending the total of cash receipts for each day into the bank column on the debit side.

The following illustration (Figure 3.2) shows how it is done. Work out for yourself the additional entries which would have to be made were “transfers” between cash and bank also shown.

Figure 3.2: The modern cash book

Dr		CASH BOOK										Cr			
		19..		Discount	Details	Bank	19..		Discount	Bank					
				£	p	£	p	£	p			£	p		
Jan. 1	Balance							1,000	00	Jan. 5	Petty cash			100	00
	A Abel	b/fwd	11	1	20	93	80				Z Zig	98	13	80	
	B Bull		13			107	80								
	C Cain		21			67	80	269	40						
	D Dash		27	5	00	95	00								
	E Edge		35			228	80								
	F Fall		39	7	60	274	80								
	G Gunn		43	10	00	355	50	954	10						

B. BANK RECONCILIATION STATEMENT

When amounts are paid into your bank account, you debit the bank column in your cash book and the bank credits your current account in its ledger.

On the other hand, you credit the bank column in your cash book with all cheques as and when drawn by you, and the bank debits your current account with the amount of these cheques as soon as they are presented and honoured.

From this, two points emerge.

- What appears in the bank column on the debit side of your cash book figures on the **credit** side of your current account in the bank's books, and vice versa.
- The balance as shown by your cash book and that reflected in the ledger of the bank do not necessarily agree. This is accounted for by the fact that cheques are debited only when presented.

There is yet another reason why the two balances disagree in amount, and this is the omission from the cash book of all bank charges debited in the bank statement.

These two balances are reconciled by means of a statement, called a "bank reconciliation statement".

Steps in Reconciling the Two Balances

- (a) Before balancing the cash book, check the **bank column** with the bank statement.
- (b) Make a rough note of all amounts credited in your cash book and not entered in the payments column in the statement.
- (c) Make a further note of all amounts appearing on the debit side of cash book and not shown in the receipts column of the statement. This can arise when you make a deposit at the end of the month at a branch of a bank which does not hold your account, and it is not transferred to your own branch until the beginning of the following month.
- (d) Enter on the credit side of the cash book all items not previously entered, e.g. bank charges, and then balance the cash book.
- (e) Draw up a reconciliation statement, starting with the balance given in the bank statement to which would be added:

"Amounts paid in but not yet credited by the bank." (refer to (c) above)

and from which would be subtracted:

"Cheques drawn but not yet presented to the bank for payment."

The resulting balance should then coincide with that shown in the cash book.

Example

In order to illustrate the procedure, we shall assume the information shown on the next few pages.

Dr		Cash Book		Cr	
		Bank		Bank	
19..		£		19..	£
Mar 1	Balance b/d	1,500.00		Mar 3	L Dark (862) 400.00
Mar 5	Transfer C	600.00		Mar 6	B Light (863) 600.00
Mar 12	Transfer C	400.00		Mar 10	S Grit (864) 300.00
Mar 31	Transfer C	1,000.00		Mar 15	D Carburettor (865) 250.00
				Mar 20	M Monkhouse (866) 150.00
				Mar 30	Stationery (867) 50.00
				Mar 31	Rent (868) 100.00

Bank Statement

Date	Details	Payments	Receipts	Balance
19..		£	£	£
1 Mar	B/fwd		1,500.00	1,500.00
5 Mar	Sundry credits		600.00	
	862	400.00		1,700.00
11 Mar	864	300.00		1,400.00
12 Mar	Sundry credits		400.00	1,800.00
20 Mar	866	150.00		
	863	600.00		1,050.00
31 Mar	867	50.00		
	Commission	0.50		999.50

We are required to complete and rule off the cash book, and to append the necessary bank reconciliation statement. This is shown next.

Dr		Cash Book		Cr	
		Bank		Bank	
19..		£		19..	£
Mar 1	Balance b/d	1,500.00		Mar 3	L Dark (862) 400.00
Mar 5	Transfer C	600.00		Mar 6	B Light (863) 600.00
Mar 12	Transfer C	400.00		Mar 10	S Grit (864) 300.00
Mar 31	Transfer C	1,000.00		Mar 15	D Carburettor (865) 250.00
				Mar 20	M Monkhouse (866) 150.00
				Mar 30	Stationery (867) 50.00
				Mar 31	Rent (868) 100.00
					Bank charges .50
					Balance c/d 1,649.50
		3,500.00			3,500.00
Apr 1	To Balance b/d	1,649.50			

Reconciliation Statement – 31 March 19..

	£	£
Balance as per bank statement		999.50
<i>add</i> Amount paid in but not yet credited		1,000.00
		<u>1,999.50</u>
<i>less</i> Cheques drawn but not presented:		
no. 865	250.00	
no. 868	100.00	350.00
		<u>350.00</u>
Balance as per cash book		£1,649.50

The practice is for credit to be passed by the bank immediately the deposit is received, irrespective of the soundness of the cheques included in the amount paid in. All banks, of course, reserve the right to refuse to pay against such deposits until the cheques have been cleared. This right is usually exercised only in cases of small, unsound accounts.

If you are given an item of bank charges in the bank statement and this does not appear in the cash book, first adjust the cash book, before preparing the reconciliation statement. In other words, show the cash book itself with the bank charges entered and the adjusted balance carried down. Then reconcile the bank statement with the adjusted cash book balance.

Position when there is a Bank Overdraft

Instead of adding amounts paid in but not yet credited, you now deduct; and, instead of deducting cheques drawn but not yet presented, you now add such amounts. In other words, where you previously added you now deduct, and vice versa.

C. STALE AND POST-DATED CHEQUES

Stale Cheques

If a cheque is not presented by the holder within six months of the date written upon it, it becomes “stale” or outdated and the bank will refuse payment. Large companies frequently find that cheques issued by them are not presented for payment for some months after issue. That such cheques are outstanding is known on the preparation of the bank reconciliation statement which usually takes place monthly. When more than six months have elapsed from the date of issue, the procedure to be adopted is described below.

- Write to the bank, asking them to stop payment of the cheques in question.
- Debit the cash book (in the bank column) and credit the personal account of the person to whom the cheque was given, i.e. the ledger account which was originally debited.

The latter is now shown as a creditor in the books or a reversed debit and the stale cheque will disappear from future bank reconciliation statements prepared.

- Write to the person concerned, enquiring the reason for non-presentation of the cheque. Obtain a satisfactory explanation (and, if possible, the uncashed cheque) before issuing a new cheque. In a modern business this step is usually omitted, leaving it up to the creditor to chase up non-payment.

A frequent cause of cheques becoming stale is their being incorrectly dated, e.g. a cheque drawn early in January could, absentmindedly, be dated for the previous year.

Post-dated Cheques

A post-dated cheque is one which is so dated as to preclude presentation for payment until some time after the actual date of its receipt from the debtor. For example, on 30 September AB may wish to pay a debt of £50 to CD but may have insufficient money in his bank to meet payment of the cheque. He may hope to have sufficient money by 31 October, so he “post-dates” his cheque by writing 31 October on the date space. He may now give the cheque to his creditor and be assured that it cannot be debited to his bank account until 31 October.

From the creditor’s point of view, even a post-dated cheque affords some actionable evidence of a debt – but CD will not accept the cheque from AB unless he is certain that AB has justifiable grounds for post-dating it. Having accepted it, he will keep it in his cash-book until 31 October, and then pay it into his bank.

Correspondingly, the cash book entries recording the receipt of the cheque and its banking may be made:

- on the due date (the difficulty about this being that the entry may be omitted unintentionally), or
- at once, i.e. debit cash, credit debtor; and debit bank, credit cash.

If the second method is adopted, any bank reconciliation statement prepared before the due date of the cheque will show it as one of the causes of disagreement between the bank balance and the balance shown by the cash book. It *must*, however, be shown as “post-dated cheque not yet due” and *not* as “amount paid in but not yet credited”.

D. THE PETTY CASH BOOK

It is very largely present-day practice for businesses to pay all cash received intact into the bank and to record in the cash book only payments made by cheque. There are, however, numerous small payments for which you would not dream of writing out cheques.

A separate fund is created to provide for these petty disbursements so inseparably connected with every business. This fund is recorded in a petty cash book, together with all petty disbursements.

This book, of original entry, which is really a subdivision of the cash book, is usually given to a junior member of the staff to keep. It will be his or her duty to debit this book with all cash received from the cashier or the accountant, and to credit it with all disbursements made, for which he or she will secure vouchers.

The petty cash book is periodically (usually monthly) balanced and posted to the ledger. The folio of the petty cash book is shown in the ledger, and the *ledger folio* in the petty cash book. The petty cash book folio entered in the ledger is prefixed by the letters "PC".

To save time in posting, it is usual to prepare a summary in the case of the simple form of petty cash book, by which is meant the grouping of all expenses of a like character. For instance, you collect and add items for stationery, rather than post individual amounts to the stationery account in the ledger.

Another way of summarising all expenditure is to resort to the columnar form of petty cash book, which merely involves the introduction of a column for each class of expenditure of a frequently-recurring nature.

The following examples clearly illustrate the two different forms in common use.

Simple Form

The transactions for a month are shown in the following extract from a typical simple form petty cash book. There will normally be a summary produced at the end of the month and this is shown after the cash book itself.

Dr		PC2		Petty Cash Book				Cr
Receipts			Payments					
Date	CB folio	Amount	Date	Details	Voucher no.	Amount		
19..		£	19..			£		
Jan 3	4	100.00	Jan 4	Bus fares	18	1.70		
			Jan 6	Stationery	19	10.00		
			Jan 8	Bus fares	20	1.30		
				Wages – cleaner	21	7.50		
			Jan 10	Sundry expenses	22	2.50		
			Jan 12	Bus fares	23	1.20		
			Jan 14	Wages – cleaner	24	7.50		
			Jan 21	Wages – cleaner	25	7.50		
			Jan 22	Stationery	26	15.00		
			Jan 28	Wages – cleaner	27	7.50		
			Jan 31	Balance c/d		38.50		
		100.00				100.00		
Feb 1	b/d	38.50						

Summary

	£	
Stationery	25.00	(16)
Wages – cleaner	30.00	(24)
Sundry expenses	2.50	(13)
Bus fares	4.20	(10)
	61.70	(6)

From the above summary, the various nominal accounts would be debited. Note how the ledger folio numbers are put in parentheses in this summary, giving a cross-reference from the petty cash book to the ledger. The stationery account is illustrated, and the other accounts are similar.

Dr	16	Stationery Account		Cr
19..		£	19..	£
Jan. 31	Petty cash	PC2	25.00	

A petty cash account is opened in the ledger, and debited from the cash book with all amounts advanced to the petty cashier for purposes of petty cash. It is credited with the total of the petty cash disbursements for the month. This account contains the true double entries of the accounting system, the petty cash book being merely a *memorandum* account for gathering together numerous items which are too trivial for individual double-entry postings.

Dr	Petty Cash Account			Cr
19..		£	19..	£
Jan. 3	Cash	CB4	100.00	Jan 31
				Sundries
				PC2
				61.70

Columnar Form

A specimen of this form of petty cash book is shown as Figure 3.3.

The nominal accounts affected are debited, the petty cash account credited as indicated above, and the ledger folios are inserted as shown in the example.

The only column here which calls for clarification is the one designated “ledger”. Where a particular class of transaction is not likely to occur more than once during the month, it is a waste to assign a column to that single item. All such amounts are accordingly extended to the “ledger” column and separately posted. For instance, you pay your electricity account only once a quarter and, therefore, you show it in the “ledger” column. Some firms, however, use the “ledger” column only for items of a purely personal nature, e.g. the payment of a small sum to a person, rather than passing them through the main cash book.

There are two particular points you should note at this stage:

- how the folio numbers are inserted when the analysis columns are totalled;
- that the total of the analysis columns (postages, stationery, wages, etc.) must agree with the grand total in the “total” column – always see that the cross addition of the analysis column agrees with the “total”.

Figure 3.3: Columnar petty cash book

Dr		PETTY CASH BOOK										Cr	
Date	Details	Folio	Amount	Date	Details	Voucher	Total	Postages etc.	Stationery	Wages	Sundry Expenses	Folio	Ledger
19..			£	19..			£	£	£	£	£		£
Jan. 1	Balance	b/d	200.00	Jan. 3	Postage stamps	100	10.00	10.00					
" 31	Cash	CB8	189.00	Jan. 5	Taxi fare	1	2.50				2.50		
				Jan. 8	Stationery	2	5.00		5.00				
				Jan. 9	Wages	3	20.00			20.00			
				Jan. 11	Cable to Sydney	4	7.70	7.70					
				Jan. 14	Bus fares	5	1.50				1.50		
				Jan. 17	Bus fares	6	2.30				2.30		
				Jan. 20	Wages - cleaner	7	20.00			20.00			
				Jan. 22	Electric light bulbs	8	15.00				15.00		
				Jan. 25	Cleaning expenses	9	5.00				5.00		
				Jan. 27	R Smith	110	20.00					PL 16	20.00
				Jan. 28	Postage stamps	1	20.00	20.00					
				Jan. 29	Repairs to blind	2	15.00				15.00		
				Jan. 29	Stationery	3	1.50		1.50				
				Jan. 29	Shorthand notebooks	4	23.50		23.50				
				Jan. 31	Wages - cleaner	5	20.00			20.00			
						L6	189.00	37.70	30.00	60.00	41.30		20.00
					Balance	c/d	200.00	(40)	(46)	(70)	(52)		
							389.00						
Feb. 1	Balance	b/d	200.00										

The Imprest System

The “imprest” system merely means that each month is to commence with the same amount as the month before, i.e. the opening monthly balance is to remain constant.

If it were decided that £250 sufficiently caters for the monthly petty disbursements, you would commence the system with this amount. If, at the end of the first month, your disbursements amounted to £223.30, a cheque for this amount would be drawn in favour of the petty cashier, which, together with cash in hand of £26.70 would restore petty cash to £250. The petty cashier would then start the following month with the same amount as he or she started the inaugural month – namely, £250 – which is known as the “imprest amount”. This system is very widely used, and it is clearly illustrated in the example of the columnar form of petty cash book.

Practice Questions

1. Under what circumstances would receipts of money be recorded direct in the bank column of the cash book?
2. What do you understand by “contra” entries in the cash book?
3. Prepare a columnar petty cash book from the following information; then post to the ledger.

		£
Jan 1	Balance brought forward from last month	250.00
3	Paid for postage stamps	10.00
4	Paid wages	25.00
6	Paid sundry expenses	2.50
7	Paid for package sent to New York	7.50
9	Paid for postage stamps	5.00
10	Stationery account paid	7.50
11	Wages paid	25.00
13	Paid railage on consignment to L Snow (whose account must be debited with this charge)	6.20
14	Paid for pencils	3.80
16	Paid cleaner for cleaning offices	7.50
18	Paid wages	25.00
20	Paid for stationery	12.80
22	Package to Canada	7.50
25	Wages paid	25.00
27	Stationery	12.50
28	Paid for sundry expenses	3.00
30	Bought and paid for shorthand notebooks	1.20
31	Paid for bus fares	1.00
31	Petty cash reimbursed by cheque from cashier in order to maintain system on imprest basis	

4. On 31 October 19.. the cash book of J Lemon showed a balance at the bank of £570. An examination of his records located the following errors.
 - (a) Lemon paid to G Good £175 by cheque on 15 October. This cheque was entered in the cash book as £195.
 - (b) Bank charges not recorded in the cash book amount to £25.
 - (c) A cheque dated 19 October, value £150, payable to T Walk, was not paid by the bank until 5 November.

- (d) Lemon, on 23 October, received a cheque from R Brown for £125. This cheque was dishonoured on 29 October. No entry for this was made in the cash book.
- (e) On 31 October a cheque for £200 received from F Light was banked; however, the bank statement was not credited until 1 November.

You are required to:

- (i) make the necessary entries in the cash book in order to show the revised balance at 31 October 19..;
- (ii) prepare a bank reconciliation as at 31 October 19...
5. Prepare a columnar petty cash book from the following transactions.

		£
Mar 1	Balance brought down	250.00
3	Paid the following:	
	Postages	15.00
	Airmail despatches	7.50
	Stationery	20.00
	Repairs	7.70
4	Paid for sundry expenses	3.80
6	Wages paid	15.00
8	Paid for stationery	17.50
12	Paid for airmail despatch to Montreal	7.50
13	Paid wages	15.00
15	Paid for pens	2.00
18	Postages paid for	10.00
20	Paid wages	15.00
23	Paid amount for M Drysdale which must be debited to his account	16.20
25	Airmail despatches paid for	7.50
27	Wages paid	15.00
31	Paid for sundry expenses	6.30
	Paid railage on goods to customers	7.30

A cheque was drawn in favour of petty cash for the amount of its disbursements.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

1. Receipts of money would be recorded in the bank column when paid direct into the bank by the firm's debtors, or when all cash receipts are paid direct into the bank account.
2. All deposits from cash to bank, and all withdrawals from bank to cash, are known as contra entries. This is owing to the fact that both the debit entry and the credit entry appear in the cash book – although they are in different columns.
3. The petty cash book is shown on the next page and this is followed by the relevant ledger accounts.

Dr		PC3		PETTY CASH BOOK										Cr	
Date	Details	Folio	Amount	Date	Details	Voucher	Total	Postages etc.	Stationery	Wages	Sundry Expenses	Folio	Ledger		
19..			£	19..			£						£		
Jan. 1	To balance b/d	CB	250.00	Jan. 3	Postage stamps	1	10.00	10.00							
				4	Wages	2	25.00			25.00					
				6	Sundry expenses	3	2.50				2.50				
				7	Package by air	4	7.50	7.50							
" 31	To cash	CB	188.00	9	Postage stamps	5	5.00	5.00							
				10	Stationery	6	7.50		7.50						
				11	Wages	7	25.00			25.00					
				13	L Snow railage	8	6.20					93	6.20		
				14	Pencils	9	3.80		3.80						
				16	Cleaner's wages	10	7.50			7.50					
				18	Wages	11	25.00			25.00					
				20	Stationery	12	12.80		12.80						
				22	Package by air	13	7.50	7.50							
				25	Wages	14	25.00			25.00					
				27	Stationery	15	12.50		12.50						
				28	Sundry expenses	16	3.00				3.00				
				30	Shorthand notebook	17	1.20		1.20						
				31	Bus fares	18	1.00				1.00				
						L9	188.00	30.00	37.80	107.50	6.50		6.20		
						c/d	250.00	(21)	(22)	(23)	(24)				
			438.00				438.00								
Feb. 1	Balance	b/d	250.00												

Dr		9		Petty Cash Account		Cr	
19..			£	19..			£
Jan. 1	Balance b/d		250.00	Jan 31	Sundries	PC3	188.00
Jan 31	Cash	CB	188.00		Balance c/d		250.00
			438.00				438.00
Feb 1	Balance b/d		250.00				

Dr		21		Postages Account		Cr	
19..			£	19..			£
Jan. 31	Petty cash	PC3	30.00				

Dr		22		Stationery Account		Cr	
19..			£	19..			£
Jan. 31	Petty cash	PC3	37.80				

Dr		23		Wages Account		Cr	
19..			£	19..			£
Jan. 31	Petty cash	PC3	107.50				

Dr		24		Sundry Expenses Account		Cr	
19..			£	19..			£
Jan. 31	Petty cash	PC3	6.50				

Dr				L Snow		Cr	
19..			£	19..			£
Jan. 31	Petty cash	PC3	6.20				
	railing on						
	consignment						

4. (i) **Revised Cash Book**

19..		£	19..		£
Oct 31	Balance b/d	570	Oct 31	Bank charges	25
Oct 15	Adjustment on cheque, G Good	20	Oct 29	Dishonoured cheque – R Brown	125
			Oct 31	Balance c/d	440
		590			590
Oct 31	Balance b/d	440			

(ii) **Bank Reconciliation Statement as at 31 October 19..**

	£
Balance as per bank statement	390
<i>add</i> Amount paid in but not yet credited	<u>200</u>
	590
<i>less</i> Cheques drawn but not presented:	
19 Oct. – T. Walk	150
Balance as per cash book	<u>440</u>

5.

PETTY CASH BOOK													
Dr						Cr							
Date	Details	Folio	Amount	Date	Details	Voucher	Total	Postages etc.	Stationery	Wages	Sundry Expenses	Folio	Ledger
19..	To balance	CB	£ 250.00	19..	Postage	1	£ 15.00	£ 15.00					£
Mar. 1				Mar. 3	Airmail despatches	2	7.50	7.50					
" 31	To cash	CB	188.80		Stationery	3	20.00		20.00				
				4	Repairs	4	7.70						7.70
				4	Sundry expenses	5	3.80				3.80		
				6	Wages	6	15.00			15.00			
				8	Stationery	7	17.50		17.50				
				12	Airmail despatch	8	7.50						
				13	Wages	9	15.00			15.00			
				15	Pens	10	2.00		2.00				
				18	Postages	11	10.00						
				20	Wages	12	15.00			15.00			
				23	M Drysdale	13	16.20					17	16.20
				25	Airmail despatches	14	7.50						
				27	Wages	15	15.00			15.00			
				31	Sundry expenses	16	6.30				6.30		
					Railage outwards	17	7.80					14	7.80
					Balance	c/d							
							188.80	47.50	39.50	60.00	10.10		31.70
							250.00	Folio (1)	Folio (2)	Folio (3)	Folio (4)		
							438.80						
Apr. 1	To balance	b/d	250.00										

Study Unit 4

Recording Business Transactions

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A. THE JOURNAL

Purpose

Nothing is recorded in the ledger until the transaction is first passed through a book of original entry, i.e. a subsidiary book. This is an important rule, which you must remember.

In the early history of double-entry book-keeping, the journal was the only book of subsidiary entry which was kept. All transactions were recorded in the journal – or “day book” as it was called. Gradually, however, as certain types of transaction became more numerous (such as sales and purchases), the journal was divided into sections, and then into separate books. Each section or book was devoted exclusively to recording one particular type of transaction.

Nowadays, the specialised subsidiary books are the cash book (petty cash book), purchases and sales books, and the purchases-returns and sales-returns books. All transactions that cannot be passed through one of these books are passed through the journal.

The journal is, therefore, a day book for miscellaneous transactions. In addition, it serves another useful function: where a transaction arises from abnormal circumstances, or is exceptionally complicated, a full explanation can be written in the journal, so that the exact nature of the transaction can be seen if it is queried at a later date – for instance, by the auditor. Furthermore, where one debit item corresponds to a number of small credit items, the journal shows that the credit items have been correctly entered in the ledger to complete the double entry.

Layout

The journal is drawn up with the first column for the date, a wider column for the narration, a folio column, and two columns for pounds and pence. The first of these money columns shows amounts to be posted to the debit side of the ledger, and the second money column shows amounts to be posted to the credit side of the ledger.

Example

On 12 March, a filing cabinet was purchased for £104.30 and a desk for £152.00, both on credit, from Office Services Ltd. On 15 March, a delivery van was sold on credit to P Q Garages Ltd, for £2,500.

The journal entries are as follows.

Journal				Dr	Cr
19..				£	£
Mar 12	Office equipment account	Dr	6	104.30	
	Office furniture account	Dr	7	152.00	
	Office Services Ltd		12		256.30
	Being a credit purchase of filing cabinet and office desk				
Mar 15	P Q Garages Ltd	Dr	14	2,500.00	
	Motor vehicle account		5		2,500.00
	Being credit sale of delivery van				

Note the layout of the journal. The narration, i.e. explanation, is always given, and then the entry is ruled off. Amounts entered in the debit column must be equal to amounts entered in the credit column

before each entry is ruled off – but these columns are not totalled. The appropriate ledger folio is given, and the journal folio entered in the ledger is prefixed “J”.

B. OPENING STATEMENT OF ASSETS AND LIABILITIES

It often happens that you are required to work an exercise with a list of assets and liabilities. In practice, an opening statement is prepared only when a new business is formed or acquired, or some similar change takes place. In an examination, prepare such an opening statement only if it is quite clear that the question requires it.

If you have to open a set of books, the best method is to open a statement in the journal under the heading “Opening Statement of Assets and Liabilities as at (date)”.

In this statement, all the assets and liabilities are systematically set out and then posted to the ledger, before current transactions are entered therein.

Example

The following worked example will prove helpful.

Wilfred Chesterfield had the following assets and liabilities on 1 January.

	£
Cash in hand	150.00
Cash in bank	2,950.00
Debtors:	
T Brown	860.00
S Syder	240.00
M Miles	725.00
Creditors:	
L Lloyd	460.00
M Reenen	150.00
J Timothy	600.00

He also had the following assets.

	£
Office furniture	1,000.00
Stock	3,500.00

We are required to ascertain his capital, and then to open his books with the above items.

Before starting on our opening statement, let us arrive at the proprietor’s capital. If the proprietor were to realise all his assets at the figures quoted and discharge his liabilities, then any cash that remains represents his capital. From this, it is easy to understand that the proprietor’s capital represents the excess of assets over liabilities. His assets come to £9,425.00 and his liabilities add up to £1,210.00 – leaving an excess of £8,215, which represents capital.

Examiners are very fond of omitting capital from this type of exercise but, as can be seen from the above, it is easily ascertainable.

Having fixed his capital at £8,215.00, we make the opening statement in the form as set out on the following pages.

Journal**Opening statement of assets and liabilities as at 1 January 19..**

			£		£
Cash in hand	Dr	CB1	150		
Cash in bank	Dr	CB1	2,950		
Office furniture	Dr	1	1,000		
Stock	Dr	2	3,500.00		
Sundry debtors:					
T Brown	Dr	3	860.00		
S Syder	Dr	4	240.00		
M Miles	Dr	5	725.00		
Sundry creditors:					
L Lloyd		6			460.00
M Reenen		7			150.00
J Timothy		8			600.00
Capital account		9			8,215.00
			9,425.00		9,425.00

The next step is to post the first two items to the cash book and the rest to the ledger, as shown.

1 Cash Book

Dr			Receipts			Payments			Cr		
			Cash	Bank				Cash	Bank		
19..			£	£	19..			£	£		
Jan 1	Balance	J1	150.00	2,950.00							

Dr			Office Furniture Account			Cr			
19..			£	19..			£		
Jan 1	Petty cash	J1	1,000.00						

Dr			Stock Account			Cr			
19..			£	19..			£		
Jan 1	Balance	J1	3,500.00						

Dr	3	T Brown			Cr
19..			£	19..	£
Jan 1	Balance	J1	860.00		

Dr	4	M Miles			Cr
19..			£	19..	£
Jan 1	Balance	J1	725.00		

Dr	5	S Syder			Cr
19..			£	19..	£
Jan 1	Balance	J1	240.00		

Dr	6	L Lloyd			Cr
19..			£	19..	£
				Jan 1	Balance
				J1	460.00

Dr	7	J Timothy			Cr
19..			£	19..	£
				Jan 1	Balance
				J1	600.00

Dr	8	M Reenen			Cr
19..			£	19..	£
				Jan 1	Balance
				J1	150.00

Dr	9	Capital Account			Cr
19..			£	19..	£
				Jan 1	Balance
				J1	8,215.00

Having completed this, our next step would be to record in the books the transactions that would ordinarily follow in the course of business.

C. DRAWINGS

In order to meet his private needs, the proprietor periodically withdraws sums of money from the business – usually, in anticipation of profits which he reasonably assumes will result. Drawings can also be in the form of goods but this will be explained in a later study unit. Where no profit is made, such withdrawals would reduce capital. No matter which it is, the method of accounting is the same.

As these withdrawals do not constitute an expense connected with the running of the business, they are *not* debited to the business but to the recipient of the benefit, i.e. the proprietor.

To accomplish this, a *drawings account* is opened in the ledger, to which all cash withdrawals are debited from the cash book. It is, therefore, easy to see, from time to time, the total of the proprietor's drawings.

This account is in the nature of an intermediary account in which all individual drawings accumulate until the final accounts (dealt with in a later study unit) are prepared, when the total is transferred to the debit of the proprietor's capital account. This practice serves to relieve the capital account of all unnecessary detail.

Example

Tom Johns, the proprietor, withdrew for private purposes the following amounts on the dates indicated.

		£
Jan 12	From office cash	20.00
Feb 1	From bank	200.00
Mar 6	From cash	35.00
	From bank	185.00
Apr 15	By cheque	250.00

These drawings would be shown in his books as follows.

Firstly the cash book:

2		Cash Book			
Dr	Receipts		Payments		Cr
	Cash	Bank		Cash	Bank
19..	£	£	19..	£	£
			Jan 12 Drawings	8	20.00
			Feb 1 Drawings	8	200.00
			Mar 6 Drawings	8	185.00
			Apr 15 Drawings	8	250.00

The ledger would be made up as follows:

Dr	8	Drawings Account		Cr	
19..			£	19..	£
Jan 12	Cash	CB2	20.00		
Feb 1	Bank	CB2	200.00		
Mar 6	Cash & bank	CB2	220.00		
Apr 15	Bank	CB2	250.00		
			690.00		

Let us assume that final accounts have been prepared for the half-year ended 30 June and the net profit amounts to £1,800. His capital at the beginning of the year was £8,000. His capital and drawings account would be as shown next.

Dr	6	Capital Account		Cr		
19..			£	19..	£	
Jun 30	Drawings	J6	690.00	Jan 1	Balance b/d	8,000.00
Jun 30	Balance c/d		9,110.00	Jun 30	Profit	JS 1,800.00
			9,800.00			9,800.00
					Balance b/d	9,110.00

Dr	8	Drawings Account		Cr		
19..			£	19..	£	
Jan 12	Cash	CB2	20.00	Jun 30	Capital account J	690.00
Feb 1	Bank	CB2	200.00			
Mar 6	Cash & bank	CB2	220.00			
Apr 15	Bank	CB2	250.00			
			690.00			690.00

Let us reason this out together. We are told that the proprietor had £8,000 to his credit at the beginning of the year. This was his investment in the business, and it was credited to his capital account. It remains intact until he wishes to increase or reduce his investment.

The profit for the six months to 30 June amounts to £1,800, and this is credited to his capital account. His various drawings have been debited to the drawings account. The total is now transferred to the capital account.

The proprietor, therefore, has two accounts.

- The capital account, showing his investment in the business.
- A drawings account, showing drawings as they take place. The drawings account is not written off to the capital account until the final accounts are prepared, and it is then transferred by means of a journal entry.

D. THE PURCHASES BOOK

There are two methods of purchase open to a merchant when in the market for goods. He or she either pays cash or secures the goods on credit. Goods obtained by the first method are known as “cash purchases”, and those acquired by the second method are “credit purchases”.

- **Cash Purchases**

Wherever goods are bought for cash, the entry is first recorded in the cash book on the credit side, and then posted to the debit of the purchases account in the ledger. The cash book is the book of original entry for all cash transactions.

- **Credit Purchases**

A subsidiary book, or book of original entry, variously known as a “purchases book”, “bought day book” and “invoice book”, is brought into use for this class of transaction. This book assumes various forms but, for the present, we suggest that you concentrate on the form given here, rather than complicating the issue by a premature study of advanced form of ruling.

All invoices received in respect of goods purchased are first of all checked and, if found to be in order, they are entered in the purchases book for posting to the ledger. They are then filed for future reference.

The purchases book is ruled to give the information shown below.

Purchases Book

Invoice		Name of Creditor	Folio	Amount of Invoice	Goods Value	Amount of VAT
No	Date					
				£	£	£

In view of the fact that invoices are received from different commercial houses, they bear widely-varying numbers which are impossible to use for filing purposes. To overcome this, it is customary to use one’s own numbers from 1 upwards, which could be placed on the invoice by a numbering machine or a distinctive coloured pencil. It is this number that is entered in the purchases book.

It is usually sufficient just to quote the name of the creditor but, where identification is necessary, the address could be given.

Details of each purchase are sometimes recorded in the purchases book but we do not consider this practice necessary, unless the prevailing system of accounting is such as to make this absolutely imperative. Whatever detailed information may, from time to time, be required can be obtained from the invoice itself, which is filed for this specific purpose.

Posting

All those names in the purchases book are creditors, because they yielded the benefit of the goods in question. It will therefore be necessary for us to credit the amounts given against their names to their personal accounts in the ledger. When this is accomplished, we must direct our attention to the other aspect of the transaction, i.e. the corresponding debit necessary to complete our double entry. Now, how is this effected?

It is a general practice for the purchases book to be totalled periodically (usually monthly), and it is this total that is debited to the purchases account in the ledger.

From this, you will see that the posting of the credits is effected individually, whereas the debit is posted in collective form. This sufficiently satisfies the requirements of double-entry accounting.

Classification of Purchases

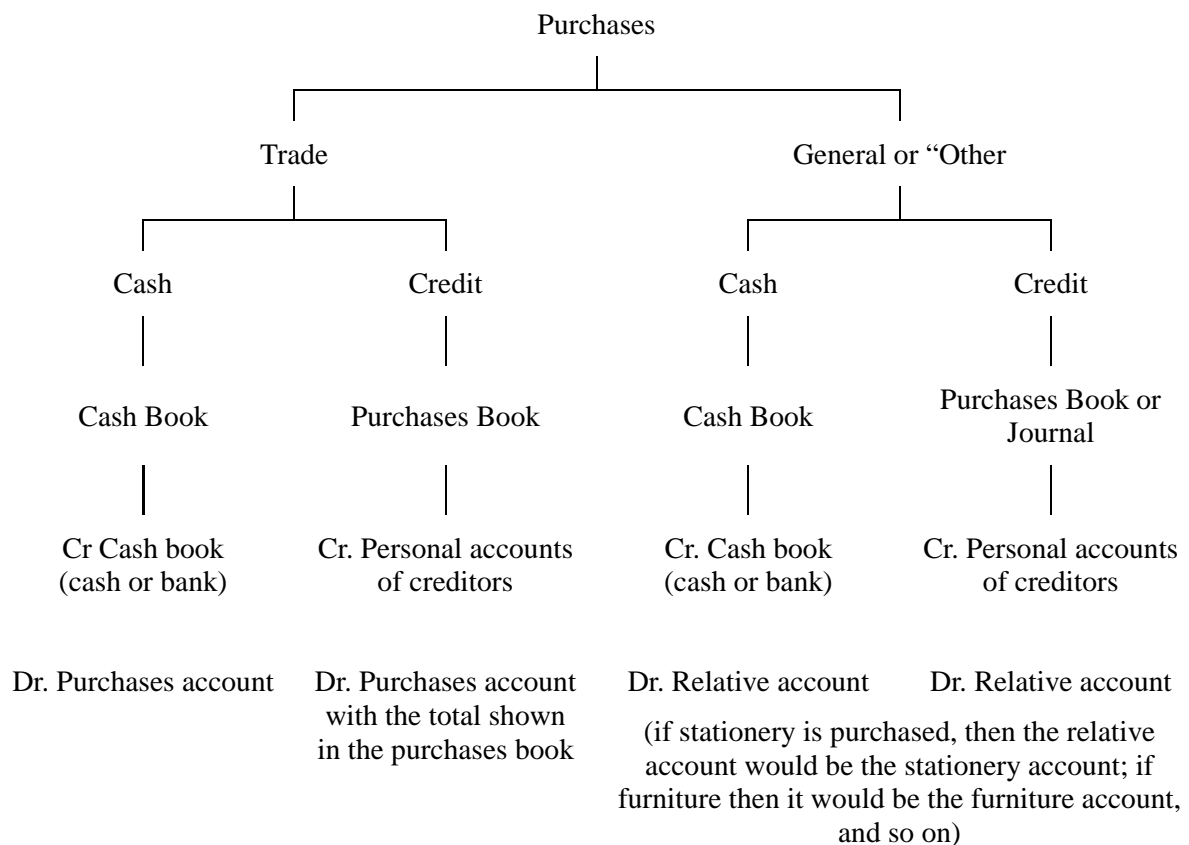
In precisely the same way as we have two distinct methods of purchase, so we have two distinct forms of purchase. These are classified as “trade” purchases and “general” or “other” purchases.

- ***Trade purchases*** represent goods intended for resale at a profit, i.e. goods in which it is the firm’s business to trade. For instance, the purchase of motor cars by a motor-car dealer is a trade purchase, because he professionally deals in motor cars.
- Compare this with the case of a butcher who buys a motor car for delivery purposes. It is not the profession of a butcher to deal in motor cars, as he is essentially a supplier of meat. So, in this case, such a purchase would be classified as “***general***” or “***other***”.

The important point to be borne in mind here is that all ***purchases on credit*** are to be entered in the purchases book, which is analysed like the petty cash book. All cash purchases are entered in the cash book.

The following diagram (Figure 4.1) will assist you in understanding how purchases are dealt with.

Figure 4.1: Classification of Purchases



Worked Example

Credit purchases for the month of January are as shown.

			£
Jan 6	R Ramey & Co. Ltd		3,500.00
	T Wilson Ltd		850.00
	M Morgan & Son		155.00
	S Jasper & Co.		254.20
Jan 15	T Wilson Ltd		154.40
	W Drysdale		83.30
	M Morgan & Son		285.20
Jan 28	R Ramey & Co Ltd		154.30
	S Jasper & Co		250.00
	J P Lee		555.30
Jan 31	W Drysdale		54.30

We are required to enter these in the appropriate book of original entry and post to the ledger. This is done as shown below.

1 Purchases Book

Invoice		Name of Creditor	Folio	Amount of Invoice
No	Date			
	19..			£
1	Jan 6	R Ramey & Co Ltd	6	3,500.00
2		T Wilson Ltd	7	850.00
3		M Morgan & Son	5	155.00
4		S Jasper & Co	3	254.20
5	Jan 15	T Wilson Ltd	7	154.40
6		W Drysdale	2	83.30
7		M Morgan & Son	5	285.20
8	Jan 28	R Ramey & Co Ltd	6	154.30
9		S Jasper & Co	3	250.00
10		J P Lee	4	555.30
11	Jan 31	W Drysdale	2	54.30
		Purchases Account Dr	1	6,296.00

Dr	1	Purchases Account			Cr
19..		£	19..		£
Jan 31	Sundry creditors PB1	6,296.00			

Dr	2	W Drysdale			Cr
19..		£	19..		£
			Jan 15	Purchases PB1	83.30
			Jan 31	Purchases PB1	54.30

Dr	3	S Jasper & Co.			Cr
19..		£	19..		£
			Jan 6	Purchases PB1	254.20
			Jan 28	Purchases PB1	250.00

Dr	4	J P Lee			Cr
19..		£	19..		£
			Jan 28	Purchases PB1	555.30

Dr	5	W Morgan & Son			Cr
19..		£	19..		£
			Jan 6	Purchases PB1	155.00
			Jan 15	Purchases PB1	285.20

Dr	6	R Ramey & Co. Ltd			Cr
19..		£	19..		£
			Jan 6	Purchases PB1	3,500.00
			Jan 28	Purchases PB1	154.30

Dr	7	T Wilson Ltd			Cr
19..		£	19..		£
			Jan 6	Purchases PB1	850.00
			Jan 15	Purchases PB1	154.40

The folio of the purchases book quoted in the ledger must be prefixed by the letters “PB”.

Never at any time must you ditto a folio number. Remember this, as it is most important.

Trade Discount

This is an allowance which is made in the form of a percentage deduction from the list or catalogue price of the goods sold, in order that the goods may be re-sold at a profit. A firm may supply goods to retailers and also directly to the public. In such a case, the retailers will, usually, be allowed trade discount based upon the retail prices as shown in the price list of the wholesaler.

For example, a shoe manufacturer may sell two types of shoe in his own shop – at £37.50 and £25.00 per pair, respectively. If another retailer purchased the shoes from the manufacturer, he would expect to receive a trade discount of, say 20% in order to resell the shoes at the same price. This 20% would cover his wages, overheads and profit. The trade discount would amount to £7.50 and £5.00 per pair, respectively.

In many industries, prices are subject to frequent – and, often, sudden – fluctuations, caused by a variety of factors. To avoid waste of time and money consequent upon a new issue of price lists or catalogues, the discount rate is adjusted to meet the requirements of the alteration. This reduces the actual prices charged to the correct selling prices.

It is of the utmost importance for you to avoid confusing “trade” discount with “cash” discount, with which we dealt in an earlier study unit. Cash discount is earned for prompt payment.

Trade discount **does not appear in your books at all**. When the invoice is received, it is the **net, and not the gross**, amount that is entered in your purchases book. In other words, the trade discount is first deducted from the list price shown on the invoice, and then the amount as reduced is entered in the purchases book.

E. THE SALES BOOK

Cash Sales

In the same way as there are cash and credit purchases, there are cash and credit sales.

To a fairly considerable extent, retail business is conducted on a cash basis – but precisely the opposite is in vogue in connection with wholesale trade and manufacturing businesses. Wherever goods are sold for cash, the entry is dealt with through the cash book.

Credit Sales

Immediately trade goods are sold, an invoice is made out in duplicate. The original is sent to the customer and a copy is filed for purposes of reference.

All these invoices are entered in a sales book, ruled in a manner identical to that of the purchases book. The only difference between the two is in the posting of the ledger. Instead of being creditors, the persons now named are debtors, and their ledger accounts are debited with the amounts given. Of course, the total **now** represents sales, not purchases.

F. RETURNS AND ALLOWANCES BOOKS

Every business that buys and sells goods, finds that there are occasional causes for complaint. For example, the goods may be damaged in transit, not of the quality ordered, or not of the correct type.

The matter is adjusted between the two parties, either by a return of the goods or by an allowance being made in the price charged. We can define the differences between these as follows.

- **Return of goods** – where the goods complained of are actually returned to the seller.

- **An allowance** – where the goods complained of are retained but an adjustment in the price charged is made by the seller.

The former involves a physical movement, which is not so in the case of the latter.

Debit and Credit Notes

From the point of view of book-keeping, returns and allowances are, generally, treated through the one account – although, in practice, you might occasionally come across a returns account as well as a allowances account.

The commercial procedure adopted in the event of a return of an allowance is quite easy to follow. The purchaser prepares what is known as a “debit note” (D/N), which corresponds very closely to an invoice, and which is forwarded to the seller who, if satisfied, accepts and gives a credit note (C/N) in exchange. In practice, debit notes are often not used, the purchaser writing a letter or telephoning if there is a complaint; but credit notes are always used, as the amount of an invoice has to be adjusted. However, where VAT is involved Customs and Excise requires all transactions to be supported by a prime document i.e. purchase invoice, sales invoice, debit note or credit note.

There are many businesses which make additional charges on their invoices for packing cases, tins, barrels, drums, etc. These are classified as “returnables” only where it is the customary practice in that trade for these containers to be returned when empty. If this is the practice, then credit notes would be issued by the seller on receipt of the returnables.

Inward and Outward Aspects

Where book-keeping is concerned, there are two aspects to returns and allowances: from the point of view of the seller, and from that of the purchaser.

- **Returns and allowances inwards**

If goods previously sold are returned to the seller, such a transaction is viewed as “inwards” by the seller. A moment’s reflection will show you that the goods move inwards from the purchaser to the seller – and, therefore, this entitles the former to receive credit for them.

We cannot adopt precisely the same form of reasoning in the case of allowances, because there is no physical movement of goods. Here, we are guided solely by the movement of liability.

When goods are sold and delivered in terms of the contract, the purchaser is liable, to the seller, for the contract price of the goods. From this, we see that the liability moves towards the purchaser. Now, if the purchaser applies for a justifiable reduction in price, there is a reverse movement of liability in respect of that portion of the contract price. In other words, the liability moves inwards towards the seller and, here again, this entitles the purchaser to a credit note in respect of the reduction.

- **Returns and allowances outwards**

Where goods previously purchased are returned by the purchaser, the transaction is regarded as “outwards” by the purchaser.

Where the liability in respect of allowances moves from the purchaser to the seller, in respect of goods previously purchased, such movement is outwards.

Carriage

Again there are two aspects to this.

- **Carriage inwards** – that relating to expenses incurred on purchases.
- **Carriage outwards** – that relating to expenses incurred on sales.

You must remember that, unlike the other inwards and outwards aspects, when carriage in and out appear in the books of a trader or company, they both represent an expense and they should, therefore, appear on the debit side of the trial balance.

The Book-keeping Entries

We now open two new subsidiary books, known as a “returns and allowances inwards book” and a “returns and allowances outwards book”, which are identical in form and ruling to the purchases and sales book.

- **Returns and allowances inwards book**

All returns and allowances inwards are entered in this book of original entry and posted to the ledger.

All personal accounts in the ledger are credited with their individual amounts, and the total is debited to a returns and allowances inwards account in the ledger. The personal accounts mentioned here are those of your debtors.

- **Returns and allowances outwards book**

All returns and allowances outwards are recorded in this subsidiary book and posted to the ledger.

All personal accounts in the ledger are debited with their respective amounts, and the total is credited to a returns and allowances outwards account in the ledger. The personal accounts referred to here are those of your creditors.

Returns, inwards and outwards, are also, respectively, known as “sales return” and “purchases return”.

Example

		£
Jan 3	Returned goods to Dandy Ltd as being inferior to those ordered and received their C/N for	185.30
Jan 6	Claimed and was allowed a reduction in price for faulty goods delivered by S Swinton & Son for which a C/N was received for	53.30
Jan 8	S Jenkinson returned damaged goods and claimed on us as per their D/N for	225.30
Jan 12	C/N passed in favour of J Robertson for empties returned	54.20
Jan 18	Claimed on Dandy Ltd for empties returned and was allowed	100.00
Jan 25	S Boydell was dissatisfied with the price charged for the goods delivered and we accordingly passed C/N for	50.00

The entries in the books are as follows:

Returns and Allowances Inwards Book

Credit note		Name of Debtor	Folio	Amount
No	Date			
	19..			£
201	Jan 8	S Jenkinson	4	225.30
202	Jan 12	J Robertson	5	54.20
203	Jan 25	S Boydell	3	50.00
		Returns and allowances inwards account Dr	1	329.50

Returns and Allowances Outwards Book

Debit note		Name of Creditor	Folio	Amount
No	Date			
	19..			£
681	Jan 3	Dandy Ltd	6	185.30
682	Jan 6	S Swinton & Son	7	53.30
683	Jan 18	Dandy Ltd	6	100.00
		Returns and allowances outwards account Cr	2	338.60

The ledger accounts are then made up as follows.

Dr	1	Returns and Allowances Inwards Account	Cr
19..		£	19..
Jan 31	Sundry debtors RB1	329.50	£

Dr	2	Returns and Allowances Outwards Account	Cr
19..		£	19..
	Sundry debtors RB1	329.50	Jan 31
			Sundry creditors RB1
			338.60

If you have difficulty in deciding which return is a debit and which is a credit, remember that the entry must be on the side opposite to the original entry to which it relates – as in the following example.

Purchases Account

Original entry			
----------------	--	--	--

Purchases Returns or Returns Outwards

		Entry here	
--	--	------------	--

Sales

		Original entry	
--	--	----------------	--

Sales Returns or Returns Inwards

Entry here			
------------	--	--	--

Dr 3 S Boydell Cr

19..	£	19..		£
		Jan 25	Returns & allowances	50.00
			RB1	

Dr 4 S Jenkinson Cr

19..	£	19..		£
		Jan 8	Returns & allowances	225.30
			RB1	

Dr 5 J Robertson Cr

19..	£	19..		£
		Jan 12	Returns & allowances	54.20
			RB1	

Dr 6 Dandy Ltd Cr

19..	£	19..		£
Jan 3			Returns & allowances	
	185.30		RB1	
Jan 18			Returns & allowances	
	100.00		RB1	

Dr	7	Messrs S Swinton & Son		Cr	
19..			£	19..	£
Jan 6	Returns & allowances	RB1	53.30		

“RB” quoted in the folio column in the ledger stands for “returns book”, and it must prefix all folio numbers entered in the ledger from either the returns inwards or returns outwards book. It is obvious to which book the reference is.

G. A TYPICAL TRANSACTION

We shall now consider a typical transaction in which the seller is Alpha Wholesalers plc and the purchaser is the Premier Grocery Shop.

- The seller will first send a price list to the purchaser, who will make an **order**. The goods will be despatched with a delivery note, the latter being a carbon copy of the invoice, with the prices and money columns obliterated. The purchaser can check the goods against the delivery note on arrival. A second copy of the delivery note is signed by the purchaser and returned to the driver as proof of delivery.
- When goods are sent by a carrier, an **advice note**, similar to the delivery note, is sent by post, so that the purchaser knows the goods are on the way. A consignment note is used instead of a delivery note. This is an instruction to the carrier, and it is more detailed. When the goods are delivered, the carrier’s delivery book is signed as proof of delivery.
- The **invoice** is sent by post to the purchaser separately from the goods. It is sometimes sent before despatch in place of the advice note. The invoice shows the liability of the parties and whether any cash discount is obtainable.
- A **credit note** is sent by the seller if the invoice overcharges or if it is agreed to reduce the price because of a complaint by the purchaser, or if chargeable containers are returned empty. The credit note is, usually, printed in red. If the invoice undercharges for the goods, a supplementary invoice will be sent by the seller.
- At the beginning of each month, the seller will send a **statement of account** to all debtors, showing their liability and requesting payment. It will start with the balance brought forward from the previous month, then list the invoices and credit notes issued during the month, and it ends with the total debt outstanding.

The following figures illustrate all the various elements involved in the process of purchasing a few groceries from a wholesaler.

ALPHA WHOLESALERS PLC50 Church Road
Southampton**PRICE LIST*****Jams and preserves***

Strawberry jam	450g jar	£4.00 per doz.
Raspberry jam	450g jar	£3.50 per doz.
Plum jam	450g jar	£3.00 per doz.
Tinned rhubarb	350g tin	£3.00 per doz.
Tinned pears	350g tin	£3.50 per doz.

Orders over £50 carriage paid

2½% one month

ORDER

Order no. 345

PREMIER GROCERY SHOP20 Winters Way
Portsmouth
1 August 19..**To:** Alpha Wholesalers Ltd
50 Church Road
Southampton***Please supply:***

4 doz. jars strawberry jam	@ £4.00 per doz.
2 doz. tins rhubarb	@ £3.00 per doz.
2 doz. tins pears	@ £3.50 per doz.

pp Premier Grocery Shop

INVOICE			
Invoice no. 9876		8 August 19..	
ALPHA WHOLESALERS PLC			
50 Church Road Southampton			
To: Premier Grocery Shop 20 Winters Way Portsmouth			
Order No. 345		Terms: 2½% one month	
<i>Quantity</i>	<i>Description</i>	<i>Price per doz.</i>	<i>£</i>
4 doz.	Strawberry jam	£4.00	16.00
2 doz.	Tinned rhubarb	£3.00	6.00
2 doz.	Tinned pears	£3.50	7.00
			29.00
Carriage extra			2.50
			31.50
<i>Per own vehicle</i>			
<i>E. & O. E.</i>			

Note: The abbreviation "E. & O. E." means "errors and omissions excepted" – i.e. the supplier is not bound by the invoice if it is incorrect.

CREDIT NOTE	
C/N no. 9876	12 August 19..
ALPHA WHOLESALERS PLC	
50 Church Road Southampton	
To: Premier Grocery Shop 20 Winters Way Portsmouth	
Details	£
Tins of rhubarb returned owing to damage, 10 August 19.. (Invoice no. 9876)	2.25

These transactions will be entered into the books of the two businesses as follows.

Books of Alpha Wholesalers plc

Invoice		Name of Debtor	Folio	Amount of Invoice
No	Date			
	19..			£
9876	Aug 6	Premier Grocery Shop	28	31.50
				31.50
		Sales account	Cr 12	29.50
		Carriage Outward	Cr 14	2.50

Note: The carriage on this consignment should not be included in the sales. It is a credit to carriage outward account, which is a distribution expense.

Returns and Allowances Inwards Book

Credit note		Name of Debtor	Folio	Amount
No	Date			
	19..			£
21	Aug 12	Premier Grocery Shop	28	2.25
		Returns and allowances inwards account Cr	14	2.25

Dr	28	Premier Grocery Shop			Cr
19..		£	19..	£	
Aug 8	Sales	SB4	31.50	Aug 12	Returns & allowances
					RB1
					2.25
					Cash and discount
					CB1
					29.25
			31.50		
					31.50

Cash Book							
Dr	Receipts			Payments			Cr
	Discount	Cash	Bank		Discount	Cash	Bank
19..	£	£	£	19..	£	£	£
Aug 24 Premier Grocery Shop 28	0.75	28.50					

Books of Alpha Wholesalers plc

The books of Premier Grocery Shop should show the same transactions as the above – but debits become credits, and vice versa. Also, folio numbers will be different and the invoice and credit note will be given new numbers on receipt. Without looking at the books of Alpha Wholesalers plc, write up the books of Premier Grocery Shop. Then compare your figures with the above.

ANSWERS TO QUESTION FOR PRACTICE

Journal

Opening statement of assets and liabilities as at 1 January 20..

			£		£
Cash in hand	Dr	CB	650.00		
Cash in bank	Dr	CB	3,285.20		
Sundry debtors:					
A Arcus	Dr	1	253.40		
S Bromwell	Dr	2	825.00		
T Sullivan	Dr	3	950.00		
Office furniture	Dr	6	750.00		
Stock	Dr	7	2,000.00		
Motor van	Dr	8	1,800.00		
Sundry creditors:					
H High		4			650.00
D Low		5			1,000.00
Capital account		9			8,863.60
			10,513.60		10,513.60

The cash book is shown on the next page, and the ledger accounts are as follows.

Dr		1		A Arcus			Cr	
19..			£	19..			£	
Jan 1	Balance	J	253.40	Jan 3	Cash and discount	CB	253.40	

Dr		2		S Bromwell			Cr	
19..			£	19..			£	
Jan 1	Balance	J	825.00	Jan 4	Bank	CB	400.00	
Jan 9	Bank (returned cheque)	CB	400.00	Jan 12	Cash	CB	400.00	

CASH BOOK

Dr		Receipts, January 19..				Payments, January 19..				Cr							
		Discount		Cash		Bank				Discount		Cash		Bank			
		£	p	£	p	£	p	£	p	£	p	£	p	£	p		
Jan 1	Balance	J															
3	A Arcus	1		3,285	00	20		Jan 7	H High	4				620	00		
4	Cash sales	10	13	240	00	00		8	D Low	5				500	00		
8	S Bromwell	2		680	00	00			Bank	C							
9	Cash	C				400	00		Sundry expenses	11			1,320	00			
12	Bank	C		200	00	00			Postage	11			25	00			
14	S Bromwell	2		400	00	00			Wages	12			12	50			
14	Cash sales	10		1,000	00	00		9	Stationery	13			50	00			
14	Cash	C				1,400	00		S Bromwell - cheque				25	00			
25	Bank	C		200	00	00			returned	2					400	00	
28	Cash sales	10		1,500	00	00		14	Cash	C				200	00		
	Cash	C				1,500	00	15	Bank	C			1,400	00			
								17	Drawings	14				250	00		
									Sundry expenses	11			15	00			
									Petrol and oil	11			30	00			
									Wages	12			75	00			
									Stationery	13			10	00			
									Purchases	15					500	00	
									Rent	16					250	00	
									Licence	17			50	00			
									Cash	C					200	00	
									Cash purchases	15			100	00			
									Bank	C			1,500	00			
									Salaries	18					500	00	
									Balances	c/d			17	50	4,725	20	
Feb. 1	Balances	19	13	4,630	00	00	8,145	20		20		30	00	4,630	00	8,145	20
		b/d		17	50		4,725	20									

Dr	3	T Sullivan			Cr
19..			£	19..	£
Jan 1	Balance	J	950.00		

Dr	4	H High			Cr
19..			£	19..	£
Jan 7	Bank and discount	CB	650.00	Jan 1	Balance J 650.00

Dr	5	D Low			Cr
19..			£	19..	£
Jan 7	Bank	CB	500.00	Jan 1	Balance J 1,000.00

Dr	6	Office Furniture Account			Cr
19..			£	19..	£
Jan 1	Balance	J	750.00		

Dr	7	Stock Account			Cr
19..			£	19..	£
Jan 1	Balance	J	2,000.00		

Dr	8	Motor Van Account			Cr
19..			£	19..	£
Jan 1	Balance	J	1,800.00		

Dr	9	Capital Account			Cr
19..			£	19..	£
				Jan 1	Balance J 8,863.60

Dr	10	Sales Account			Cr
19..		£		19..	£
				Jan 1	Cash CB 680.00
				Jan 12	Cash CB 1,000.00
				Jan 25	Cash CB 1,500.00

Dr	11	Sundry Expenses Account			Cr
19..		£		19..	£
Jan 8	Cash CB	25.00			
Jan 8	Cash CB	12.50			
Jan 17	Cash CB	15.00			
Jan 17	Cash CB	30.00			

Dr	12	Wages Account			Cr
19..		£		19..	£
Jan 8	Cash CB	50.00			
Jan 17	Cash CB	75.00			

Dr	13	Stationery Account			Cr
19..		£		19..	£
Jan 8	Cash CB	25.00			
Jan 17	Cash CB	10.00			

Dr	14	Drawings Account			Cr
19..		£		19..	£
Jan 15	Bank CB	250.00			

Dr	15	Purchases Account			Cr
19..		£		19..	£
Jan 20	Bank CB	500.00			
Jan 25	Cash CB	100.00			

Dr	16	Rent Account		Cr	
19..			£	19..	£
Jan 22	Bank	CB	250.00		

Dr	17	Repairs Account		Cr	
19..			£	19..	£
Jan 22	Cash	CB	50.00		

Dr	18	Salaries Account		Cr	
19..			£	19..	£
Jan 31	Bank	CB	500.00		

Dr	19	Discounts Allowed Account		Cr	
19..			£	19..	£
Jan 31	Sundries	CB	13.40		

Dr	20	Discounts Received Account		Cr			
19..			£	19..	£		
				Jan 31	Sundries	CB	30.00

Study Unit 5

The Trial Balance

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A. INTRODUCTION TO THE TRIAL BALANCE

The trial balance is an extensive check which serves two purposes:

- To check the numerical accuracy of the double-entry system;
- As a precursor to preparing the periodic reports of the profit and loss account and balance sheet.

Earlier, we considered how to balance a ledger account. If we extracted all of the debit and credit balances from a set of accounts, we might find something like the following:

J. Barker
Statement of Balances in Books at 31 March

Account	Debit	Credit
	£	£
Capital		10,000
Cash	750	
Sales		3,350
Van	4,500	
Purchases	7,900	
Rent	350	
Tufnell Supplies – creditor		3,000
Wages	460	
Purchase returns		200
Discounts received		190
B. Binks – debtor	700	
Sales returns	80	
Bad debts	2,000	
	16,740	16,740

The statement of balances extracted should balance, because every time an entry was made in the ledger accounts, a debit and a credit should have been entered. The statement of balances in the books is therefore another name for the trial balance.

Notice that debit items include expenses and assets, whereas credit items include income and liabilities.

Need for a Trial Balance

The basic rule of double entry book-keeping is that for every *debit* entry there must be a *credit* entry. So, if you have followed this rule, the total debit entries made in your accounts should equal the total credit entries made.

To check the accuracy of the entries, you could go through *every* entry at the end of the month or financial period, to ensure that all postings have been made correctly, but this would take a long time as there would be hundreds or thousands of them. It would be like doing the whole month's or year's book-keeping work all over again.

So, instead of doing this, we just take the **balances** on all the accounts and prepare what we call a **trial balance**.

We have seen that the balance on an account is a summary of the overall position on that account – i.e. whether more value has been given or received.

- If the debit side (value received) is heavier than the credit side (value given) then you bring down the balance on the debit side and we call it a **debit balance**.
- If the credit side is heavier, you bring down the balance on the credit side and we call it a **credit balance**.

As the total debits and credits in the accounts should be equal, we can also say that:

the total of debit balances must equal the total of credit balances

This is the basis of preparing a trial balance.

Preparing the Trial Balance

The process of preparing a trial balance comprises three steps:

- Balance all the accounts in the books.
- List all the debit balances and add them up.
- List all the credit balances and add them up.

If the book-keeping is correct, the two totals should be the same – i.e. the trial balance should balance.

Example

Let's suppose the following five accounts are the only accounts in the books.

Dr		Jones	Cr
	£		£
Sales	60	Returns	40
Sales	70	Cash	50
Sales	80	Balance c/d	120
	210		210
Balance b/d	120		

Dr		Brown	Cr
	£		£
Returns	30	Purchases	60
Cash	30	Purchases	40
Balance c/d	40		
	100		100
		Balance b/d	40

Dr		Sales		Cr	
	£		£		
Jones	40	Jones	60		
Balance c/d	170	Jones	70		
		Jones	80		
	210				210
		Balance b/d			170

Dr		Purchases		Cr	
	£		£		
Brown	60	Brown	30		
Brown	40	Balance c/d	70		
	100				100
Balance b/d	70				

Dr		Cash/Bank		Cr	
	£		£		
Jones	50	Brown	30		
		Balance c/d	20		
	50				50
Balance b/d	20				

We can now prepare a trial balance by listing and totalling the balances:

Trial Balance

Debit balances		Credit balances	
	£		£
Jones	120	Brown	40
Purchases	70	Sales	170
Cash/Bank	20		
	210		210

This balances because for each transaction there are two opposite entries in the accounts. If you had missed one then the trial balance would not agree.

We could have written the trial balance in a slightly different way:

Trial balance as at

	Dr	Cr
	£	£
Jones	120	
Brown		40
Sales		170
Purchases	70	
Cash/Bank	20	
	210	210

Practice Questions 1

Now try drawing up a trial balance yourself from the following accounts as at 29 February.

Cash book

Dr				Cash Book				Cr		
	Discount	Cash	Bank		Discount	Cash	Bank			
	£	£	£		£	£	£			
Feb 1 Balance b/d			2,191	Feb 8 Sparrow				1,559		
Feb 3 Eagle			96	Lark	137			1,233		
Owl			200	Feb 14 Wages				1,125		
Feb 15 Sales			1,643	Feb 23 Drawings				500		
Feb 29 Balance c/d			507	Feb 29 Shop expenses				220		
			4,637			137		4,637		
				Mar 1 Balance b/d						507

General ledger accounts

Dr		Capital Account		Cr	
	£				£
		Feb 1	Balance b/d		7,320

Dr		Drawings Account		Cr	
		£			£
Feb 23	Bank	500			

Dr		Fixtures And Fittings (At Cost) Account		Cr	
		£			£
Feb 1		5,000	Feb 28	Balance c/d	5,540
Feb 2	Vulture	540			
		5,540			5,540
Mar 1	Balance b/d	5,540			

Dr		Provision For Depreciation Account		Cr	
		£			£
			Feb 1	Balance b/d	1,200

Dr		Stock Account		Cr	
		£			£
Feb 1	Balance b/d	2,726			

Dr		Purchases Account		Cr	
		£			£
Feb 28	Sundry creditors accounts	1,037			

Dr		Sales Account		Cr	
		£			£
Feb 28	Balance c/d	5,078	Feb 15	Bank	1,643
			Feb 28	Sundry creditors accounts	3,435
		5,078			5,078
			Mar 1	Balance b/d	5,078

Dr		Wages Account		Cr	
		£			£
Feb 14	Bank	1,125			

Dr		Shop Expenses Account		Cr	
		£			£
Feb 29	Bank	220			

Dr		Discount Received Account		Cr	
		£			£
			Feb 28	Bank	137

Dr		Bad Debts Account		Cr	
		£			£
Feb 29	Owl	437			

Creditors Ledger

Dr		Wren		Cr	
		£			£
			Feb 1	Balance b/d	825

Dr		Sparrow		Cr	
		£			£
Feb 8	Bank	1,559	Feb 1	Balance b/d	1,559

Dr		Lark		Cr	
		£			£
Feb 8	Bank	1,233	Feb 1	Balance b/d	1,370
Feb 8	Discount received	137	Feb 6	Purchases	475
	Balance c/d	475			
		1,845			1,845
			Mar 1	Balance b/d	475

Dr		Vulture		Cr	
		£		£	
			Feb 2 Fixtures & fittings		540

Dr		Robin		Cr	
		£		£	
			Feb 6 Purchases		562

Debtors Ledger

Dr		Eagle		Cr	
		£		£	
Feb 1	Balance b/d	96	Feb 3	Bank	96
Feb 21	Sales	1,200	Feb 28	Balance c/d	1,200
		1,296			1,296
Mar 1	Balance b/d	1,200			

Dr		Hawk		Cr	
		£		£	
Feb 1	Balance b/d	1,624	Feb 28	Balance c/d	3,859
Feb 28	Sales	2,235			
		3,859			3,859
Mar 1	Balance b/d	3,859			

Dr		Owl		Cr	
		£		£	
Feb 1	Balance b/d	637	Feb 3	Bank	200
			Feb 29	Bad debts	437
		637			637
Mar 1	Balance b/d	637			

Now check your answer with the one given at the end of the unit.

B. ERRORS IN THE TRIAL BALANCE

The trial balance reveals some errors but not others – it is *not an infallible check* on the accuracy of the book-keeping.

Types of Error Revealed

The trial balance will show up these types of error:

- The entering of debits on the credit side and vice versa
- The omission of balances
- Incorrect amounts entered
- Errors in addition, including errors in balancing
- Failure to complete the double entry; a debit entered but not the corresponding credit, or a credit entered without the debit.

Example

Study this example carefully. It contains several errors and – with the errors undetected and uncorrected – shows how it is impossible to balance the trial balance.

The transactions to be entered in the accounts are:

May 1	Sales to Jones	£600
3	Sales to Thomas	£300
5	Sales to Jones	£600
6	Jones returned goods	£100
7	Purchases from Brown	£500
8	Purchases from Taylor	£200

The books of original entry have been completed as follows:

Sales Day Book

		£
May 1	Jones	600
3	Thomas	300
5	Jones	600
31	Sales	1,500

Sales Returns Book

		£
5	Jones	100
31	Sales	100

Purchases Day Book

		£
May 7	Brown	500
8	Taylor	200
31	Purchases	600

The ledger accounts have been completed as follows:

Dr		Sales		Cr	
May 31	Sundries	£		May 31	Sundries
		100			1,500
May 31	Balance c/d	1,400			
					1,500
		1,500			
			Jun 1	Balance b/d	1,400

Dr		Purchases		Cr	
May 31	Sundries	£		May 31	Balance c/d
		600			600
					600
		600			
Jun 1	Balance b/d	600			

Dr		Jones		Cr	
May 1	Sales	£		May 31	Balance c/d
		600			1,300
May 5	Sales	600			
May 6	Sales	100			
					1,300
		1,300			
Jun 1	Balance b/d	1,300			

Dr		Thomas		Cr	
May 3	Sales	£ 300	May 31	Balance c/d	£ 300
		300			300
Jun 1	Balance b/d	300			

Dr		Brown		Cr	
May 31	Balance c/d	£ 500	May 7	Purchases	£ 500
		500			500
			Jun 1	Balance b/d	500

Dr		Taylor		Cr	
May 31	Balance c/d	£ 200	May 8	Purchases	£ 200
		200			200
			Jun 1	Balance b/d	200

Developing the trial balance from these accounts gives the following:

Trial balance as at 31 May

	Dr	Cr
	£	£
Purchases	600	
Sales		1,400
Jones	1,300	
Brown		500
Thomas	300	
Taylor		200
	<u>2,200</u>	<u>2,100</u>

Can you identify the problems which give rise to the fact that the trial balance will not balance?

They are:

- Error in addition in Purchases Day Book, resulting in incorrect entry into Purchases Account.
- Error in entering credit as a debit in Jones Account, in respect of return of goods.

These two accounts would need to be corrected as follows:

Dr		Purchases		Cr			
May 31	Sundries	£	700	May 31	Balance c/d	£	700
			700				700
Jun 1	Balance b/d		700				

Dr		Jones		Cr			
May 1	Sales	£	600	May 6	Sales	£	100
May 5	Sales		600	May 31	Balance c/d		1,100
			1,200				1,200
Jun 1	Balance b/d		1,100				

The revised trial balance now balances as follows:

Trial balance as at 31 May

	Dr	Cr
	£	£
Purchases	700	
Sales		1,400
Jones	1,100	
Brown		500
Thomas	300	
Taylor		200
	<u>2,100</u>	<u>2,100</u>

Locating Errors

When the trial balance fails to balance, it is important to have a system of checking to help locate the error(s). This might involve a series of simple checks:

- Check day book totals.
- Check addition of ledger accounts and make sure each balance is correct.

- Check that all the balances have been recorded in the trial balance.
- Check that the balances have been entered in the trial balance on the correct side.

If these checks fail you will then have to return to the individual transactions for the period and check that the double entry is correct, i.e. that for every debit there is a credit and vice versa.

It is also good practice to have entered the folio (or reference) numbers of the various accounts in the trial balance in case you wish to refer to any of these accounts in a hurry or to check on a missing ledger account.

Practice Questions 2

Consider the following errors, causing a failure to balance a trial balance, and link each with the result of the errors by using the numbered results below (for example, error A may link with result 3).

Errors

- A Debit balance on John's account entered as credit balance in the trial balance
- B Sale on credit posted to sales account as a credit but not recorded as a debit in the relevant personal account
- C Purchases day book totalled at £3,600 instead of £2,900
- D Credit balance of £600 omitted from trial balance
- E Jones' account contained debits of £2,000 and credits of £3,200. The balance carried down to the credit side was £2,200 instead of £1,200.

Results

- 1 Credit side of trial balance too large
- 2 Debit side of trial balance too small
- 3 Debit side of trial balance too large
- 4 Credit side of trial balance too small

You may use numbers 1-4 more than once, and offer two of numbers 1 – 4 as a result of one of the errors A – E.

Now check your answers with the ones given at the end of the unit.

Errors Not Revealed

The trial balance may balance, yet some book-keeping errors may still remain undetected. These types of error are classified as follows.

(a) Errors of omission

If both the debit and the credit entries for a transaction have been omitted, the trial balance will not be affected and will not therefore reveal the error. The transaction will simply not exist as far as the books of the business are concerned.

(b) Compensating errors

These occur where two or more errors, by chance, cancel each other out. For example, if one account is over-debited by £20 and another account is over-credited with £20 or two accounts are over-credited with £10 each.

(c) Errors of commission

These are clerical errors, and may be of two types:

- ***Mistake in the books of original entry***

If the original entry in the day book is made wrongly, the entire record for that transaction will be wrong.

- ***Misposting of accounts***

These occur where the amount has been entered in the books in the right type of account, but not in the correct individual account.

For example, A Jones, a customer, sends £65 to settle his account. This is correctly debited in the cash book, but the credit entry is made in the account of A R Jones, also a debtor of the business. The trial balance will agree because a debit and credit entry have been made. Overall, the debtor's figure will be correct, but when this is broken down, A Jones' and A R Jones' accounts will both be incorrect.

(d) Errors of principle

These are errors involving posting an entry to the wrong *type or class* of account – for example, debiting the purchase of a fixed asset to the purchases account instead of the asset account.

Example

Study this example carefully. It contains several errors which are not revealed by the trial balance which, as a result, still balances.

The following transactions are to be posted to the day book and ledger accounts:

Jan 1	Sales to Jones	£680
5	Sales to Thomas	£240
8	Purchases from Nelson	£300
12	Jones returned goods	£60
14	Sales to Taylor	£500

They are entered as follows:

Sales Day Book

		£
Jan 1	Jones	680
5	Thomas	240
12	Jones	60
31	Sales	980

Purchases Day Book

		£
Jan 5	Nelson	300
31	Purchases	300

Dr		Sales		Cr			
Jan 31	Balance c/d	£	980	Jan 31	Sundries	£	980
			980				980
				Feb 1	Balance b/d		980

Dr		Purchases		Cr			
Jan 31	Balance c/d	£	300	Jan 31	Sundries	£	300
			300				300
				Feb 1	Balance b/d		300

Dr		Jones		Cr			
Jan 1	Sales	£	680	Jan 31	Balance c/d	£	740
Jan 12	Sales		60				740
			740				
Feb 1	Balance b/d		740				

Dr		Thomas		Cr			
Jan 5	Sales	£	240	Jan 31	Balance c/d	£	240
			240				240
Feb 1	Balance b/d		240				

Dr		Nelson		Cr			
Jan 8	Purchases	£	300	Jan 31	Balance c/d	£	300
			300				300
Feb 1	Balance b/d		300				

Trial balance as at 31 January

	Dr	Cr
	£	£
Purchases		300
Sales		980
Jones	740	
Thomas	240	
Nelson	300	
	1,280	1,280

Again, can you spot the errors hidden in the entries?

They are:

- An error of omission – where the sales to Taylor has been missed from the Sales Day Book
- An error of commission – a mistake in a book of original entry where the return of goods has been incorrectly posted to the Sales Day Book (and then debited to Jones account)
- A compensating error – where the purchases by Nelson has been debited to Nelson's account and credited to Purchases account (instead of vice versa).

Practice Questions 3

Which of the following errors would be revealed in the trial balance?

- (a) Day book added to £3,600 instead of £3,800
- (b) Purchase posted to credit of Jones' account instead of Johnstone
- (c) Sale posted to credit of Thomas instead of Thompson
- (d) Balance of customer's account wrongly calculated
- (e) Sale for £200 written in day book as £220
- (f) Purchase posted from day book to personal account at £70 instead of £77
- (g) Cash discount transferred from cash book at £16 instead of £18. Both discount account and personal account were wrong.

Now check your answers with the ones given at the end of the unit.

C. CORRECTION OF ERRORS

Using the Journal

When you discover an error, it must be put right. The adjustment to be made will, of course, depend on the type of error involved.

When the error involves a misposting, you make the correction by using a debit and credit entry, effected through the journal. You must *not* correct the books by altering or scratching out the entries already made.

Example

Jan 1: A sale was made to J Simon, but the £400 was debited in error to T Smithson.

Dr	J Simon		Cr
	£		£

Dr	T Smithson		Cr
Jan 1 Sales	£ 400		£

The debit has to be moved from Smithson's account and debited to Simon. The journal entry will be:

Journal				
Jan 1	J Simon	Dr	£ 400	
	T Smithson			400
	Being an adjustment of amount debited in error			

If you find the trial balance fails to balance because of the insertion of a balance on the wrong side, then you can easily put this right redrafting the trial balance. If the day books are wrongly added, then you insert the correct total and debit or credit a further amount to the sales or purchases account.

Suspense Accounts

A suspense account is an account to which you put that aspect of a transaction with which, through lack of information, experience or guidance, you feel unable to deal satisfactorily. For example, you might credit to a suspense account the double entry for a postal order or cash received (the cash book would be debited), if the name of the sender were not known. When this information became known, you would use the journal to transfer the item out of the suspense account and into the account of the customer who had sent it.

Similarly, if a firm has a substantial bill for repairs and improvements, the double entry (corresponding to the payment in the cash book) might be made in a suspense account until the correct proportion of revenue and capital expenditure had been agreed, when transfers would be made from the suspense account to the repairs account and the appropriate asset accounts.

A further use of a suspense account is that of the temporary location for a trial balance difference. In order that one can prepare a set of final accounts from an unbalanced trial balance, the trial balance is made to agree artificially by putting into the suspense account sufficient debit or credit to make the trial balance totals agree. When the errors have been found, then the necessary transfers will be made from the suspense account to the accounts in which the error had been made.

Note the following features of suspense accounts:

- they are *temporary*;
- they are a *substitute* for the missing balance or balances in the trial balance;
- they are *closed* as soon as the problem has been resolved – through correct identification of the location of the transaction or the location of the error in the trial balance;
- they fulfil the basic rules of double entry.

Consider the following trial balance:

Trial balance as at

	Dr	Cr
	£	£
Purchases	400	
Sales		600
Jones		500
Smith	300	
Nelson	200	
Cash	200	
Capital		200
	1,100	1,300

You can think immediately of two possible reasons for the failure of the trial balance to balance. Either the debit side is underweighted, i.e. missing debits of £200, or the credit side is overweighted, i.e. it includes credits of £200 which should not be there. But the error could also be explained in different ways, for example:

- A posting of £100 to the credit side which should be a debit (correcting that would make the credit side total £1,200 and the debit total £1,200).
- A missing debit of £350 and a missing credit of £150. (Correcting that would make the debit side £1,450 and the credit side £1,450).

A suspense account can be used to resolve the problem on a temporary basis, allowing the trial balance to balance and the preparation of the final accounts to go ahead before the actual errors in the books have been found.

The following suspense account would be opened in the ledger:

Dr	Suspense Account		Cr
	£		£
Balance	200		

The trial balance will now balance as follows:

Trial balance as at

	Dr	Cr
	£	£
Purchases	400	
Sales		600
Jones		500
Smith	300	
Nelson	200	
Cash	200	
Capital		200
Suspense Account	200	
	1,300	1,300

Now suppose that, after some checking, you find that the error is that a sale made to Nelson for £200 was not recorded in his account even though it had been recorded in the sales account. Using the journal first, you put this right by means of the double entry which effectively closes the suspense account:

Journal

	Dr	£	£
Nelson	Dr	200	
Suspense account			200
Being error in the posting of sales			

The ledger accounts will then appear as follows:

Dr	Suspense Account		Cr
Balance	£	Nelson	£
	200		200

Dr	Nelson		Cr
Sales	£		£
Suspense (sales)	200		
	200		

£400 will then appear against Nelson’s name in the trial balance – thus causing it to balance.

There may be several errors, and you can correct each in the same way as above, using the journal and a suspense account.

Practice Questions 4

1. The following book-keeping errors occurred during a particular month:
 - (a) Purchases were correctly entered in the nominal account but one transaction of £500 was omitted from the supplier's account, and another one for £350 was entered in the supplier's account as £530.
 - (b) A sales return was debited to the customer's account instead of credited. It was for £80.
 - (c) A sale of £720 was debited to Smith's account as £620 in error, although it was correct in the sales account.

Explain what effect, in total and individually, these errors would have on the trial balance, i.e. by how much one side would be greater than the other.

2. A trial balance fails to balance and a suspense account with a credit balance is opened for £330. Later, the following errors are revealed:
 - (a) A sale was debited to Smith instead of Simon. It was for £220.
 - (b) A sale for £420 was correctly entered in the sales account but was not debited to Jones' personal account.
 - (c) A purchase for £750 was correctly entered in the nominal account but was omitted from the personal account.

Prepare journal entries to show the necessary corrections for all these items, and show the entries in the suspense account in the ledger.

3. A trial balance fails to balance and a suspense account was opened with a debit balance of £200. Investigation revealed the following errors:
 - (a) A purchase of goods for resale of £100 was credited to the account of G Lewis in error. It should have been credited to G Laws.
 - (b) A purchase for £300 was correctly entered in the purchases account but was not credited to King Ltd's personal account.
 - (c) Sales for £500 were correctly entered in the sales account but was omitted from L Patel.

Prepare journal entries to show the necessary corrections for all these items, and show the entries in the suspense account in the ledger.

4. Prepare a trial balance from the following balances extracted from the books of James Green on 31 December. (Think about whether each item would be a debit or a credit balance.)

James Green

	<i>£</i>
Cash in hand	685.10
Bank	2,459.30
Capital	13,090.50
Drawings	1,104.30
Office furniture	1,000.00
Delivery van	850.00
Stock	9,000.00
Purchases	7,505.30
Sales	12,901.30
Purchases returns	405.20
Sales returns	709.30
Discounts allowed	154.20
Discounts received	125.00
Salaries and wages	1,000.00
Rent	500.00
Office expenses	285.40
Lighting	114.10
Stationery and printing	155.00
Debtors: S Martin	495.60
J Jasper	4,762.40
R Redmond	2,742.00
Creditors: E Gray	1,899.00
D Griffin	3,260.50
T Neal	1,840.50

5. Correct the following trial balance:

Trial Balance

	Dr	Cr
	<i>£</i>	<i>£</i>
Cash in hand		200
Bank overdraft	2,000	
Capital account		?
Drawings	500	
Land and buildings		20,000
Office furniture	750	
Bank loan	1,500	
Stock	5,000	
Purchases		3,500
Sales	4,800	
Returns inwards		650
Returns outwards	700	
Wages	200	
Salaries	700	
Rents received	500	
Discounts allowed		250
Discounts received	100	
Sundry expenses	150	
Rates, taxes and insurance	380	
Licence	250	
Stationery	150	
Electricity	50	
Telephone	40	
Postage	30	
Sundry debtors		8,000
Sundry creditors	3,000	
	20,800	32,600

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

Practice Questions 1

Trial balance as at 29 February

	Dr	Cr
	£	£
Bank		507
Capital		7,320
Drawings	500	
Fixtures and fittings (at cost)	5,540	
Provision for depreciation		1,200
Stock	2,726	
Purchases	1,037	
Sales		5,078
Wages	1,125	
Shop expenses	220	
Discount received		137
Bad debts	437	
Creditors: Wren		825
Lark		475
Vulture		540
Robin		562
Debtors: Eagle	1,200	
Hawk	3,859	
	16,644	16,644

Practice Questions 2

- A 1, 2
- B 2
- C 3
- D 4
- E 1

Practice Questions 3

The following errors will be revealed: (a), (d) and (f).

Practice Questions 4

1. The debit side will be £380 greater than the credit side. This can be explained as follows:

- | | | |
|-----|-----------------------------|-------------------------|
| (a) | Credit entry lacking | £500 |
| | Credit entry too much | £180 (i.e. £530 – £350) |
| | Net shortage on credit side | £320 |
- (b) £80 needs deducting from debit side and adding to credit side.
- (c) The debit side will be short by £100.

Summary

Shortage on credit side	£320	(a)
	£80	(b)
	£400	
Shortage on debit side	£100	(c)
<i>less</i> Overvalued by	£80	(b)
Net shortage on debit side	£20	
Net difference = £380 (£400 – £20)		

2. The journal entries are as follows:

Journal

		£	£
(a)	Simon Dr	220	
	Smith		220
	Being an adjustment of misposting to Smith instead of Simon		
(b)	Jones Dr	420	
	Suspense account		420
	Being debit to personal account omitted from the books		
(c)	Suspense account Dr	750	
	Personal account		750
	Being purchase missed from personal account		

Note: Error (i) did not involve the suspense account.

The suspense account will be completed as follows:

Dr	Suspense Account		Cr
Personal Account	J	£ 750	Balance
			Jones
		750	J
			£ 330
			420
			750

3. The journal entries are as follows:

Journal			
(a)	G Lewis	£ 100	£
	G Laws		100
	Being adjustment of misposting to G Laws instead of G Lewis		
(b)	Suspense	300	
	King Ltd		300
	Being credit to the personal account of King Ltd, omitted from books		
(c)	L Patel	500	
	Suspense		500
	Being sales omitted from the personal account of L Patel		

The suspense account will be completed as follows:

Dr	Suspense Account		Cr
Balance	£ 200	L Patel	£ 500
King Ltd	300		
	500		500

4.

J Green
Trial Balance as at 31 December

	Dr	Cr
	£	£
Cash in hand	685.10	
Bank	2,459.30	
Capital		13,090.50
Drawings	1,104.30	
Office furniture	1,000.00	
Delivery van	850.00	
Stock	9,000.00	
Purchases	7,505.30	
Sales		12,901.30
Purchases returns		405.20
Sales returns	709.30	
Discounts allowed	154.20	
Discounts received		125.00
Sales and wages	1,000.00	
Rent	500.00	
Office expenses	285.40	
Lighting	114.10	
Stationery and printing	155.00	
Debtors: S Martin	495.60	
J Jasper	4,762.40	
R Redmond	2,742.00	
Creditors: E Gray		1,899.00
D Griffin		3,260.50
T Neal		1,840.50
	33,522.00	33,522.00

5.

Trial Balance

	Dr	Cr
	£	£
Cash in hand	200	
Bank overdraft		2,000
Capital account		28,200
Drawings	500	
Land and buildings	20,000	
Office furniture	750	
Bank loan		1,500
Stock	5,000	
Purchases	3,500	
Sales		4,800
Returns inwards	650	
Returns outwards		700
Wages	200	
Salaries	700	
Rents received		500
Discounts allowed	250	
Discounts received		100
Sundry expenses	150	
Rates, taxes and insurance	380	
Licence	250	
Stationery	150	
Electricity	50	
Telephone	40	
Postage	30	
Sundry debtors	8,000	
Sundry creditors		3,000
	40,800	40,800

You can see that many of the balances were on the wrong side of the trial balance.

The figure for capital is the balancing figure once all the other balances have been listed correctly. This comes from the accounting equation:

$$\text{Capital} + \text{Liabilities} = \text{Assets}$$

Therefore:

$$\text{Capital} = \text{Assets} - \text{Liabilities}$$

Study Unit 6

Final Accounts 1: The Trading Account

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A. INTRODUCTION TO FINAL ACCOUNTS

Every business, sooner or later, wants to know the result of its trading, i.e. whether a profit has been made or a loss has been sustained, and whether it is still financially solvent. For this reason, the following accounts must be prepared at the end of the year (or at intervals during the year if the business so chooses).

- ***Trading Account***

The purpose of this account is to ascertain the gross profit of a trading business, and this is done by showing the revenue from the sale of goods, and the cost of acquiring those goods.

- ***Profit and Loss Account***

A business has many expenses not directly related to its manufacturing processes or its trading activities, and these are shown in the profit and loss account. By subtracting them from gross profit, a figure for net profit (or loss) is found. (A business which provides a service rather than buying and selling goods prepares a profit and loss account, but not a trading account.)

A business also has to decide what to do with its net profit. The manner in which this profit is distributed (or “appropriated”) is shown in the appropriation account, which is effectively an annex to the profit and loss account. This account is not used in the case of a sole trader, the net profit being transferred to the proprietor’s capital account.

- ***Balance Sheet***

This is a statement of the assets owned by the business, and the liabilities outstanding. Strictly speaking, it is not an account but it is included in the term “final accounts”.

From these accounts you will see that we arrive at the results of a firm’s trading in two stages. First, from the trading account we ascertain gross profit. Secondly, from the profit and loss account we determine net profit.

In this short unit, we shall examine the first of these accounts.

B. TRADING ACCOUNT

For the sake of simplicity, we will assume that the business purchases ready-made goods, and re-sells them at a profit.

What is gross profit? Once you grasp the significance of this term, the function of the trading account is abundantly clear. If I purchase a quantity of seeds for £10 and sell them for £15, I have made a gross profit of £5. Thus, in the trading account we have to collect all those accounts which directly concern themselves with the cost or selling price of the goods in which we trade.

The main items in the trading account are shown in the model layout on the next page (Figure 6.1).

You should note that trade discounts (if any) must be deducted from purchases and sales before they are entered in the books.

Carriage inwards, i.e. on purchases, and customs duties on purchases, etc. are expenses incidental to the acquisition by the business of the goods which are intended for re-sale, and are therefore debited to the trading account.

Note that these accounts are opened in the ledger and posted, as all other accounts. When presented separately for information they are often shown in a vertical format, as illustrated.

Figure 6.1: Specimen trading account**Trading Account for the Period**

	£	£	£
Sales			XXXX
<i>less</i> Sales returns (Returns inwards)			<u>XXXX</u>
Turnover			XXXX
Cost of goods sold:			
Opening stock		XXXX	
Purchases	XXXX		
<i>less</i> Returns (returns outwards)	<u>XXXX</u>		
	XXXX		
<i>add</i> Carriage inwards	<u>XXXX</u>	XXXX	
		XXXX	
<i>less</i> Closing stock		<u>XXXX</u>	XXXX
Gross Profit/(Loss)			<u>XXXX</u>

Note how sales returns are deducted from sales and purchase returns are deducted from purchases.

Gross profit may be defined as “the excess of the selling price of goods over their costs price, due allowance being made for opening and closing stocks, and for the costs incidental in getting the goods into their present condition and location”.

C. STOCK

Stock Account

When a business commences, a value for opening stock is debited to the stock account from the journal. No further entry is made in the stock account until the trading account is prepared, and then the figure in the stock account is transferred to the trading account as opening stock.

Stock at the end of the year is valued and this credit value is entered in the trading account, and the double entry is completed by debiting the stock account. In other words, the stock account shows only the opening and closing balances of stock, and is not concerned at all with the amount of stock held at any time in the course of a year.

Example

A retailer commences business on 1 January with a stock worth £10,000. On 14 March she purchases goods worth £20,000, and on 15 September further goods worth £15,000. On 31 December she estimates that her shop contains £12,000 worth of stock. Sales for the year amounted to £40,000.

Her accounts will be as follows:

Dr		Purchases Account		Cr	
Year 1		£		Year 1	£
Mar 14	Sundry creditors	20,000		Dec 31	Trading account
Sept 15	Sundry creditors	15,000			35,000
		35,000			35,000

Dr		Stock Account		Cr	
Year 1		£		Year 1	£
Jan 1	Opening balance	10,000		Jan 1	Trading account
Dec 31	Trading account	12,000			10,000

Dr		Trading Account for year ending 31 December		Cr	
		£			£
	Stock at 1 January	10,000			Sales
	Purchases	35,000			40,000
	Gross Profit	7,000			Stock at 31 December
		52,000			12,000
					52,000

Note the *double entries* carefully. At the beginning of the year the balance on the stock account is £10,000. This is transferred to the trading account by crediting stock account and debiting trading account. The stock at the end of the year is valued at £12,000, so debit stock account and credit trading account.

You should *deduct* the figure of closing stock from the total of opening stock plus purchases. The validity of the double entry is not affected, but it makes the trading account clearer, giving a figure for cost of goods sold, as shown below:

Trading Account for the year ending

	£	£
Sales		40,000
Cost of goods sold:		
Opening stock	10,000	
Purchases	35,000	
	45,000	
<i>less</i> Closing stock	12,000	33,000
Gross Profit/(Loss)		7,000

It should now be clear to you that purchases account shows the amount of goods purchased during the year, and does not show whether these were all sold or not. Stock account shows the stock at the beginning of the year, and gives no indication of the value of stock in between. Some businesses keep a record of their stocks, but this record is held by the storeman or cost office and is *not* a part of the financial books.

To help you understand the stock account, let us assume that the retailer in the above example values her stock at £16,000 at the end of the second year, and £19,000 at the end of the third year. The stock account will be as follows:

Dr		Stock Account		Cr	
Year 1		£		Year 1	£
Jan 1	Opening balance	10,000		Jan 1	Trading account
					10,000
Dec 31	Trading account	12,000		Year 2	
				Jan 1	Trading account
Year 2					12,000
Dec 31	Trading account	16,000		Year 3	
				Jan 1	Trading account
Year 3					16,000
Dec 31	Trading account	19,000			

At the end of each year, when the trading account is prepared, two entries are made in the stock account, but one is dated 1 January and the other 31 December, the first and last dates in the period covered by the trading account. The stock account, therefore, *always shows a debit balance outstanding*, being the closing balance of the previous year.

Private Drawings of Stock

When goods are withdrawn from stock by the proprietor for his or her own consumption, *always credit sales account* at selling price, not stock account. This is because consumption of goods increases the amount sold on behalf of the business. Any value of closing stock you are given takes account of the fact that goods withdrawn are no longer in stock.

Example

A trader purchased £10,000 worth of toys for resale. Stock at the beginning of the year was £2,000 and at the end of the year £1,500. The trader withdrew £200 worth of toys for personal presents to her family; her sales were £15,000. The situation may be illustrated in the following manner:

Trading Account for the year ending

	£	£
Sales		15,200
Cost of goods sold:		
Opening stock	2,000	
Purchases	10,000	
	<u>12,000</u>	
<i>less</i> Closing stock	1,500	<u>10,500</u>
Gross Profit/(Loss)		4,700

The double entry for the £200 will be debited to the proprietor's drawings account.

Treatment of Final Stock in the Trading Account

Always show closing stock as a deduction on the debit side of the trading account, after opening stock and purchases have been totalled. Do the same for closing stocks of raw materials and work in progress in the manufacturing account.

When a trial balance is drawn up, the balance on the stock account will normally show the opening stock for the period (or, more correctly, the closing stock of the previous period – however, these are identical). The trial balance will not normally include a figure for closing stock; this must be valued, and is, therefore, not a balance that can be extracted from the books.

When closing stock appears in a trial balance, you will find either that:

- The trading and profit and loss accounts have already been made out; or
- There appears also an item “Cost of Goods Sold” which has been arrived at by deducting closing stock from the total of opening stock and purchases.

In either of these cases, all you will need to do is to insert the figure of closing stock on the balance sheet. It will not be needed in the revenue account.

Example

From the following balances extracted from the books of the AB Co. Ltd, prepare a trading account for the year ended 31 December. (Note that these are not all the balances in the books of the company – only those necessary for compiling the trading account.)

Balances as at 31 December Year 1

	Dr	Cr
	£	£
Purchases	140,251	
Sales		242,761
Purchases returns		4,361
Sales returns	9,471	
Stock as at 1 January	54,319	
Customs and landing charges (re Purchases)	2,471	
Carriage inwards	4,391	

Stock in hand at 31 December was valued at £64,971.

As you know that all these items are trading account items, this makes the exercise easy, but you must remember that in the larger examples which you will get later, it will be for you to select out of the various items in the trial balance those particular ones which are trading account items; therefore, memorise now the items which go into a trading account.

AB Co Ltd
Trading Account for the year ended 31 December . . .

	£	£	£
Sales	242,761		
<i>less</i> Returns	9,471		233,290
Cost of goods sold:			
Opening stock		54,319	
Purchases	140,251		
<i>less</i> Returns	4,361		
	135,890		
Customs and landing charges	2,471		
Carriage inwards	4,391	142,752	
		197,071	
<i>less</i> Closing stock		64,971	132,100
Gross Profit/(Loss)			101,190

Closing Journal Entries

As explained earlier in this course, nothing should be entered in the ledger until the entry is first passed through the appropriate book of original entry. It is, therefore, strictly correct to say that the balances on stock account, purchases account, etc. should be journalised before they are posted to the manufacturing, trading and profit and loss accounts.

However, it is now general practice to omit these journal entries, and you need not make them unless specifically required.

If it is the custom of a business to make these journal entries in accordance with strict book-keeping theory, they would read as follows for the AB Co. Ltd, whose trading account was prepared above.

Journal

19..		£	£
Dec 31	Trading Account	312,093	
	Stock Account		54,319
	Purchases		140,251
	Returns inwards		9,471
	Customs and landing charges		2,471
	Carriage inwards		4,391
	Profit and loss account		101,190
Dec 31	Sales	242,761	
	Returns outwards	4,361	
	Stock	64,971	
	Trading account		312,093

The entries are then posted to the ledger in the usual way, with the result that the various accounts are closed and the balances transferred to the trading account. The purchases account and sales account, for example, would be closed as follows:

Dr		Purchases Account		Cr	
19..		£		19..	£
Dec 31	Balance b/d	140,251		Dec 31	Trading a/c J
					140,251

Dr		Sales Account		Cr	
19..		£		19..	£
Dec 31	Trading a/c J	242,761		Dec 31	Balance b/d
					242,761

If the closing balances are journalised as above, the journal folio must be entered in all ledger accounts, and the ledger folios must be entered in the journal. Where trading and profit and loss accounts are prepared without the use of the journal, ledger account folios must be entered in all accounts for cross-referencing.

Practice Question

From the following balances, extracted from the ledger of H Smith & Co. on 31 October, prepare the trading account of the business for the year ended 31 October:

Purchases, £24,720; Sales, £40,830; Purchases returns, £1,230; Sales returns, £1,460;
Carriage inwards, £2,480; Stock as at 1 November, i.e. beginning of year, £6,720; Stock
at end of year, £7,630.

In what way would the trading account of H Smith & Co. be different if the proprietor, Mr Smith, had withdrawn goods for his own use valued at £500 selling price?

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTION FOR PRACTICE

H. Smith & Co.
Trading Account for the Year Ended 31 October

	£	£	£
Sales		40,830	
<i>less</i> Returns		1,460	39,370
Cost of goods sold:			
Opening stock		6,720	
Purchases	24,720		
<i>less</i> Returns	1,230	23,490	
Carriage inwards		2,480	
		32,690	
<i>less</i> Closing stock		7,630	25,060
Gross Profit/(Loss)			14,310

If the proprietor had withdrawn goods for his own use valued at £500 selling price, the profit would be increased by £500 to £14,810 because the sales would be increased to £39,870 and the drawings account of Mr Smith would be debited by a similar amount, i.e. £500.

Study Unit 7

Final Accounts 2: The Profit and Loss Account

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A. NATURE OF THE PROFIT AND LOSS ACCOUNT

Note that some of the points covered in this study unit concern partnerships and limited companies, with which you may not be familiar. These topics will be covered in more detail in later study units. Although our prime interest in this study unit is the Profit and Loss Account we shall inevitably make reference to the Balance Sheet as well.

Purpose of the Profit and Loss Account

No business can function without incurring what are known as “overhead” expenses. For example, there are salaries, rent, stationery and other incidentals which must be met out of the gross profit made. In addition, a business may earn a small income quite apart from the gross profit, e.g. dividends and interest on investments.

The purpose of the profit and loss account is to *gather together all the revenue credits and debits* of the business (other than those dealt with in the manufacturing and/or trading account) so that it can be seen whether a net profit has been earned or a net loss incurred for the period covered by the account.

Preparing the Account

The profit and loss account is a ledger account, and forms part of the double-entry process. The ledger account balances for all accounts that are used in calculating the profit are transferred to the profit and loss account. Examples of the accounts transferred are: rent, rates, wages, bank charges.

We find net profit as follows:

$$\begin{aligned} \text{Net profit} &= \text{Gross profit (from trading account)} \\ &\quad \textit{plus} \text{ Any revenue income other than from sales} \\ &\quad \textit{less} \text{ Expenses} \end{aligned}$$

Remember we are calculating the net profit for a *period of time* (e.g. a year) and hence the gross profit, revenue income other than from sales, and expenses should be related to this period of time. A gross loss is incurred when the expenses are greater than the gross profit plus other revenue income in the period.

(a) Credits

The items credited to the profit and loss account include the gross profit on trading and other *regular* forms of income. These include:

- Gross profit on trading – brought from the trading account.
- Discounts received.
- Rents received in respect of property let. If rents are received from the sub-letting of part of the factory premises, the rent of which is debited to the manufacturing account, then these should be credited to manufacturing account. In effect, this reduces the rent debit to that applicable to the portion of the factory premises actually occupied by the business.
- Interest and dividends received in respect of investments owned by the business.
- Bad debts recovered.
- Other items of profit or gain, other than of a capital nature, including profits on the sale of assets.

(b) Debits

Debited to the profit and loss account are all the revenue expenses of the business which have not already been dealt with in the trading and manufacturing accounts. These charges are often described as *overhead expenses* and may be grouped as follows:

- **Administration expenses** – These cover rent, rates, lighting, heating and repairs, etc. of office buildings, directors' remuneration and fees, salaries of managers and clerks, office expenses of various types. In general, all the expenses incurred in the **control** of the business and the direction and formulation of its policy.
- **Sales expenses** – Included in these are commission and salaries paid to sales staff, warehouse rent, rates and expenses in respect of the warehouse, advertising, and any expenses connected with the **selling** of the goods dealt in.
- **Distribution expenses** – Here we have cost of carriage outwards. (You will remember that carriage inwards, i.e. on purchases, is debited to the trading account; it is not really an overhead charge as it increases the cost of the purchase.) Under this heading, we also have such items as freight (where goods are sold to customers abroad), expenses of motor vans and wages of the drivers, wages of packers and any other expenses incurred by the **distribution** or delivery of the goods dealt in.
- **Financial expenses** – These include interest on loans, hire purchase agreements, debentures, mortgages, bank overdrafts, etc. and discounting charges on bills of exchange.

No capital items, e.g. the purchase of plant and machinery, must be debited to the profit and loss account. Sales and purchases of capital items are shown in the balance sheet as additions to, or reductions from, the fixed asset balance concerned.

(c) Special Items

There are several items which do not occur in the normal course of business, but which must be carefully considered at the end of each trading period. These are listed here and examined fully in the following sections.

- **Bad debts** which are known at the end of the period and are written off in the profit and loss account.
- **Discount received** (i.e. a reduction in actual price paid to suppliers for prompt payment) and **discount allowed** to customers for prompt payment. Discount received is effectively income; discount allowed is an expense.
- **Depreciation** of assets such as office furniture and equipment will be debited to profit and loss account. We will look at depreciation later.
- Expenses paid in advance (**prepayments**) or in arrears (**accruals**).

Example

Charles Baxter
Profit and Loss Account for Year Ended 31 December

	£	£
Gross profit		25,000
Interest on deposit at bank		250
Discounts received		320
		25,570
<i>less:</i> General expenses	4,027	
Depreciation on furniture	328	
Provision for bad debts increase	100	
Discounts allowed	115	4,570
Net profit		21,000

B. BAD DEBTS

Writing Off Bad Debts

If all the debtors of a firm paid their accounts, no mention of this item would be made. Unfortunately, however, they do not, and many firms incur what are known as bad debts. For instance, where a debtor is declared a bankrupt, the whole of his debt will not be settled. Only a part of it is paid, but as far as the law is concerned, the debt is wiped out. Consequently, the unsettled portion of the debt is of no value, and it must be written off as a loss. Similarly, if debtors disappear, or if their debts are not worth the trouble of court action, the debts must be written off.

The debtor's account is credited with the amount of bad debt, thus closing the account. To complete the double entry, the bad debts account is debited. Thus, all bad debts incurred during the trading period are debited to the bad debts account.

At the end of the trading period, the bad debts account is credited with the total bad debts to close the account. Here again, the double entry is preserved by debiting profit and loss account with the same amount. It would be improper to show worthless debts as assets of the firm and this is the manner in which they are dealt with.

Example

On 1 January W White owes £50 and B Black £60. B Black leaves his place of business and cannot be traced at all. W White is declared bankrupt and £15 is received from her estate on 10 August towards settlement of the debt. At the end of the year these debts are written off as being bad debts.

Dr		1		W White		Cr	
Jan 1	Balance b/d	£	50.00	Aug 10	Cash CB	£	15.00
					Bad debts account 3		35.00
			50.00				50.00

Dr		2		B Black		Cr	
Jan 1	Balance b/d	£	60.00	Dec 31	Bad debts account 3	£	60.00
			60.00				60.00

Dr		3		Bad Debts Account		Cr			
Dec 31	W. White	1	£	35.00	Dec 31	Profit & loss a/c	4	£	95.00
	B. Black	2		60.00					95.00
				95.00					95.00

Profit and Loss Account for the year ended 31 December

Dr	4		Cr
Bad debts account	3	£ 95.00	£

Bad debts are sometimes considered to be a financial expense, for they arise from the financial policy of selling goods on credit, rather than for cash. However, they are more appropriately classified as a **sales expense**, as they result directly from sales.

Provision for Bad Debts

In addition to writing off bad debts as they occur or when they are known to be bad, a business should also provide for any losses it may incur in the future if its present debtors are unable to meet their obligations. If a business has book debts totalling £100,000, it is not very likely that all those debtors will pay their accounts in full. Some of the debts may prove to be bad, but this may not be known for some considerable time.

The amount of the provision should be determined by a careful examination of the list of debtors at the balance sheet date. If any of these debts are bad, they should be written off at once. If any debts are “doubtful”, it should be estimated how much the debtor is likely to pay. The balance of the debt is potentially bad, and the provision should be the total of such potentially bad amounts. The debtor’s account will not, however, be written off until it is definitely known that it is bad.

The provision is formed for the purpose of reducing the value of sundry debtors on the balance sheet to an amount which it is expected will be received from them. It is **not** an estimate of the bad debts which will arise in the succeeding period. A moment’s reflection will show that the bad debts arising in the next period will result from credit sales made within that period as well as from debts outstanding at the beginning of the period. It is, therefore, quite incorrect to debit bad debts against the “Provision for Bad Debts”. Once the latter account has been instituted, the only alteration in it is that required to increase or decrease its balance – by debit or credit to profit and loss account. This alteration is included as a financial expense when a debit.

Never show “Provision for Bad Debts” with the liabilities of the balance sheet – it is always deducted from the amount of debtors under the assets of the balance sheet.

Example

At 1 January the provision for bad debts stands as at £4,000. During the year, bad debts are incurred to the extent of £3,670, of which £1,470 is owed by J Day and £2,200 is owed by E Cox. On 31 December, it is decided to write off the bad debts and to increase the provision to be 5 per cent of the sundry debtors. The balance of sundry debtors stands at £100,000 after writing off the bad debts.

Dr	1	Provision For Bad Debts		Cr	
Year 1		£	Year 1	£	
Dec 31	Balance c/d	5,000	Jan 1	Balance b/d	4,000
				Profit & loss a/c 5 (increase in provision)	1,000
		5,000			5,000
			Year 2		
			Jan 1	Balance b/d	5,000

C. DISCOUNTS

Discounts Received and Discounts Allowable

You will remember from your previous knowledge of discount that there are two distinct accounts – discounted received and discounts allowed. The former is a credit balance and the latter is a debit balance. At the end of the trading period, the following adjustments are carried out:

- discounts received account is debited and profit and loss account credited, as items under this heading are benefits received by the firm;
- discounts allowed account is credited and profit and loss account is debited, as these items are expenses of the firm.

Provision for Discounts Allowable

If a business allows discounts to its customers for prompt payment, it is likely that some of the debtors at the balance sheet date will actually pay less than the full amount of their debts. To include “Sundry Debtors” at the face value of such debts, without providing for discounts which may be claimed, is to overstate the financial position of the business. Accordingly, a “Provision for Discounts Allowable” should be made by debit to profit and loss account. If made on a percentage basis, it should be reckoned by relation to potentially good debts, i.e. sundry debtors less provision for bad debts, for if it is thought that a debt is sufficiently doubtful for a provision to be raised against it, it is hardly likely that the debtor will pay his account promptly and claim discount!

The provision appears as a deduction in the balance sheet, from sundry debtors (after the provision for bad debts has been deducted). It is a **financial expense**.

Conversely, it is not correct to have a “Provision for Discounts Receivable”. Such a provision would be based on sundry creditors and would represent the amount of discount which the business could expect to earn by paying creditors promptly. This provision should not be made as it would anticipate “profits” that might not actually arise.

D. DEPRECIATION

Another item which must be taken into account is depreciation of such assets as plant and machinery, warehouse or factory buildings, patents used in the manufacturing processes, etc. All these assets are used directly in the manufacture of goods or in trading, and, as a result of this, their value must decrease owing to wear and tear, etc. This decrease in value is caused by the manufacture or trading, and must be allowed for when overhead charges are being debited to the profit and loss account.

Depreciation is defined as the measure of the wearing out, consumption, or other loss of value of a fixed asset whether arising from use, passage of time, or obsolescence through technology and market changes. It should be allocated to accounting periods so as to charge a fair proportion to each accounting period during the expected useful life of the asset.

Calculation of Depreciation

Strictly speaking, the total amount which should be provided as depreciation over the life of the asset is:

- **original cost** (this may include such expenses as legal charges on the acquisition of a property, or carriage inwards and installation expenses for machinery, etc.), **less**
- **scrap or residual value** (this is the “break-up” value of the asset at the end of its life).

However, this calculation is only used for the straight-line method (see below).

By “life” of the asset we mean the useful working life. This may be measured in years, months, etc.

The problem here is that the scrap or residual value and the actual working life are not accurately known when the fixed asset is sold. When the asset is used for several accounting periods, we need to make a charge against profits in **each** period for the depreciation during that period. However, we do not know accurately the value of depreciation until the asset is sold. We therefore need to make an **estimate** for each period, and this is known as the **provision for depreciation**.

A separate provision for depreciation is made for each class of fixed asset, e.g. provision for depreciation on motor vehicles, provision for depreciation on fixtures and fittings.

No method of calculating the provision for depreciation can be 100% accurate. All that we can aim for is to allocate the estimated depreciation as fairly as possible over the periods in which the fixed asset is used.

There are numerous methods of calculating depreciation, the main ones being:

- Fixed instalment or straight-line method
- Fixed percentage or reducing balance method
- Revaluation method

We will only be looking at the first two items here and considering the book keeping entries necessary.

Fixed Instalment or Straight-Line Method

The cost of the asset, less the estimated break-up value, is divided by the number of years the asset is expected to be used in the business. The figure thus obtained is debited to the profit and loss account each year and the provision for depreciation account is credited.

This is one of the most popular methods of calculating the provision for depreciation.

The chief objection to this method is that, while the depreciation figure debited to the profit and loss account each year is constant, the amount incurred for repairs will increase as the end of the life of the asset approaches. Therefore the profit and loss account bears a heavier charge in the later years of the asset's life. However, this is really as it should be, for as a general rule, a new asset is more advantageous to a business than an old one.

Example

Cost of plant and machinery, £10,500. Estimated break-up value, £500. Life expected, 10 years.

$$\begin{aligned} \text{Annual depreciation charge} &= \frac{\text{£}10,500 - \text{£}500}{10} \\ &= \text{£}1,000 \end{aligned}$$

The double-entry book-keeping is as follows (note that the provision for depreciation is made at the period end when the final accounts are being drawn up):

Dr	Plant and Machinery Account		Cr
Year 1	£	Year 1	£
Jan 1 Cash	10,500		

Dr		Provision for Depreciation on Plant and Machinery Account		Cr	
Year 1		£		Year 1	£
Dec 31	Balance c/d	1,000		Dec 31	Profit and loss account
		1,000			1,000
Year 2				Year 2	
Dec 31	Balance c/d	2,000		Jan 1	Balance b/d
				Dec 31	Profit and loss account
		2,000			1,000
Year 3				Year 3	
				Jan 1	Balance b/d
					2,000

Profit and Loss Account for year ended 31 December Year 2 (Extract)

	£	£
Gross profit		X
<i>less</i> Expenses:		
Provision for depreciation on plant and machinery	1,000	

Balance Sheet as at 31 December Year 2 (Extract)

Fixed Assets	Cost	Depreciation	Net
	£	£	£
Plant and machinery	10,500	2,000	8,500

We will look further at balance sheets in the next study unit and the above is shown for completeness. However, note that, for balance sheet purposes, the asset account and relevant depreciation are shown together so that the net value reflects the fact that the asset is reducing in value and that its market value is less than that of a new asset.

Fixed Percentage or Reducing Balance Method

Here, the provision for depreciation is calculated each year by a fixed percentage on the diminishing balance. The percentage decided upon will depend on the type of asset. For example, assets having long lives, e.g. buildings, will have a small percentage, say 2½%, but assets which quickly depreciate, e.g. lorries, will bear a large percentage (say 15%). With this method the profit and loss account is debited with a smaller amount year by year.

Example

Cost of plant and machinery £10,500; depreciation at 12% per annum.

We calculate the provision for depreciation on plant and machinery as follows:

Year 1		£
Jan 1	Cost	10,500
Dec 31	<i>less</i> Provision for depreciation (at 12%)	<u>1,260</u>
	Balance	<u>9,240</u>
Year 2		
Jan 1	Balance	9,240
Dec 31	<i>less</i> Provision for depreciation (at 12% of balance)	<u>1,109</u>
	Balance	<u>8,131</u>

etc.

The double-entry book-keeping for this would be as follows:

Dr	Plant and Machinery Account		Cr
Year 1	£	Year 1	£
Jan 1	Cash	10,500	

Dr	Provision for Depreciation on Plant and Machinery Account		Cr		
Year 1	£	Year 1	£		
Dec 31	Balance c/d	1,260	Dec 31	Profit and loss account	1,260
	1,260			1,260	
Year 2		Year 2			
Dec 31	Balance c/d	2,369	Jan 1	Balance b/d	1,260
	2,269		Dec 31	Profit and loss account	1,109
				2,369	
Year 3		Year 3			
		Jan 1	Balance b/d	2,369	

This method is appropriate where an asset is likely to lose value quickly in its early years, e.g. a motor car, or where the asset is likely to become quickly outdated because of technological improvement, e.g. a computer. The chief disadvantages are that the asset is never completely written off, and where a very short life is normal for an asset, the percentage required to write it off is very high.

Whatever method is used the depreciation account will increase in value, each year, until such time as the balance on the account equals the cost price shown in the asset account. At this point, no further depreciation should be charged to the profit and loss account.

Normally, the depreciation provision is the last charge to be shown in both the manufacturing account and the profit and loss account.

Where there is a profit or loss on the disposal of a fixed asset, this is shown in the profit and loss account immediately after the expense of depreciation.

E. PREPAYMENTS AND ACCRUALS

The main aim of book-keeping is to provide a ‘true and fair view’ of the profitability and current state of the business. The profitability is dealt within the trading and profit and loss accounts and the current state of the business is dealt with in the balance sheet.

In order to provide a ‘true and fair view’ we need to make certain adjustments, otherwise we would not be complying with the accruals or matching concept.

Need for Adjustments

When we prepare a set of final accounts for the financial year, we must include **all** the expenditure and costs relevant to the period covered by the accounts, but no more, and **all** the sales and revenue for the period. If we just take out the balances on all the ledger accounts, this requirement will probably not be fulfilled.

This is because, for instance, certain invoices may have been received, posted to the ledger and paid, but the charge contained in them actually covers a period of perhaps six months or a year. Unless the accounting period we are working on ends at exactly the same time as the charge on that invoice, we would be including in the accounts expenditure which does not relate to the period in question.

Suppose final accounts are being prepared for the year ended 31 December Year 1. The rates bill covers the year from 1 April Year 1 until 31 March Year 2. If the accounts are closed without any adjustment being made, the rates account will include rates covering the period 1 January Year 2 to 31 March Year 2, which is clearly not correct.

The converse situation may also arise – for example if workers’ wages for the last week in December are not paid until the first week in January. If these wages were posted to the ledger in January then part of the cost of Year 1’s wages would be shown in Year 2’s accounts.

You can see here the essential difference between the cash book and the trading and profit and loss accounts. The cash book contains receipts and payments which, although actually received or paid, do not refer to the accounting period in which they have been settled. On the other hand, the trading and profit and loss accounts seek to collect all amounts that refer to the accounting period, **whether actually paid or received or not**. For any accounting period, therefore, there is the **cash** position and the **profit** position.

Example

Consider the following statement of receipts and payments for October.

Receipts – October	£	Payments – October	£
Cash sales	3,000	Materials	1,200
A Smith (in respect of September account)	700	Wages (£100 in respect of September)	500
		Insurance	400
		Rates	300
	3,700		2,400

In addition to these figures, you are told that there are unpaid bills for October – wages £120, materials £400. You are also informed that the £400 paid for insurance includes £170 for November and the rates cover October to March.

The cash position is easily obtained by calculating the difference between amounts received and paid, i.e. £3,700 less £2,400 = £1,300. Does this figure reflect the profit position for October also?

It does not, because certain items paid are for September or November, whilst other items for October have not been paid.

The profit position is therefore as follows:

Income – October	£	Expenditure – October	£	£
Sales	<u>3,000</u>	Wages paid	500	
		<i>less</i> September	<u>(100)</u>	
			400	
		<i>add</i> October not yet paid	<u>120</u>	520
		Materials paid	1,200	
		<i>add</i> Due but not paid	<u>400</u>	1,600
		Insurance paid	400	
		<i>less</i> November	<u>(170)</u>	230
		Rates paid	300	
		<i>less</i> November to March	<u>(250)</u>	<u>50</u>
				<u>2,400</u>

From these figures you can see that the true profit for October is £600, not the £1,300 indicated in the cash book.

We can see that the true position is given as follows:

$$\begin{aligned}
 \text{Income} &= \text{Receipts} + \text{Amounts due but not received} - \text{Amounts received but not due} \\
 &= \text{Receipts} + \text{Accruals} - \text{Prepayments} \\
 \text{Expenditure} &= \text{Payments} + \text{Amounts due but unpaid} - \text{Amounts paid but not due} \\
 &= \text{Payments} + \text{Accruals} - \text{Prepayments}
 \end{aligned}$$

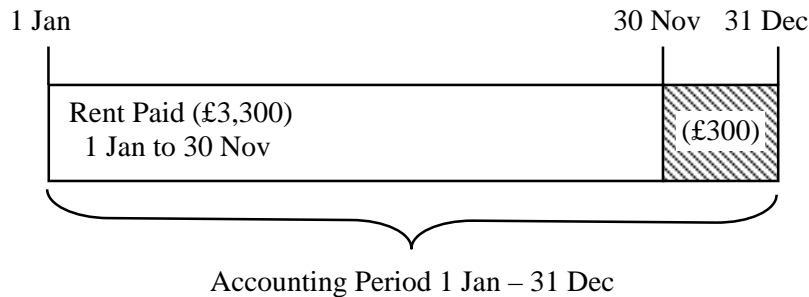
Forms of Adjustment

The two forms of adjustment that we will be considering in principle here are ***accrued*** and ***prepaid*** expenditure. However, note that the principles hold good for accrued and prepaid income.

(a) Accrued expenditure

Consider the position shown in Figure 7.1. The accounting period is 1 January to 31 December, but rent has only been paid for the period January to November.

Figure 7.1: Accrued expenditure

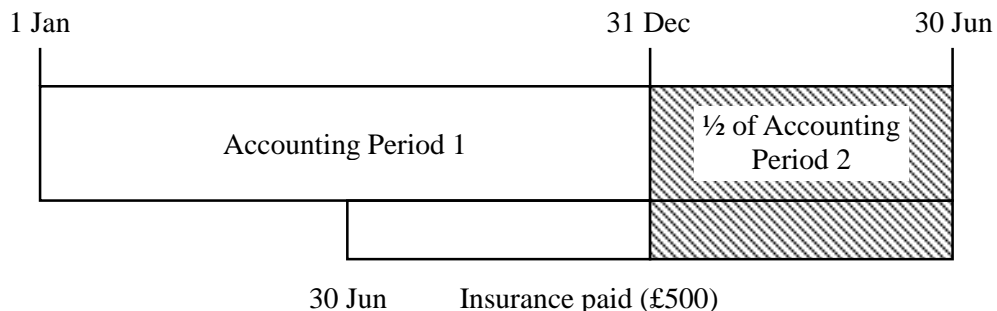


In order to complete the accounting period, it is vital that the rent due in respect of December is added to the rent paid in respect of the months of January to November inclusive.

(b) Prepaid expenditure

Now consider the position shown in Figure 7.2. Here, where the accounting period is the same, insurance has been prepaid to cover the period 1 July to 30 June in the following year.

Figure 7.2: Prepaid expenditure



In this instance the shaded section (insurance prepaid), relating to January to June of Year 2, must be deducted because it refers to a later accounting period.

From Figures 7.1 and 7.2, you can appreciate that the final accounts for the year ended 31 December concern themselves with expenditure that *exclusively relates to that period, and to no other*. We could say that you have to develop 'tunnel vision' in respect of the accounting period under review.

There can be a further form of accrual. If, for instance, goods have been despatched to a customer at the end of December but invoicing of that customer has not taken place until January, we must accrue for those sales. After all, our stock has been reduced physically as a result of the goods being despatched. If no accrual is made, we would understate our profit by the value of the goods despatched.

To correct the situation we:

Credit Sales account
Debit Goods in Transit

with the amount accrued, and then bring down the accrued amount as a debit balance at the start of the next financial period.

The double entry is thus carried out within the relevant income or expense account, rather than having a separate accruals account (as used to be the practice).

Taking the above example a stage further, a customer may complain in Year 2 that goods he purchased in Year 1 were faulty and he may claim a credit. Provided this happens before the final accounts are completed, we should take the credit note into Year 1's accounts, despite the fact that it was raised in Year 2. This is because we should not, according to the prudence concept, take a profit until it is realised.

When the goods were sold in Year 1, profit was realised. We now find, because of the return of the goods in Year 2, this profit is incorrect. To correct the situation we:

Debit Sales returns account
Credit Goods in Transit

and when the credit note is posted in Year 2 we:

Debit Sales (with the accrual)
Credit Customer's account

The sales entries would be balances carried down and brought down.

Making the Adjustments

In this type of transaction we have to deal with two aspects:

- The profit and loss account must be charged only with such amounts as *relate to the period* – not a penny more, not a penny less.
- Amounts which do not refer to the current accounting period must be *carried forward* in order that they can be charged in the correct accounting period. The items carried forward are shown in the balance sheet, as it represents the current state of the business.

(a) Prepayments

Where a proportion of, for example, rent has been paid in advance, this must be allowed for when the profit and loss account is drawn up. For instance, if the firm paid £10,000 rent for six months from

1 November, and the profit and loss account is made out for the year ended 31 December, it would obviously be wrong to debit the profit and loss account with the full amount of £10,000. Only two month's rent should be debited, i.e. £3,333.30 and the other four months' rent, i.e. £6,666.70, should be carried forward and shown in the balance sheet as an asset, "Rent paid in advance". These remarks apply equally to any other sum paid in advance, e.g. rates, insurance premiums.

Example

In illustration of this point, we have set out the rent account and profit and loss account as they would appear for the above case.

The balance of £6,666.70 being a debit balance, is naturally shown with the assets of the balance sheet. Then, in the following trading period, it will be included in the amount which will be debited to profit and loss account as rent.

Dr		Rent Account		Cr		
Year 1		£		Year 1	£	
Nov 1	Cash (six months' rent)	10,000.00		Dec 31	Profit and loss a/c (two months' rent)	3,333.30
					Balance c/d (rent paid in advance)	6,666.70
		10,000.00				10,000.00
Year 2						
Jan 1	Balance b/d (four months' rent)	6,666.70				

Profit and Loss Account for the year ended 31 December, Year 1

Dr		Cr	
	£		£
Rent	3,333.30		

Where rents are received, the above process is reversed, of course.

(b) Accruals

The converse situation is where, at the end of the trading period, there are incurred expenses which have not yet been paid. For instance, where rent is not payable in advance, a proportion of the rent for the period may be owing when the profit and loss account is drawn up. How is this to be accounted for? Obviously, the profit and loss account will be debited with rent already paid, and it must also be debited with that proportion of the rent which is *due but unpaid*. Having debited profit and loss account with this latter proportion, we must credit the rent account with it. The rent account will then show a credit balance and, as such, must appear as a liability on the balance sheet – it is a debt owed by the business. Then, when this proportion of rent owing is paid, cash will be credited and rent account debited, thus offsetting the credit balance already shown in the latter account.

Example

Rent of premises, £24,000 per year. Rent paid up to 31 October, £20,000. The profit and loss account is made out for the year ended 31 December. The entries in the ledger would appear as follows:

Dr		Rent Account		Cr		
Year 1		£		Year 1	£	
Oct 31	Cash	20,000		Dec 31	Profit and loss a/c	24,000
	Balance c/d (two months' rent due but unpaid)	4,000				
		24,000				24,000
				Year 2		
				Jan 1	Balance b/d	4,000

<i>Profit and Loss Account for the year ended 31 December, Year 1</i>			
Dr			Cr
Rent	£	24,000	£

F. ALLOCATION OR APPROPRIATION OF NET PROFIT

The net profit of a business for any period is the excess of its income (gains and profits) over its expenses and losses. It is quite easily ascertained by deducting the total of the debit items in the profit and loss account from the total of the credit items. To make the two sides of the profit and loss account agree, the amount of the net profit is then entered on the debit side.

The converse is true for a net loss. The excess of expenses and losses over income is entered on the credit side of the profit and loss account.

The question now arises – in what way is the debit to the profit and loss account for net profit (or credit for net loss) to be represented by double entry in the books of the business?

The way in which the net profit is dealt with naturally differs according to the type of ownership of the business concerned.

The three main types of ownership are sole trader, partnership and limited company, and we shall consider the question of net profit in relation to each in turn.

Sole Trader

This is the simplest case of all because the net profit, which is debited to profit and loss account, is credited to the capital account of the sole trader. The trader will, perhaps, have withdrawn certain amounts during the trading period. To do this, cash will have been credited. The total of the drawings account will then be debited to capital account at the end of the trading period.

Example

A sole trader withdraws £1,000 from his business at the ends of February, April and June. His accounts are made up for the half-year to 30 June, showing a net profit of £5,000.

Dr	1	Drawings Account		Cr
Year 1		£	Year 1	£
Feb 28	Cash CB	1,000	Jun 30	Capital account 2
Apr 30	Cash CB	1,000		3,000
Jun 30	Cash CB	1,000		
		3,000		3,000

Dr		2		Capital Account		Cr	
Year 1			£	Year 1			£
Jun 30	Drawings a/c	1	3,000	Jan 1	Cash		10,000
	Balance c/d		12,000	Jun 30	Profit & loss a/c		5,000
			15,000				15,000
				Jul 1	Balance b/d		12,000

Profit and Loss Account for the half-year ended 31 June, Year 1

Dr				Cr	
			£		£
Net profit transferred to current account	2	5,000		Net profit	5,000

Partnership

The allocation of net profit (or loss) in the case of a partnership is not quite as simple as in the case of a sole trader. The various rights of the partners are involved, and for this reason, their capital accounts should be kept intact. When the partnership commences, a document is usually drawn up setting forth the rights and duties of all the partners, the amounts of capital to be contributed by each, the manner in which the net profit or loss is to be shared among them, the provision for interest on capital if any, and the rights of partners upon a dissolution of the partnership. Such a document is known as the partnership agreement. Where no partnership agreement is in existence, the provisions of Section 24 of the **Partnership Act 1890** apply. This will be dealt with in greater detail in a later study unit.

Now, in the case of a partnership, the profit and loss account is really in two sections. The first section is drawn up in the manner already indicated in this study unit and is debited with the net profit made (or credited with the net loss). To complete the double entry, the amount of net profit is then carried down as an ordinary balance and credited to the second section of the profit and loss account. (A net loss would be carried down to the debit side of this section.) It is the second section which shows how the net profit is allocated to the various partners, and it is referred to as a profit and loss appropriation account.

In a partnership, the partners each have two accounts: the capital account (which is kept intact), and the current account. A partner's current account is debited with his or her drawings, and with a proportion of any loss which the business might sustain. The current account is also credited with the partner's share of the net profit, and with interest on his capital if this is provided for in the partnership agreement. Where a partner lends money to the business, over and above the capital provided, he or she will also have a loan account which will be credited with the amount of the loan. Any interest allowed on this loan will be debited to the first section of the profit and loss account and credited to the partner's current account. (Some authorities prefer to debit interest on loans to the second section instead of the first). Thus, the capital account and loan account (if any) of a partner will remain constant, but his or her current account will fluctuate year by year. (The loan account will, of course, alter with any repayments or additional amounts advanced by way of loan.)

The second part of the profit and loss account, in the case of a partnership, is credited with the net profit of the trading period, as stated above. To this second part is debited interest on the partners' capitals where this is provided for in the partnership agreement. Where the agreement provides for one or more of the partners to have a salary, this, too, must be debited to the second part of the profit and loss account, *not* the first part. Such salary will, of course, be credited to the current account of

the partner concerned, unless it has already been withdrawn in cash and appears as a separate Dr balance in the trial balance. Then, when these items have been debited – and only then – can the remaining profit be divided. It must be divided exactly as the partnership agreement provides. The second part of the profit and loss account will be debited with the shares of the remaining profit which are due to the partners. This will close the profit and loss account and, to complete the double entry, the current account of each partner must be credited with his share of the profit. Where a loss has been sustained, the reverse is the case.

Example

Smith, Brown and Robinson are partners who share profits in the proportion of their capitals. Their capitals are £50,000, £20,000 and £10,000 respectively. The net profit for the year before providing for this, or for the following items, is £71,000. Interest on capital is to be allowed at 5% per annum, and Robinson is to have a partnership salary of £3,000 per annum.

Show how the profit of £71,000 is allocated.

Profit and Loss Account for the year ended 31 December, Year 1
(2nd Part – Appropriation)

Dr				Cr
Robinson – salary	£	£	Net profit b/d	£
Interest on capital at 5%:				71,000
Smith	2,500			
Brown	1,000			
Robinson	500	4,000		
Share of profit:				
Smith	40,000			
Brown	16,000			
Robinson	8,000	64,000		
		71,000		71,000

Thus:	£	
Smith's current account will be credited with (£2,500 + £40,000)		42,500
Brown's current account will be credited with (£1,000 + £16,000)		17,000
Robinson's current account will be credited with (£3,000 + £500 + £8,000)		11,500
Net profit shown in the first part of the profit and loss account		£71,000

Limited Company

With a limited company, the net profit shown in the profit and loss account is carried down to the credit side of the second half of the profit and loss account, as in the case of a partnership. This second half of the profit and loss account is known as the profit and loss appropriation account, or simply appropriation account. In this account, as with a partnership, the net profit of the business is allocated. Sometimes the appropriation account is drawn up as a separate account.

A limited company distributes its profits by means of dividends on the shares of its capital held by the shareholders. Thus, where a company declares a dividend of 10 per cent on its ordinary share capital of £10,000 (dividend in £1 shares), the holder of each £1 share will receive 10p, i.e.

10 per cent of £1. Such a dividend would be debited to the appropriation account, together with all dividends paid on the other classes of shares. Corporation tax on profits is also debited to the appropriation account, this being the share of the company's profit which is claimed by the Inland Revenue.

Directors' fees should be debited to the profit and loss account proper. Where, however, these fees vary according to the amount of net profit paid and have to be passed by the company in general meeting, they should be kept in suspense until such meeting has taken place. Then, of course, they should be debited to the appropriation account, because they are a proportion of the profits due to the directors.

When these various items have been debited to the appropriation account, the whole of the profit may not have been used. The balance remaining is carried forward to the appropriation account of the next trading period, when it will appear on the credit side under the amount of the net profit brought down from the profit and loss account.

When a company makes a very large profit, the directors will often deem it prudent to place a proportion of such profit on one side, instead of distributing it among the shareholders. An account is opened to which such sums will be credited, the appropriation account being debited. This account is known as a *reserve account*. The reserve account, therefore, contains appropriation from net profits, accumulating year by year. The Articles usually give the directors power to make such reserves as they choose, before recommending dividends.

Practice Questions

1. From the following balances appearing in the ledger of the New Manufacturing Co. on 31 December, draw up the profit and loss account for the year ended 31 December.

	£	£
Discounts allowed	32	
Discounts received		267
Gross profit (brought down from trading account)		83,497
Salaries	44,261	
Bank charges	193	
Sundry office expenses	1,361	
Rent and rates	19,421	
Bad debts written off	937	
Carriage outwards	5,971	
Plant and machinery	50,000	

Notes:

- (a) Write off 10 per cent depreciation on plant and machinery.
- (b) Rent owing on 31 December amounted to £2,000.
- (c) An insurance premium amounting to £500 was paid on 1 July in the current year for the year to 30 June of the following year. The £500 is included in sundry office expenses.

2. A, B and C are in partnership, their respective capitals being £20,000, £15,000 and £10,000 and they share profits in the proportions of half, quarter and quarter.

The net profit shown in the profit and loss account, before providing for the following particulars, is £48,000 for the half-year ended 30 June. B is entitled to a salary of £3,200 per annum and the capital accounts bear interest at the rate of 4 per cent per annum. Show how the net profit of £48,000 is distributed among the partners.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

1.

New Manufacturing Company
Profit and Loss Account for year ended 31 December

	£	£	£
Gross profit		83,497	
Discounts received		267	83,764
Expenses			
Rent and rates	21,421		
Salaries	44,261		
Sundries	1,111		
Discounts allowed	32		
Bad debts	937		
Carriage outwards	5,971		
Bank charges	193		
Depreciation on plant and machinery:			
10% of £50,000	5,000		78,926
Net profit			162,690

Notes

- (a) Rent and rates have been increased by £2,000, this being the amount owing at the year end.
- (b) Sundry office expenses have been reduced by £250, this being the prepayment of the insurance premium; or it can be considered as the unexpired portion of the premium.
2. The trading period of the partnership is only six months – interest on capital, and B’s salary, are therefore calculated for six months only. (You should be on the look-out for “traps” of this type.)
- The appropriation account is set out on the next page.

Profit and Loss Appropriation

	£	£	£
Net profit b/d			48,000
B – salary		1,600	
Interest on capitals:			
A	400		
B	300		
C	<u>200</u>	900	
Profit:			
A (1/2)	22,750		
B (1/4)	11,375		
C (1/4)	<u>11,375</u>	<u>45,500</u>	48,000

Study Unit 8

Final Accounts 3: The Balance Sheet

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A. ESSENTIALS OF A BALANCE SHEET

At the end of the trading period it is customary to extract a trial balance. From the trial balance are compiled the trading account, profit and loss account and the appropriation account (if any). In preparing these (usually known as the “*final accounts*”), many accounts in the ledger are closed – for example, sales account is closed by being transferred to the credit side of the trading account. When the final accounts have been prepared, there will still be a number of ledger accounts which remain open. These “open” account balances are “extracted” as a kind of final trial balance, set out in full detail, and this final trial balance is known as the balance sheet. Let us now consider what details should appear in a balance sheet.

A balance sheet is a statement showing the assets owned and the liabilities owed by the business on a certain date. It can be ruled in account form, but it is *not* an account. For that reason, you must *not* head it “Dr” and “Cr”. However, the expression “final accounts” includes the balance sheet even though it is not an account at all.

Because it is a statement as at a particular date, it is headed:

Name of Firm
Balance Sheet as at (or as on, or at) date

and never “for the year (or other period) ended”.

Remember that this latter type of heading is used for trading and profit and loss accounts which cover a period of time.

The balance sheet may be presented with the assets on the left-hand side and the liabilities on the right-hand side – similar to a normal account – and this therefore means that debit balances are on the left and credit balances on the right. Remember, though, that a balance sheet does not have a debit side and a credit side. An alternative presentation is to show the assets (net) first, with a total, and then the capital of the business, with its own total, in a vertical format. In this course we shall show balance sheets of sole traders and partnerships in the horizontal format, and of limited companies in the vertical format, so that you become familiar with both ways of presenting a balance sheet.

Note the following differences between the balance sheet and the trial balance and ledger accounts:

- A trial balance is a list of *all* the ledger balances, not only assets and liabilities, but also gains and losses. A balance sheet is a list of a *part* only of the ledger balances, i.e. those remaining after the profit and loss items have been dealt with, the assets and liabilities.
- A trial balance is prepared *before* the revenue accounts are compiled. A balance sheet is prepared *after* the revenue accounts have been dealt with.
- In the profit and loss account you will remember that you actually transfer the gains and losses appearing in accounts in the books, by means of journal entries. Because the balance sheet is a statement and not an account, the accounts for assets and liabilities in the books are not affected when you draw up the balance sheet. You do not “transfer” them to the balance sheet.

Functions of the Balance Sheet

We can identify a number of purposes served by the balance sheet.

(a) **Financial position of business**

It is very useful, now and then, to reckon up what we possess in the form of furniture, books, cash and amounts owing to us by other people, and to contrast this total with what we owe. If, as should be the case, we possess more than we owe, then we are solvent, and the difference between the two totals represents our worth or capital. If we have spent more than our income we are then insolvent, the difference this time being a deficit.

The same principle is applied to business. The balance sheet is drawn up in order to give a picture of the financial position of the business. It reveals whether the business is solvent or insolvent. It shows how much is invested in different forms of property, and it provides an incentive to the proprietor to ensure that the assets shown by the books are actually in the firm's possession.

(b) Arithmetical accuracy of account

The agreement of the balance sheet also provides a check on the accuracy of the revenue accounts in much the same way as the agreement of a trial balance provides prima facie evidence of the arithmetical accuracy of the books.

(c) Bridge between financial years

The balance sheet is also a "bridge" between one financial year and the next. All accounts which remain open after the manufacturing, trading and profit and loss accounts have been prepared, are summarised in the balance sheet. For example, suppose that an office is rented from 1 March, and six months' rent of £6,000 is paid in advance. The rent account would appear as follows at the end of the year:

Dr		Rent Account		Cr
Year 1		£	Year 1	£
Mar 1	Cash	6,000	Dec 31	Profit and Loss a/c (10 months' rent)
Sept 1	Cash	6,000		10,000

The balancing figure of £2,000 must be added to the credit side to close the account, and the same figure is "carried down" to the opposite side of the account to re-open the account for the following year. This balancing figure is included in the balance sheet, so, in effect, the balance sheet is equivalent to a statement of the opening balances for the following year. No account can be carried down from one year to the next without being included in the balance sheet.

The rent account will appear as follows. Note that no mention of the balance sheet is made, and no journal entry is necessary.

Dr		Rent Account		Cr
Year 1		£	Year 1	£
Mar 1	Cash	6,000	Dec 31	Profit and Loss a/c
Sept 1	Cash	6,000		Balance c/d
		12,000		2,000
Year 2				12,000
Jan 1	Balance b/d	2,000		

(d) Summarised statements

If we listed each asset, each piece of machinery, each book debt, etc. separately, the balance sheet would be extremely long and almost unintelligible. Assets, and liabilities also, are summarised or grouped, therefore, into their main classes, and only the total of each type is shown on the balance sheet. Thus, if our debtors are Jones, who owes us £10, and Smith, who owes us £15, we show under current assets:

Sundry debtors £25

Summarisation entails giving as much information in as little space as possible. Style and layout are most important. As an example of what is intended, assume that office furniture was worth £2,000 at the beginning of the year and has since depreciated by £100. The balance sheet will show:

Balance Sheet as at 31 December Year 1

	£	£
Office furniture		
Balance 1 January	2,000	
less Depreciation for year at 5% pa	100	1,900

B. ASSETS

Assets are debit balances, and may be divided into fixed and current assets.

Fixed and Current Assets

We should start by defining these:

- **Fixed assets**

These are assets which are retained in a business, more or less permanently, for the purpose of earning revenue only and not at all for the purposes of sale. Examples are: plant, machinery, land, buildings, etc. Some fixed assets are consumed by the passing of time, e.g. leases, mines, etc.

- **Current Assets**

Cash and those other assets which have been made or purchased merely to be sold and converted into cash are known as current assets. It is from the turnover of current assets that a business makes its trading profit. Examples are: stock in trade, sundry debtors, cash, temporary investments. All such assets are held for a short period only, e.g. stock when sold creates debtors, these debtors pay their debts in cash, by means of which more stock can be acquired. So the circle moves round and current assets are kept constantly moving.

Now that you know the meaning of the various terms by which assets are described, we can discuss the distinction between them. First of all, it is most important that you should know that the determination of whether an asset is “fixed” or “current” depends entirely upon the kind of business which holds the asset. What is a fixed asset in one firm may be a current asset in another. For example, machinery is a fixed asset when held by a firm which manufactures cigarettes, but, in the hands of a firm which sells machinery, it will be a current asset. A motor van will be a fixed asset for a tradesman who uses it for delivery, but, to a manufacturer of such vans, it will be a current asset, i.e. stock.

The rule to be applied is this: is the asset concerned held merely until a purchaser can be found, or is it held permanently for use in the business? If the former case obtains, the asset is a current asset; but, if the latter case obtains then the asset is a fixed one.

However, you must remember that even if an asset is not easily realisable, it may still be a current asset, e.g. a debt due from a foreign importer may be hard to realise, owing to exchange restrictions, but it still remains a current asset.

Note that the word “fixed” in this connection means something quite different from its dictionary definition. A fixed asset is not necessarily immovable.

Valuation of Assets

The distinction between fixed and current assets is of the utmost importance, for a variety of reasons. First of all, the basis of valuation (for balance sheet purposes) in the case of fixed assets is entirely different from that of current assets.

(a) Fixed assets

Generally speaking, fixed assets represent money which has been spent in the past on items, e.g. buildings, plant, machinery, which were intended to be used to earn revenue for the firm. In many cases, these fixed assets depreciate over a period of years and may finally have to be “scrapped”. Therefore, the money spent originally on a fixed asset should be spread over the number of years of the estimated “life” of the asset. An item representing depreciation will be debited to the profit and loss account annually, and the provision account will be credited. Because we deduct the depreciation from the cost of the asset, the fixed asset is shown as a diminishing figure in the balance sheet each year unless, of course, there have been additions to the asset during the year. The decrease in the value (to the business) of the fixed asset is also thus shown as an expense in the annual profit and loss account.

An illustration will help us to explain the principle. Assume that a company makes a net profit every year of £6,000, and that at the end of every year it has £7,000 cash in the bank! Suppose that one year it buys some machinery for £4,000. This expenditure does not appear in the profit and loss account, so the net profit remains £6,000 per year. In the balance sheet the machinery will be shown at a cost of £4,000, and there will now be only £3,000 of cash in the bank, but total assets will remain unchanged. So far so good, but if nothing is done about depreciation we will find that after, say, five years, the machinery will be worthless but it will still be valued in the balance sheet at £4,000. To avoid this state of affairs, £800 is transferred from the profit and loss account each year to a provision for depreciation account, and it is deducted from the cost price of the asset. So in the balance sheet, the value of the asset is reduced by £800 each year until nothing is left, and at the same time the net profit for the five years is £800 less. In other words, the expenditure of £4,000 is being spread over a period of five years, which is clearly just, since the machinery is earning profit during these five years.

You must remember that not all fixed assets are consumed by the passing of time. Some, in fact, may “appreciate”, e.g. freehold land and buildings.

With the rising value of such assets, it is now considered quite correct to revalue them. Thus, the balance sheet would show the correct market value. If an increased valuation is to be made, then great care must be taken to ensure that the asset is not overvalued, and so expert advice should be sought.

(b) Current assets

Now that we have considered the valuation of fixed assets, we turn to the valuation (again for balance sheet purposes) of current assets. As we have already pointed out, current assets are normally held for a relatively short period, i.e. until they can be realised. For this reason, current assets cannot be valued on the same basis as fixed assets. As fixed assets are held for the purpose of profit-earning, the best method of valuation is cost, less an appropriate provision for depreciation. Current assets, however, should generally be valued at **cost or market price**, whichever is the lower. This course is necessary to ensure that no account is taken of profit in the valuation until the current assets have been realised. We have already discussed the reasons for this in an earlier study unit.

Tangible and Intangible Assets

Assets which can be possessed in a physical sense, e.g. plant, machinery, land and buildings, etc. are **tangible** assets. Also included in the category of tangible assets are legal rights against third parties.

On the other hand, assets which cannot be possessed in a physical sense, and which are not legal rights against external persons, are intangible. Goodwill is perhaps the best example of an intangible

asset. It complies with the definition, and is often a very valuable asset in the case of an old-established business.

The distinction between tangible and intangible assets is not of as much importance as the distinction between fixed and current assets. In fact, the distinction is really of little practical use. Indeed, you should beware of using the terms when writing of the assets of a concern, as they are often misleading. For instance, when you examine the definitions which we have given at the beginning of the study unit, you will notice that book debts, i.e. sundry debtors, being legal rights against third parties, must be classed as “tangible” assets. You will know from experience, however, that some of these debtors may be worthless, and it appears to be misleading to describe such debts as “tangible”. On the other hand, goodwill is an intangible asset, although such an asset is often sold for a very large sum. For these reasons, be very guarded in your use of these two terms.

Order of Assets in the Balance Sheet

The assets in the balance sheet must be arranged in a clear and logical order. The order usually adopted is:

- Fixed assets
- Current assets.

In each “group” assets are arranged in an order “*from most fixed to most fluid*”, thus:

Fixed Assets	Current Assets
Goodwill	Stock in trade
Patents, trade marks, etc.	Work in progress
Freehold land and buildings	Sundry debtors
Leasehold land and buildings	Bills receivable
Plant and machinery	Payments in advance
Loose tools	Temporary investments
Motor and other vehicles	Bank deposit account
Furniture and fittings	Cash at bank
Permanent investments	Cash in hand

A sub-total for each group is extended into the end column of the balance sheet. The examples which follow later make this clear.

C. LIABILITIES

Liabilities to Proprietors

First of all you need to know what is meant by the liability of a firm or company to the proprietors. This, in the case of a sole trader, is the capital account, i.e. the amount by which the business is indebted to the owner.

With the case of a partnership, the liabilities to the proprietors are to be found in the capital accounts and current accounts of the various partners. (The current accounts are only liabilities when they are credit balances. When they are debit balances, they appear in the asset section of the balance sheet, since debit balances represent debts due **from** partners.) The balances of these accounts represent the indebtedness of the business to the various partners.

With a limited company, this indebtedness is the amount of the share capital paid up. There are often two or more classes of shares in a company, each possessing different rights, as we shall see in a later study unit.

In each of the three cases mentioned, the indebtedness of the business to the proprietors, i.e. the sole trader, the partners or the shareholders, as the case may be, cannot, strictly speaking, be classed as a liability. The proprietors of a firm can withdraw their capital in bulk only when the firm is wound up, and even then they must wait until the outside creditors have been satisfied. When the outside creditors have been paid out of the proceeds of the sale of the assets, it may be that there is very little left for the proprietors to take.

In some cases, in fact, the proceeds of sale of the assets are insufficient to pay off the external creditors. The proprietors must then furnish more funds until the creditors are satisfied, as follows:

- A sole trader must contribute funds to pay off remaining outside creditors, even if this takes the whole of his private property and investments.
- In a partnership, the partners, too, must make good a deficiency on winding up. They, too, must contribute their private means until all the external creditors are paid, even if this takes the whole of their private means.
- With a limited liability company, the case is different from either a sole trader or a partnership, since the liability of each proprietor, i.e. shareholder, is restricted to the amount he or she originally agreed to contribute. For example, a shareholder has 100 shares of £1 each in a company, and has paid 75p on each share. The shareholder can be called upon to pay only a further sum of 25p per share (total £25), if the assets of the company do not realise sufficient to satisfy the external creditors. In most companies all the shares are fully paid, so the shareholders are not liable for anything further.

The main point to remember in each of these three cases, is that **external creditors always take preference over proprietors**. If you study the above three cases carefully you will realise that the indebtedness of a business to the proprietors can hardly be described as a real liability. However, this term must be used for want of a better one, but you must always remember the special circumstances. In some limited companies we find two classes of shares – preference and ordinary shares. These terms do not mean that preference shareholders come before external creditors: it merely means that they have certain rights over the ordinary shareholders.

External Liabilities

Now that you know what is meant by “liabilities to proprietors”, we can pass on to external liabilities. The external liabilities of any firm are those liabilities which cannot be described as indebtedness to proprietors in the way of capital accounts, current accounts (sole trader and partnership), or paid-up (limited company). It is possible, however, for a person to be an external creditor and, at the same time, a proprietor. This occurs when a shareholder of a company becomes an ordinary trade creditor of the company in the normal course of business. It is essential that you should be able to distinguish between proprietors of a business and external creditors.

We can classify external liabilities in various ways:

(a) Long-term or current liabilities

- ***Long-term liabilities***

Long-term liabilities are those which would not normally be repaid within 12 months.

- ***Current liabilities (short-term liabilities)***

Current liabilities consist of current trading debts due for payment in the near future. It is essential that long-term and current liabilities should be stated separately in the balance sheet, so that it is possible for shareholders and third parties to judge whether the current

assets are sufficient to meet the current liabilities and also provide sufficient working capital. Current liabilities also include accrued expenses.

(b) Secured and unsecured liabilities

● ***Secured liabilities***

Liabilities for which a charge has been given over certain or all of the assets of the firm are said to be “secured”. In such cases, the creditor, in default of payment, can exercise rights against the assets charged, to obtain a remedy. (An asset is “charged” when the creditor gives a loan on condition that he or she acquires the ownership of the asset if the loan is not repaid by the agreed date. The asset is security for the loan.) This is similar to a mortgage on a private house.

The charge may be either “fixed” or “floating”. A fixed charge is one which relates only to one particular asset, such as a building. On the other hand, a floating charge can be exercised over the whole of the class of assets mentioned in the charge, present or future. Debentures are often secured by a floating charge on the whole of the assets of the company which issued the debentures.

The floating charge does not “crystallise” until the charge is enforced, i.e. the creditor goes to court to obtain payment of his debt. When this occurs, the firm which granted the charge may not deal in any way with any of the assets included in the charge.

A floating charge is convenient to both borrower and lender. The borrower is allowed to deal as he chooses, in the ordinary course of business, with the assets covered by the charge, without having to obtain the permission of the lender. Also the lender is satisfied because he knows that his loan is well secured. With a fixed charge, however, the borrower could not sell the asset charged without the permission of the lender.

● ***Unsecured liabilities***

As the name implies, such liabilities are not secured in any way by a charge over any of the assets of a firm.

In the event of the winding-up of a concern, the secured creditors are satisfied out of the proceeds of the asset or assets over which they have a charge. Any surplus, together with the proceeds of uncharged assets, are reserved to satisfy, first the preferential liabilities (described below) and then the unsecured liabilities. When all these liabilities have been met, the final surplus, if any, is shared by the proprietors in the manner provided in the Articles of Association (in a limited company), or in the partnership agreement (in the case of a partnership).

(c) Preferential Liabilities

On the bankruptcy of a sole trader or partnership, or on the winding-up of a company, certain liabilities enjoy preference over other liabilities. These debts are known as preferential liabilities. Examples are unpaid wages and taxation.

Preferential liabilities do not concern us in the preparation of a balance sheet of a continuing business.

(d) Contingent liabilities

Liabilities which might arise in the future, but which are not represented in the books of the firm concerned, at the date of drawing up the balance sheet are said to be “*contingent*”.

Obviously, such a liability cannot be shown in the balance sheet proper as it is not represented by a credit balance in the ledger of the firm. As it is necessary to disclose contingent liabilities to the proprietors of the firm, a note should be made at the foot of the balance sheet, giving particulars of these transactions.

An example of a contingent liability is where the firm concerned is involved in a law action at the date of the balance sheet. If there is a possibility that damages and/or costs will be awarded against the firm, a note to this effect should be added as a footnote to the balance sheet.

Order of Liabilities

The order of the liabilities is less important than that of the assets. However, we strongly recommend the following order for a sole trader or partnership:

Capital account(s) liabilities to proprietors

Current account(s)

Long-term liabilities:

(i) Secured

(ii) Unsecured

Current liabilities.

The balance sheet of a limited company is set out in considerable detail, and the matters that must be shown are laid down by law. We are not concerned here with limited companies, as they will be dealt within a later study unit.

D. DISTINCTION BETWEEN CAPITAL AND REVENUE

One of the fundamental principles of correct accounting is the proper distinction between capital and revenue, both for expenditure and income.

The importance lies in the fact that revenue expenditure constitutes a charge against profits and must be debited to profit and loss account; whereas capital expenditure comprises all expenditure incurred in the purchase of fixed assets for the purpose of earning income and is shown in the balance sheet. Failure to observe the distinction inevitably falsifies the results of the book-keeping. For example, if a motor car were purchased and the cost charged to profit and loss account as motor car expenses, or if a building were sold and the proceeds credited to profit and loss account as a gain, then both the profit and loss account and the balance sheet would be incorrect.

Every time that you go through the trial balance in order to decide which items go in the profit and loss account and which go in the balance sheet, you are distinguishing between capital and revenue.

Definitions

We need to be absolutely clear about these at the outset.

- **Capital Expenditure**

Where expenditure is incurred in acquiring, or increasing the value of, a permanent asset which is frequently or continuously used to earn revenue, it is capital expenditure.

- **Revenue Expenditure**

This represents all other expenditure incurred in running a business, including the expenditure necessary for the maintenance of the earning capacity of the business and for the upkeep of fixed assets in a fully efficient state.

It is, though, extremely difficult to lay down a hard and fast rule as to the dividing line which separates capital expenditure and revenue expenditure, as every case must be treated on its own merits. For example, if a general dealer bought a motor car, the cost would be debited to capital, whereas if a motor dealer bought the car, the cost would be debited to revenue.

Capital Expenditure

In most businesses, capital expenditure can be divided into the following groups:

- **Land and buildings**
This group includes all lands, roads, fences, railway tracks, mines and quarries, and buildings. Legal expenses in acquiring or selling land and buildings, and survey expenses in connection with the acquisition of land, are also counted as capital expenditure. The initial outlay and the costs of developing property to an income-earning stage are treated as capital in the case of mines and quarries.
- **Service plant**
This includes all plant for the provision of fuel and power, heating and cooling, and ventilation.
- **Manufacturing plant and machinery**
This includes all plant and machinery other than the above. These are the fixed assets which produce the goods.
- **Fixtures and fittings**
These include desks, chairs, benches, machine-guards, racks, shelves, cabinets and partitioning.
- **Transport**
This includes lorries, vans, trucks, cranes, hoists, staking machines and trolleys, provided that they are purchased for use in the business.
- **Intangible assets**
These include expenditure on the purchase of patent rights and goodwill.

Revenue Expenditure

Revenue expenditure is normally written-off to profit and loss account in the period in which it is incurred. Examples of revenue expenditure are wages, salaries, rent, selling expenses, repairs to buildings, repairs to plant and machinery, renewal fees on patents, the purchase of goods for resale, the purchase of raw materials, and overhead expenses in administering the business.

There are some types of expenditure which, although incurred during one accounting period, will nevertheless enable the concern to reap benefits in future years. Such expenditure is known as ***deferred revenue expenditure***, and can be treated quite legitimately as an asset until it is completely written off.

An example of deferred revenue expenditure occurs in the case of a company which spends a large sum of money advertising a new brand of product. After the brand has become popularised, the advertising can be reduced considerably, but the sales will still go on. It is not strictly correct to write off the whole of this initial advertising expenditure in the year in which it is incurred, as the benefit from the advertising is not confined to the first year but is felt for several years afterwards. This expenditure is therefore written off over a number of years, and the balance remaining at the end of each year is included in the balance sheet as a current asset.

Deferred revenue expenditure should not be confused with payments in advance, e.g. when rent or advertising is paid for before the period to which it really relates. These payments in advance are carried forward to the following period, and must, therefore, be included in the balance sheet as a current asset, but there is no question whatever of writing them off over a number of years as is the case with deferred revenue expenditure.

Capital and Revenue Receipts

The division of receipts into capital and revenue items is not nearly as difficult, as the sources of receipts are generally far less in number than the types of expenditure.

- **Capital receipts**

These normally consist of additional payments of capital into the business, and the proceeds from the sale of fixed assets.

- **Revenue receipts**

These comprise all other forms of income, including income from the sale of goods in the ordinary course of trading, interest on investments, rents, commission and discounts.

Capital and Revenue Reserves

A reserve fund arises where an amount is transferred from the profit and loss appropriation account, by reducing the amount of profit available for dividend distribution (i.e. by debiting the account) and transferring it to a named reserve fund (i.e. by crediting the account). Reserve funds are created for different purposes. Some reserves are not legally allowed to be used for the distribution of a dividend, but others could be used in future years to provide a dividend if required. A company needs to retain funds within the business to provide for working capital and to ensure future expansion if possible. It is not usual, therefore, for all profit made in any one year to be distributed to shareholders by way of dividends.

After the profit has been appropriated by contributions to reserve funds and payment of dividends to shareholders, there could still be a credit balance left to be carried forward to the next year. This could arise either because:

- it is inconvenient to pay dividends in fractions of percentages, or
- a sum of money has been deliberately held back on prudent grounds.

As such this balance would be treated or construed as a general reserve.

Capital reserve funds

A capital reserve is usually used for financing the purchase of capital expenditure and is not generally available for making contributions to the profit and loss appropriation account to increase a dividend payout to shareholders.

Revenue reserve funds

A revenue reserve is where an amount has been transferred from the profit and loss appropriation account by debiting it, and crediting a named reserve account. The reserve may be for some particular purpose, such as the repair and maintenance of assets, e.g. planned maintenance on buildings, or it could be a general reserve. The named reserve fund can only be used for the purpose for which it is intended, whereas the general reserve fund can be used for any purpose, e.g. to provide additional capital for the business, pay of dividends to share holders, finance an advertising campaign etc.

E. PREPARATION OF A BALANCE SHEET

Let's now see how balance sheets are prepared for businesses owned by sole traders. We will consider partnership and company balance sheets later.

Sole Trader

A typical balance sheet of A Brown at 31 December is shown to illustrate the way a balance sheet is laid out:

A Brown
Balance Sheet as at 31 December

	£	£	£
Fixed Assets	<i>Cost</i>	<i>Depreciation</i>	<i>Net</i>
Freehold premises	25,000	–	25,000
Delivery vans	12,500	2,000	10,500
Office furniture	4,800	800	4,000
	42,300	2,800	39,500
Current Assets			
Stock		39,500	
Debtors	23,900		
<i>less</i> Provision for bad debts	2,000	21,900	
		16,500	
Cash at bank		700	
Cash in hand		200	
Prepayments		78,800	
<i>less</i> Current Liabilities			
Creditors	24,900		
Accruals	1,100	26,000	
		52,800	
Working capital			92,300
Long-Term Liabilities			
Bank loan (repayable over 10 years)			10,000
			82,300
Financed by:			
Opening capital			80,000
<i>add</i> Net profit			13,300
			93,300
<i>less</i> Drawings			11,000
			82,300

Note the following points in respect of this layout:

- (a) Remember we are preparing a statement of **all** the balances left open on ledger accounts at a particular point in time – in this case at 31 December.

- (b) Fixed assets must be shown as separate categories, e.g. premises, office furniture. They are shown at cost less the *accumulated* depreciation since they were purchased. The “Net” column reflects this value. Note that *only* the total of the net column is added into the balance sheet. The other columns are totalled and ruled off.
- (c) It is usual to list the current assets in the order shown, starting with the *least* liquid assets and moving down to the more liquid assets. Try to follow this order in your own presentation.
- (d) One section of the balance sheet shows:
- $$\text{Fixed assets} + \text{Current assets} - \text{Current liabilities} - \text{Long-term liabilities}$$
- The other section of the balance sheet shows the owner’s capital. This is shown here as “Financed by”, but you will also see it identified as “Capital Account”.
- (e) It is normal practice to show in the balance sheet how the closing capital balance has been calculated, by adding the net profit to the opening capital and then deducting the drawings during the period. This practice has been adopted to give more information to users of balance sheets.
- (f) Both sections of the balance sheet should have the same total. This is referred to as “balancing the balance sheet”. The use of the double-entry book-keeping system gives this result.
- (g) The above vertical layout is commonly used nowadays rather than the horizontal form we used earlier when looking at the accounting equation.

To complete this section, we show on the next page the above balance sheet in horizontal form so that you are aware of the differences between the two layouts. In some ways, this form of layout shows the assets and liabilities more clearly, as well as the balance between the two.

A Brown
Balance Sheet as at 31 December

Fixed Assets	Cost	Dep'n	Net	Capital Account	£
	£	£	£		£
Freehold warehouse	25,000		25,000	Balance brought forward	80,000
Delivery vans	12,500	2,000	10,500	Add net profit for the year	<u>13,300</u>
Office furniture	<u>4,800</u>	<u>800</u>	<u>4,000</u>		93,300
	<u>42,300</u>	<u>2,800</u>	39,500	Less Drawings	<u>11,000</u>
				Current Liabilities	<u>82,300</u>
Current Assets					
Stock		39,500		Sundry creditors	23,100
Sundry debtors	23,900			Bills payable	11,800
Less provision for bad debts	<u>2,000</u>	21,900		Wages accrued	700
Insurance prepaid		200		Salaries accrued	<u>36,000</u>
Cash at bank		16,500			
Cash in hand		<u>700</u>	<u>78,800</u>		
					<u>£118,300</u>
					<u>£118,300</u>

Partnership

The main point of difference between the balance sheet of a sole trader and of a partnership lies in the capital and current accounts. While the sole trader may merge profits and losses, drawings, etc. into the capital account, this would be most inadvisable in the case of a partnership. In fact, most partnership agreements stipulate that capitals shall be fixed at certain amounts. Current accounts are, then, obviously necessary to record shares of profits and losses, interest on capitals, salaries, drawings, etc. and the final balances only need to be shown in the balance sheet. The details are, of course, contained in the ledger accounts.

The order of assets and liabilities is generally as shown in the balance sheet above for the sole trader. Current accounts always appear below capital accounts.

Here is a summarised version of the proprietor's interest section of the balance sheet of a partnership:

Robinson, Jones and Brown
Balance Sheet as at 31 October...

	Robinson £	Jones £	Brown £	Total £
Proprietor's interest				
Capital accounts	7,500	5,500	2,500	15,500
Current accounts	2,475	1,965	1,180	5,620
	9,975	7,465	3,680	21,120

(Partnership accounts will be dealt with in detail in a later study unit.)

Note that there are no practice questions for this unit. You will, however, get plenty of practice in preparing balance sheets in the next unit!

Study Unit 9

Final Accounts 4: Preparation

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A. PREPARATION FROM GIVEN TRIAL BALANCE

To date, we have studied the theory and practice of double entry book-keeping, including all records up to the extraction of a trial balance. In addition, we have looked at the preparation of trading and profit and loss accounts, together with the balance sheet. Now we shall get more practical by looking at how the final accounts are prepared from a given trial balance, taking into consideration accruals, prepayments, etc. The examples set out will concern sole traders and partnerships (in simple form). The final accounts of limited companies are drawn up on exactly the same principle, but in view of the fact that certain information must be included (by virtue of the Companies Acts), we shall not give you any practical examples of such accounts until later in the course.

Study the following examples carefully, paying particular attention to the explanatory notes.

Example 1: Sole Trader

The following trial balance has been extracted from the books of John Bell, a sole trader, as on 31 December. From this, you are required to draw up the trading and profit and loss accounts for the year ended 31 December, together with a balance sheet as on that date.

	£	£
Capital 1 January		80,000
Drawings	11,000	
Sales and returns	2,400	158,500
Purchases and returns	84,600	1,100
Wages	29,600	
Salaries	14,300	
Bad debts	2,900	
Provision for bad debts 1 January		1,500
Sundry debtors	23,900	
Sundry creditors		23,100
Discounts	2,200	1,400
Bills payable		11,800
Freehold warehouse	25,000	
Delivery vans	12,500	
Carriage inwards	3,100	
Carriage outwards	4,600	
Stock 1 January	31,000	
Office furniture	4,800	
General office expenses	3,900	
Rates and insurance	4,400	
Cash in hand	700	
Cash at bank	16,500	
	277,400	277,400

In drawing up these accounts and the balance sheet, allowance must be made for the following items:

- (a) Stock at 31 December is valued at £39,500.
- (b) Allow for depreciation as follows: delivery vans, £2,000; office furniture, £800.
- (c) Increase the provision for bad debts to £2,000.
- (d) Expenditure accrued but not paid at 31 December: wages, £700; salaries, £400.
- (e) Expenditure prepaid at 31 December: insurance, £200.

Explanatory Note

In preparing your final accounts, remember that each item in the trial balance will appear once only, i.e. in the trading account, or in the profit and loss account, or in the balance sheet. In addition, it must also be borne in mind that each of the “adjustments” (a) to (e) must appear *twice* in the final accounts, e.g. stock at 31 December appears in the trading account and also in the balance sheet. In order that nothing shall be overlooked, our first step is to mark (with, say, a cross) each item in the trial balance which is affected by an adjustment. These are as follows: delivery vans, office furniture, provision for bad debts, wages, salaries, rates and insurance.

In drawing up the final accounts, as each item is entered it should be “ticked” on the trial balance, and similarly with the adjustments. The balance sheet will therefore not be ready for balancing unless and until every item in the trial balance is ticked once and every footnote ticked twice.

It is often good practice – particularly where you are working under a time pressure – to insert gross and net profits in pencil only and not to rule off the final accounts until the balance sheet agrees. When it does agree, ink in your profit figures and erase your pencil marks.

Taking the trading account first, certain items are a “must”, e.g. sales, purchases, stock etc. Having inserted these, go through your trial balance again, with care, and select all other items for the trading account before proceeding to the profit and loss account. In preparing the profit and loss account, remember that the first entry is gross profit (or loss) transferred from the trading account. Also, be prepared to go through your trial balance at least twice before passing from the profit and loss account to the balance sheet.

One very important item must not be omitted from the balance sheet – and that is the net profit (or loss) as disclosed by the profit and loss account. If you ignore this, your balance sheet will differ.

Having given you all this advice, we can now proceed to draw up the final accounts. Try preparing them yourself first, if you feel confident, and then compare your own attempt with the following solution:

John Bell
Trading and Profit and Loss Account for the Year Ended 31 December ...

	£	£	£
Sales		158,500	
<i>less</i> Returns		<u>2,400</u>	156,100
Cost of goods sold:			
Stock 1 January		31,000	
Purchases	84,600		
<i>less</i> Returns	<u>1,100</u>	83,500	
Carriage inwards		<u>3,100</u>	
		117,600	
<i>Less</i> Closing stock, 31 December		<u>39,500</u>	<u>78,100</u>
Gross profit			78,000
Discounts received			<u>1,400</u>
			79,400
Expenses			
Wages		30,300	
Rates and insurance		4,200	
Salaries		14,700	
General office expenses		3,900	
Bad debts		2,900	
Bad debt provision		500	
Discounts allowed		2,200	
Carriage outwards		4,600	
Depreciation:			
Delivery vans	2,000		
Office furniture	<u>800</u>	<u>2,800</u>	<u>66,100</u>
Net profit			13,300

John Bell
Balance Sheet as at 31 December

	£	£	£
Fixed Assets	<i>Cost</i>	<i>Depreciation</i>	<i>Net</i>
Freehold premises	25,000	–	25,000
Delivery vans	12,500	2,000	10,500
Office furniture	4,800	800	4,000
	42,300	2,800	39,500
Current Assets			
Stock		39,500	
Sundry debtors	23,900		
<i>less</i> Provision for bad debts	2,000	21,900	
		200	
Insurance prepaid		16,500	
Cash at bank		700	
Cash in hand		78,800	
<i>less</i> Current Liabilities			
Sundry creditors	23,100		
Bills payable	11,800		
Wages accrued	700		
Salaries accrued	400	36,000	42,800
			82,300
Financed by:			
Balance b/f			80,000
<i>add</i> Net profit for year			13,300
			93,300
<i>less</i> Drawings			11,000
			82,300

We can show (some of) the adjustments in the form of “T accounts” – truncated forms of ledger accounts solely for the purpose of making such adjustments:

Bad Debt Provision				Rates and Insurance			
	£	£			£	£	
		1,500	B/d	B/d	4,400	4,200	P & L
C/d	2,000	500	P & L			200	C/d
	2,000	2,000			4,400	4,400	
		2,000	B/d	B/d	200		

Wages			
	£	£	
B/d	29,600		
C/d	700	30,300	P & L
	30,300	30,300	
		700	B/d

Example 2: Partnership

Messrs Black and White are partners, who share profits and losses in the proportion of three-fifths and two-fifths respectively. The following trial balance was extracted from their books as at 30 September. From this, together with the notes given at the end of the trial balance, you are required to prepare the final accounts for the partnership.

(If you are asked for “final accounts”, this means that you must draw up the trading account, profit and loss account, and a balance sheet.)

	£	£
Provision for bad debts		3,300
Stock 1 October (beginning of year)	62,000	
Drawings: Black	25,000	
White	19,000	
Sales and returns	3,000	280,000
Purchases and returns	152,700	2,400
Debtors and creditors	51,200	46,300
Salaries	22,100	
Wages	31,500	
Freehold property	100,000	
Furniture and fittings	5,600	
Cash at bank	6,700	
Cash in hand	1,700	
Capital: Black		100,000
White		80,000
Current a/cs 1 October (beginning of year):		
Black		5,500
White		3,900
Motor vans	12,000	
Discounts allowed	3,200	
Discounts received		1,600
Rates and insurance	4,100	
Carriage outwards	6,400	
Sundry expenses	5,800	
Bills receivable	6,000	
Partnership salary: White	5,000	
	523,000	523,000

Notes:

- (a) Stock 30 September, £68,200.
- (b) The partnership agreement provides for White to have a salary of £8,000 pa. Of this he has drawn only £5,000 as shown in the trial balance.
- (c) Allow for interest on capital at the rate of 5 per cent per annum.
- (d) Wages accrued, £1,400.
- (e) Rates prepaid, £600.
- (f) Reduce the provision for bad debts to £2,500.
- (g) Allow for £3,000 depreciation on motor vans and £1,400 on furniture and fittings.

Explanatory Note

In this example, the trading account is drawn up in the usual way, but we must remember that the profit and loss account is in two sections. The first section of the profit and loss account is prepared on normal lines, but it must not include any items which concern the partners. All items concerning partners appear in the second half of the profit and loss account, "Appropriation", and here we must not forget that drawings are not debited to the profit and loss account. The final item in the second half is the "split" of the divisible profit in the agreed proportions.

Turning to the balance sheet, remember it is always better to use separate current accounts and to take the final balances to the balance sheet. By so doing, you get a much neater presentation.

One point which might cause you trouble is the partnership salary. White has drawn £5,000 out of £8,000 due. In the profit and loss account (second half), therefore, partnership salary must appear as £8,000 – the £3,000 due but withdrawn, being shown as an addition to White's current account in the balance sheet.

Now attempt this example yourself before looking at the following solution.

Black and White
Trading and Profit and Loss Account for the year ended 30 September

	£	£	£
Sales		280,000	
<i>less</i> Returns		<u>3,000</u>	277,000
Cost of goods sold:			
Opening stock		62,000	
Purchases	152,700		
<i>less</i> Returns	<u>2,400</u>	<u>150,300</u>	
		212,300	
<i>Less</i> Closing stock		<u>68,200</u>	<u>144,100</u>
Gross profit			132,900
Reduction in bad debt provision			800
Discounts received			<u>1,600</u>
			135,300
Expenses			
Wages		32,900	
Salaries		22,100	
Sundries		5,800	
Carriage outwards		6,400	
Discounts allowed		3,200	
Rates and insurance		3,500	
Depreciation:			
Motor vans	3,000		
Furniture and fittings	<u>1,400</u>	<u>4,400</u>	<u>78,300</u>
Net profit			<u>57,000</u>

Appropriation

	£	£
Partnership salary		8,000
Interest on capital @ 5%		
Black	5,000	
White	4,000	9,000
	<u> </u>	
Share of profits		
Black 3/5ths	24,000	
White 2/5ths	16,000	40,000
	<u> </u>	<u> </u>
		57,000

Current Accounts

Dr	Black £	White £		Black £	White £	Cr
Drawings	25,000	19,000	Balances b/d	5,500	3,900	
Salary drawn		5,000	Interest on capital	5,000	4,000	
Balances c/d	9,500	7,900	Salary		8,000	
			Profit	24,000	16,000	
	<u>34,500</u>	<u>31,900</u>		<u>34,500</u>	<u>31,900</u>	
			Balances b/d	9,500	7,900	

Black and White
Balance Sheet as at 30 September

	£	£	£
Fixed Assets	<i>Cost</i>	<i>Depreciation</i>	<i>Net</i>
Freehold premises	100,000	–	100,000
Motor vans	12,000	3,000	9,000
Furniture and fittings	5,600	1,400	4,200
	<u>117,600</u>	<u>4,400</u>	<u>113,200</u>
Current Assets			
Stock		68,200	
Debtors	51,200		
<i>less</i> Provision for bad debts	2,500	48,700	
		<u>6,000</u>	
Bills receivable		600	
Rates prepaid		6,700	
Cash at bank		1,700	
Cash in hand		<u>131,900</u>	
<i>less</i> Current Liabilities			
Creditors	46,300		
Wages accrued	1,400	47,700	84,200
			<u>197,400</u>
Capital Accounts			
Black		100,000	
White		80,000	180,000
Current Accounts			
Black		9,500	
White		7,900	17,400
			<u>197,400</u>

B. DEPRECIATION AND FINAL ACCOUNTS

Now, to continue the development of final accounts preparation, we shall examine in detail how the depreciation method affects the final accounts.

Consider the following example.

Warmington started in business in December Year 1 with a capital of £600,000. Since 1 January Year 2 it has traded in a single product which is both purchased and sold for cash (i.e. there are no debtors or creditors).

The business purchased motor vehicles, fork-lift trucks and other equipment at a total cost of £400,000 in December Year 1. These fixed assets were expected to last nine years and have a combined residual value of £40,000. No dividends were paid out in Years 2-4.

The following information is provided in respect of years 2, 3 and 4:

	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>
(a) Number of items bought	13,000	14,000	14,000
Number of items sold	10,000	12,000	14,000
(b) Average purchase price per item	£90	£100	£110
Average sale price per item	£130	£140	£150
(c) Expenditure on administration, finance, selling and distribution (other than depreciation)	£305,000	£346,000	£402,000
(d) Bank balance (overdraft) at 31 December	£25,000	(£41,000)	£117,000

Required:

- Summary trading and profit and loss accounts of Warmington for each of the three years 2-4 together with the balance sheets at 31 December in each year.
 - Depreciating fixed assets on the straight-line (equal instalment) basis.
 - Depreciating fixed assets on the reducing-balance basis using a rate of 22.5 per cent. Calculations to nearest £000.
- A discussion of the results disclosed by (i) and (ii) above.

Have a go at preparing the final accounts yourself before looking at the answer which follows.

1. (i) Straight-line depreciation

Warmington
Trading and Profit and Loss Accounts, £000

	Year 2		Year 3		Year 4	
Sales		1,300		1,680		2,100
Purchases	1,170		1,400		1,540	
Opening stock	–		270		500	
Closing stock	(270)	900	(500)	1,170	(550)	1,490
Gross profit		400		510		610
Depreciation	40		40		40	
Administration	305	345	346	386	402	442
Net profit		55		124		168

Balance Sheets, £000

	Year 2	Year 3	Year 4
	£	£	£
Fixed assets at book value	360	320	280
Stock	270	500	550
Cash at bank and in hand	25	(41)	117
	<u>655</u>	<u>779</u>	<u>947</u>
Opening capital	600	655	779
Net profit	55	124	168
Closing capital	<u>655</u>	<u>779</u>	<u>947</u>

1. (ii) Reducing-balance depreciation

Warmington
Trading and Profit and Loss Accounts, £000

	Year 2		Year 3		Year 4	
Gross profit (<i>as before</i>)		400		510		610
Depreciation	90		70		54	
Administration	305	395	346	416	402	456
Net profit		5		94		154

**Warmington
Balance Sheets, £000**

	Year 2	Year 3	Year 4
	£	£	£
Fixed assets at book value	310	240	186
Stock	270	500	550
Cash at bank and in hand	25	(41)	117
	605	699	853
Opening capital	600	605	699
Net profit	5	94	154
Closing capital	605	699	853

2. The reasons for the differences between (i) and (ii) are that the reducing-balance basis of depreciation produces larger charges, relative to the straight-line basis, in early years, compensated for by lower charges later on. Where plant is more efficient in its earlier years this better reflects the true effect on the profitability of the business of the decreasing efficiency of plant.

(Note also how calculating the value of stock by a different method would affect reported profit.)

Workings for depreciation

(i) Straight-line

$$\begin{aligned} \text{Annual charge} &= \frac{\pounds 400,000 - \pounds 40,000}{9} \\ &= \pounds 40,000 \end{aligned}$$

(ii) Reducing-balance

$$\begin{aligned} \text{Year 2: } & \pounds 400,000 \times 22.5\% = \pounds 90,000 \\ \text{Year 3: } & \pounds 400,000 - \pounds 90,000 = \pounds 310,000 \times 22.5\% \\ & = \pounds 70,000 \text{ (to nearest £000)} \\ \text{Year 4: } & \pounds 310,000 - \pounds 70,000 = \pounds 240,000 \times 22.5\% \\ & = \pounds 54,000 \end{aligned}$$

Workings for stock

Year 2:	Purchases	13,000	
	Sales	10,000	
	Stock left	3,000	@ £90 = £270,000

Year 3	Purchases	14,000	
	+ Stock b/f	<u>3,000</u>	
		17,000	
	Sales	<u>12,000</u>	
	Stock left	5,000	@ £100 = £500,000

Year 4	Purchases	14,000	
	+ Stock b/f	<u>5,000</u>	
		19,000	
	Sales	<u>14,000</u>	
	Stock left	5,000	@ £110 = £550,000

C. PREPARATION FROM AN INCORRECT TRIAL BALANCE

This final example of the preparation of final accounts provides a comprehensive revision of all your studies to date.

Given below is the trial balance drawn up by M Possible for his business at 30 April Year 6:

	Dr	Cr
	£	£
Premises	52,000	
Bank overdraft	650	
Sales		110,145
Carriage outwards		1,225
Wages and salaries	17,010	
Provision for doubtful debts 1.5.Yr 5	500	
Insurance	940	
Motor vehicles (at cost)	12,700	
Purchases	62,480	
Purchases returns		870
Discount received	785	
Rates	1,620	
Debtors	19,260	
Creditors		15,960
Drawings		4,260
Capital		40,000
General expenses	2,725	
Provision for depreciation on motor vehicles 1.5.Yr 5		2,540
Stock 30. 4. Yr 6	4,330	
	175,000	175,000

Despite the fact that he had obtained a balancing trial balance, M Possible, who has little knowledge of accounting, suspects that he has made mistakes, and subsequently discovers the following errors:

- (i) Several items have inadvertently been placed in the wrong columns.
- (ii) A payment of £2,720 from a debtor has been correctly entered in the bank account, but the double entry has been omitted.
- (iii) A payment of £760 for an insurance premium has been dealt with correctly in the bank account, but entered as £670 in the insurance account.
- (iv) A credit note for £300 from A Packer has been entered in the account of A Parker.

- (v) A rates refund of £70 has been debited in the rates account.
- (vi) A purchase of a used delivery van for £7,500 has been entered in the purchases account.

M Possible had no stock on 1 May Year 5.

In addition the following information is available:

- (a) Depreciation on the motor vehicles is to be provided for at 10% on cost per annum.
- (b) Wages accrued at 30 April Year 6 amounted to £580.
- (c) Insurance was prepaid by £50 at 30 April Year 6.
- (d) £800 of debts were considered to be bad at 30 April Year 6 but these have not yet been written off.
- (e) A provision for doubtful debts amounting to 5% of debtors outstanding at the year end is to be made.

You are required to:

1. Prepare journal entries to correct items (iv), (v) and (vi) above.
2. Prepare a ***corrected*** trial balance at 30 April Year 6 after the above journal entries have been prepared.
3. Prepare a trading and profit and loss account for the year ended 30 April Year 6 and a balance sheet at that date.

1.

Journal

Item	Date		Debit £	Credit £
(iv)	May Yr 6	A Packer A Parker Being the correction of a credit note entered in the wrong account (error of commission)	300	300
(v)	May Yr 6	Rates Correction of error – rates refund £70 debited in rates account instead of credited		140
(vi)	May Yr 6	Delivery van Purchases Correction of error – purchase of van entered in error in purchases account (error of principle)	7,500	7,500

This indicates how earlier books of original entry and your double entry skills are important, even when preparing final accounts. Please revise if you find any difficulty with this.

2. Note that there were errors from items being put in the wrong debit/credit columns in the original trial balance as well as the errors (i) – (vi) detected. You will remember that you studied this earlier. Remember that the debit column includes expenses and assets and the credit column includes income and liabilities.

Corrected Trial Balance as at 30 April Yr 6

	Dr	Cr
	£	£
Premises	52,000	
Bank overdraft		650
Sales		110,145
Carriage outwards	1,225	
Wages and salaries	17,010	
Provision for doubtful debts		500
Insurance (£940 + £90)	1,030	
Motor vehicles (£12,700 + £7,500)	20,200	
Purchases (£62,480 – £7,500)	54,980	
Purchases returns		870
Discount received		785
Rates (£1,620 – £140)	1,480	
Debtors (£19,260 – £2,720)	16,540	
Creditors		15,960
Drawings	4,260	
Capital		40,000
General expenses	2,725	
Provision for depreciation on motor vehicles		2,540
	171,450	171,450

Note Remember that stock at the close of the financial year should **not** be included in the trial balance.

3. **Workings:**

(i) **Provision for depreciation:**

Provision for year ended 30. 4. Yr 6: $£20,200 \times 10\% = £2,020$

(ii) **Provision for doubtful debts:**

Remember here to deduct any bad debts which have not previously been written off **before** calculating the required provision for doubtful debts.

Closing debtors balance at 30. 4. Yr 6 = $£16,540 - £800$ (bad debts) = $£15,740$

Provision for doubtful debts should be: $£15,740 \times 5\% = £787$

Increase in provision required: $£787 - £500 = £287$

You will remember that bad debts and the provision for doubtful debts is an application of the prudence concept. Can you recall what this is? Revise if you experience any difficulty.

M Possible
Trading and Profit and Loss Account for year ended 30 April Year 6

	£	£	£
Sales			110,145
Less Cost of Goods Sold			
Opening stock		–	
Purchases	54,980		
<i>less</i> Returns	870		
Net purchases	<u> </u>	54,110	
		<u>54,110</u>	
<i>less</i> Closing stock		4,330	
Cost of goods sold			<u>49,780</u>
Gross profit			60,365
Discount received			<u>785</u>
			61,150
Less Expenses			
Carriage outwards		1,225	
Wages and salaries (£580 + £17,010)		17,590	
Increase in provision for doubtful debts		287	
Insurance (£1,030 – £50)		980	
Rates		1,480	
Bad debts		800	
General expenses		2,725	
Provision for depreciation – motor vehicles		<u>2,020</u>	<u>27,107</u>
Net profit			<u>34,043</u>

Note how the provisions, accruals and prepayments also appear in the balance sheet.

M Possible
Balance Sheet as at 30 April Year 6

	£	£	£
Fixed Assets	<i>Cost</i>	<i>Depreciation</i>	<i>Net</i>
Premises	52,000	–	52,000
Motor vehicles	20,200	4,560	15,640
	<u>72,200</u>	<u>4,560</u>	<u>67,640</u>
Current Assets			
Stock		4,330	
Debtors	15,740		
<i>less</i> Provision for doubtful debts	787	14,953	
Prepayments		50	
		<u>19,333</u>	
<i>less</i> Current Liabilities			
Creditors	15,960		
Bank overdraft	650		
Accruals	580	17,190	
Working capital			<u>2,143</u>
			<u>69,783</u>
Financed by:			
Opening capital			40,000
<i>add</i> Net profit for year			<u>34,043</u>
			74,043
<i>less</i> Drawings			<u>4,260</u>
Closing capital			69,783

Note Only the **increase** in the provision for doubtful debts of £287 is debited to the profit and loss account but the **total** balance on the provision for bad debts account must be deducted from debtors in the balance sheet.

Practice Questions

1. The trial balance of A Smith, builder, at 31 March, was as follows:

	£	£
Capital		95,720
Drawings	12,500	
Plant and machinery	50,000	
Purchases	181,170	
Purchases returns		1,180
Wages	73,780	
Sundry debtors	86,560	
Sundry creditors		50,960
Discount allowed	780	
Discount received		310
Carriage inwards	1,300	
Sales		350,310
Sales returns	2,970	
Office salaries	20,200	
Cash at bank	10,280	
Cash in hand	3,200	
Stock at beginning of year	30,230	
Rent and rates	8,500	
Factory expenses	13,000	
Carriage outwards	600	
Bad debts written off	2,010	
Provision for bad debts		4,000
Sundry expenses	5,400	
	502,480	502,480

Allow for:

- (a) Wages accrued, £5,200
- (b) Rates prepaid, £2,000
- (c) Increase provision for bad debts by £1,000
- (d) Provide 10% depreciation on plant and machinery
- (e) Value of stock at 31 March, £50,000.

You are required to prepare trading and profit and loss accounts for the year ending 31 March, and a balance sheet as at that date.

2. From the following trial balance construct the final accounts of John Maxwood, a sole trader.

	£	£
Premises (at cost)	320,000	
Fixtures/fittings (at cost)	100,000	
Plant/machinery (at cost)	140,000	
Provision for depreciations:		
Fixtures & fittings		12,000
Plant/machinery		20,000
Capital (at 1st January)		578,000
Stock on hand (1st January)	71,700	
Advertising	12,000	
Bad debts	6,200	
Heat/light	10,700	
Insurance	2,600	
Postage	3,200	
Rent/rates	5,000	
Sales (net)		520,000
Carriage inwards	5,100	
Wages/salaries	126,400	
Drawings	24,000	
Debtors	204,000	
Creditors		128,000
Cash at bank	36,100	
Purchases less returns	191,000	
	1,258,000	1,258,000

Closing stocks: £62,500

Depreciation: Fixtures/fittings, 5% on cost

Plant/machinery, 10% on cost

It was discovered, after the trial balance had been drawn up, that a piece of plant costing £8,000 had been entered in the purchases.

3. Set out below is the trial balance of Wood and Son as at 31 December:

	£	£
Capital		57,166
Stock 1 Jan	10,658	
Purchases and sales	135,196	396,103
Discounts	3,000	
Returns inwards and outwards	334	614
Carriage inwards	197	
Carriage outwards	251	
Light and heat	5,728	
Insurance	800	
Telephone	475	
Rent received		1,400
Salaries and wages	83,259	
Trade debtors and creditors	27,600	12,951
Provision for doubtful debts at 1 Jan		2,120
Premises	200,000	
Equipment	5,000	
Furniture	6,000	
Loan (repayable in 8 years' time)		10,000
Provisions for depreciation at 1 Jan:		4,000
Premises		
Equipment		2,000
Furniture		4,500
Bank and cash	12,356	
	490,854	490,854

The following information is available to you:

- (a) Stock at 31 December is valued at £9,327.
- (b) The book-keeper has recorded both discounts received and discounts allowed in a combined discounts account. You are able to ascertain that discounts received in the year amounted to £1,000.
- (c) Part of the firm's premises are rented out at an annual rental of £1,200.
- (d) The loan of £10,000 repayable in 8 years' time carries an interest charge of 10% p.a.
- (e) At 31 December telephone charges of £125 had accrued whilst insurance had been prepaid by £100.
- (f) It is discovered that Billy Bunter Ltd (one of the firm's debtors owing £700) is a bad debt and, accordingly, a decision is now made that the debt is to be written off.

- (g) Depreciation on the firm's fixed assets is to be charged as follows:
- Premises – 2% p.a. on cost (straight-line method)
 - Equipment – 25% p.a. (reducing balance method)
 - Furniture – 25% p.a. on cost (straight-line method)
- (h) At 31 December the provision for doubtful debts is to be equal to 10% of debtors at that date.

Required

Prepare the trading and profit and loss account for the year ended 31 December and the balance sheet at that date for Wood and Son.

ANSWERS TO QUESTIONS FOR PRACTICE

1.

A Smith, Builder
Trading and Profit and Loss Account for year ended 31 March

	£	£	£
Sales		350,310	
<i>less</i> Returns		<u>2,970</u>	347,340
Cost of goods sold:			
Opening stock		30,230	
Purchases	181,170		
<i>less</i> Returns	<u>1,180</u>	179,990	
Carriage inwards		<u>1,300</u>	
		211,520	
<i>less</i> Closing stock		<u>50,000</u>	
		161,520	
Wages		78,980	
Factory expenses		13,000	
Depreciation plant and machinery		<u>5,000</u>	258,500
Gross profit			88,840
Discount received			<u>310</u>
			89,150
Expenses			
Office salaries		20,200	
Rent and rates		6,500	
Carriage outwards		600	
Bad debts		2,010	
Sundries		5,400	
Provision for bad debts		1,000	
Discounts allowed		<u>780</u>	36,490
Net profit			<u>52,660</u>

A Smith, Builder
Balance Sheet as at 31 March 19..

	£	£	£
Fixed Assets			
Plant and machinery at cost		50,000	
less Depreciation		5,000	45,000
Current Assets			
Stock		50,000	
Debtors	86,560		
<i>less</i> Provision for doubtful debts	5,000	81,560	
Rates prepaid		2,000	
Bank		10,280	
Cash		3,200	
		147,040	
<i>less</i> Current Liabilities			
Creditors	50,960		
Wages accrued	5,200	56,160	90,880
Net Current Assets			135,880
Financed by:			
Capital			95,720
<i>add</i> Net profit for year			52,660
			148,380
<i>less</i> Drawings			12,500
			135,880

2.

John Maxwood
Trading and Profit and Loss Account for the year ending . . .

	£	£
Sales		520,000
Cost of goods sold:		
Stocks	71,700	
Purchases	183,000	
Carriage inwards	5,100	
	259,800	
<i>less</i> Closing stock	62,500	197,300
Gross profit		322,700
Advertising	12,000	
Bad debts	6,200	
Heat/light	10,700	
Insurance	2,600	
Postage	3,200	
Rent/rates	5,000	
Wages	126,400	
Depreciation Plant	14,800	
Fixtures/fittings	5,000	185,900
Net profit		136,800

John Maxwood
Balance Sheet as at

	£	£	£
Fixed Assets	<i>Cost</i>	<i>Depreciation</i>	<i>Net</i>
Premises	320,000	–	320,000
Fixtures/machinery	148,000	34,800	113,200
Fixtures/fittings	100,000	17,000	<u>83,000</u>
			516,200
 Current Assets			
Stock	62,500		
Debtors	204,000		
Cash/bank	<u>36,100</u>	302,600	
 less Current Liabilities			
Creditors		<u>128,000</u>	<u>174,600</u>
			<u>690,800</u>
 Proprietor's interest			
Opening capital			578,000
Profit			<u>136,800</u>
			714,800
Drawings			<u>24,000</u>
			<u>690,800</u>

3.

Wood and Son
Trading and Profit and Loss Account for the year ended 31 December

	£	£	£
Sales			396,103
<i>less</i> Returns			<u>334</u>
Net sales			395,769
<i>less</i> Cost of Goods Sold:			
Opening stock		10,658	
Purchases	135,196		
<i>less</i> Returns	<u>614</u>	134,582	
Carriage inwards		<u>197</u>	
		145,437	
<i>less</i> Closing stock		<u>9,327</u>	
Cost of goods sold			<u>136,110</u>
Gross profit			259,659
Discounts received			1,000
Rent received			<u>1,200</u>
			261,859
<i>less</i> Expenses:			
Discount allowed		4,000	
Carriage outwards		251	
Light and heat		5,728	
Insurance (£800 – £100)		700	
Telephone (£475 + £125)		600	
Salaries		83,259	
Interest on loan		1,000	
Bad debt		700	
Increase in provision for doubtful debts		570	
Depreciation: premises		4,000	
equipment		750	
furniture		<u>1,500</u>	
			<u>103,058</u>
Net profit			158,801

Wood and Son
Balance Sheet as at 31 December

	£	£	£
	<i>Cost</i>	<i>Depreciation</i>	<i>Net</i>
Fixed Assets			
Premises	200,000	8,000	192,000
Equipment	5,000	2,750	2,250
Furniture	6,000	6,000	–
	211,000	16,750	194,250
Current Assets			
Stock		9,327	
Debtors	26,900		
<i>less</i> Provision for doubtful debt	2,690	24,210	
Bank		12,356	
Prepayment		100	
		45,993	
<i>less</i> Current Liabilities			
Creditors	12,951		
Accruals (£125 + £1,000 + £200)	1,325	14,276	
Working capital			31,717
			225,967
Long term liabilities			
Loan			10,000
			215,967
Financed by:			
Opening capital			57,166
<i>add</i> Net profit			158,801
Closing capital			215,967

Study Unit 10

Control Accounts

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A. PURPOSE OF CONTROL ACCOUNTS

In a business of any appreciable size, the number of accounts, comprising assets and liabilities, expenses and gains, debtors and creditors is so large that it is physically impossible to contain them within one binder (the ledger). For this reason, it is usual to find one or more debtors ledgers, i.e. those ledger accounts are kept separately from the rest in a separate binder, although they are of course still within the double entry system of book-keeping. Similarly, the creditors ledger accounts may be kept separately from the rest. A control account is therefore defined as a total account to which is debited and credited in total all the transactions which have been debited and credited in detail to individual ledger accounts.

Dealing with Errors

The greater the number of accounts and the greater the number of transactions recorded, the greater is the likelihood that errors may creep into the work. Even the systematic checking of each entry after it is made does not entirely eliminate this danger.

Perhaps errors may come to light only when a trial balance is prepared, either periodically or at the year end. We have already considered how to locate errors where a trial balance does not agree. If such 'short cut' methods fail to locate the mistake(s), nothing else can be done but to check all entries since the trial balance was last extracted and the books agreed.

This complete check can take days or even weeks and is very unproductive. Even with a complete check, errors can be missed a second time. Further, agreement of a trial balance is only *prima facie* evidence of the arithmetical accuracy of the books; it is not at all uncommon for compensating errors to occur, which are not disclosed by a disagreement of the trial balance.

Total (or control) accounts provide an answer or alternative to the detailed checking.

A total (or control) account shows, in total, on its debit side all amounts which have been debited in detail to individual debtors or creditors accounts and on its credit side all items that have been credited in detail to individual debtors or creditors accounts. Provided that no errors have been made in the books of prime entry (day books), posting or balancing of the two control accounts (one for debtors and the other for creditors), the balances should agree with the total of all the individual debtors and creditors accounts of the business.

Thus, if a difference arises on the trial balance, the debtors and creditors accounts can be reconciled to the total (or control) account and if no error is highlighted there (i.e. individual debtors and creditors ledger accounts agree to their respective total accounts) the error must be located in the remainder of the ledger entries and a considerable bulk of rechecking entries need not be done.

Practical Points

- (a) Control accounts are usually kept by a senior official of a business, with semi-senior employees maintaining the individual ledger cards. In no circumstances should the two be kept by the same person.
- (b) Provided that the accuracy of the control account is constantly proved, management is placed in the position of knowing the net amounts due to and by the business at any time, without the necessity of preparing detailed lists of debtors and creditors from the ledger cards. ***This is of the utmost importance*** for directing financial policy and as an aid to management.
- (c) In a very large concern, it may be desirable to have several debtors and creditors control accounts. Accounts may be divided on the following lines:
 - **Alphabetical**, e.g. Debtors Control A – K
 - **Numerical**, e.g. Debtors Control 1 – 100, where a system of numerical accounts is in operation and an index will be necessary

- **Geographical**, e.g. Debtors Control SE England
- **Departmental**, e.g. 'Hardware' Debtors Control.

There are several other methods in use

- (d) To get the information we need in order to divide up the debtors and creditors control accounts, we have to provide further analysis columns in the books of prime entry, or to maintain separate books of prime entry for each control account division. As far as each is concerned, we must provide each debtors control with a cash received book and each creditors control with a cash paid book, the totals of these cash books being transferred daily to a general cash book.

B. DEBTORS CONTROL ACCOUNT

This is often known as *sales control account* or *total debtors account*. It is a summary account of the individual debtors ledger balances.

Methods

There are two approaches to using this type of account.

- Treat the individual ledger accounts as part of the double entry system and regard the control account purely as memorandum.
- Treat the control account as part of the double entry system and regard the individual ledger accounts as memoranda.

Both methods are perfectly acceptable, but we will illustrate their use by means of the second method above. You should, therefore, regard the individual debtors ledger accounts as purely memoranda, maintained only to show the individual sums owing from customers, and the control account as a ledger account within the double entry system.

Format and Double Entry

The general format of the debtors control account is shown below.

Debtors Control Account

	£		£
Balance b/d	X	Balance b/d	X
Sales	X	Cash	X
Dishonoured bills of exchange	X	Discount allowed	X
Returned cheques	X	Sales returns	X
Sundry journal debits	X	Bad debts	X
Balance c/d	X	Bills receivable	X
		Sundry journal credits	X
		Balance c/d	X
	X		X
Balance b/d	X	Balance b/d	X

We shall now consider each of the above entries in turn, together with the double entry.

Remember that we are regarding the control account as part of the double entry system (and not the individual debtors ledger accounts).

On the debit side

(a) **Balance b/d**

This represents the total amount owing by debtors at the beginning of the period.

(b) **Sales**

This information has been obtained from the sales day book and the double entry is:

Debit: Debtors control account

Credit: Sales account

Memo entries are also made on the individual debtors ledger cards or accounts (although the format of these is not important as they are outside the double entry system).

(c) **Dishonoured bills of exchange**

(d) **Bounced (returned cheques)**

Both the above items occur because a bill of exchange proves non-collectable or a cheque is dishonoured – it ‘bounces’. The original bill or cheque will have removed the debt from the control account and this can be considered as a reinstatement of the sum owing entry.

Information is obtained from the journal, in the case of a bill of exchange, and from the cash book in the case of a cheque.

The double entry is:

Debit: Debtors control account

Credit: Bills of exchange account or cash at bank account.

(e) **Sundry journal debits**

These will be considered together with sundry journal credits once the total creditors account has also been discussed, as they often arise because of transfers between control accounts.

(f) **Balance c/d**

This arises where (say) a debtor has overpaid his account; for example, he has been sold goods worth £75 and paid £80.

It would be incorrect to deduct the £5 overpaid from the total owing by the other debtors as this would result in an understatement of debtors on the balance sheet. Instead, it is shown separately in the debtors control account and classified as a current liability (overpayment by debtor) on any balance sheet.

On the credit side

(a) **Balance b/d**

This represents the total amount owing to (back to) debtors at the beginning of the period.

(b) **Cash**

This represents sums received from debtors during the period and the information has been obtained from the cash book. Often the trader will add an extra column on the debit side of his cash book (in a similar manner to ‘discounts allowed’ discussed in an earlier study unit) into which all cash received from debtors is inserted:

Cash at Bank (Extract)

	Discount Allowed £	Debtors Total £	Total (Bank) £
Fred – Debtor	50	450	450
Sales of Fixed Assets			5,000
Joe – Debtor	20	900	900
Carol – Debtor		800	800
	70	2,150	

(Total columns are balanced to find cash at bank in the normal manner.)

The double entry is therefore (as illustrated by the above example):

	£
Debit: Bank account	2,150
Credit: Debtors control account	2,150

(c) Discount allowed

As shown above, this information can be also obtained from the cash book:

	£
Debit: Discount allowed account	70
Credit: Debtors control account	70

(d) Sales returns

This information is obtained from the sales returns day book and the double entry is:

Debit: Sales returns account	
Credit: Debtors control account	

(e) Bad debts

This information is obtained from the journal. The double entry is:

Debt: Bad debts account	
Credit: Debtors control account	

(f) Bills receivable

These are a method of 'paying' for debtors and are really a 'swap' of an unofficial undertaking to pay for goods for an official one. The definition of a bill of exchange is:

“An unconditional order in writing, addressed by one person to another, signed by the person giving it, requiring the person to whom it is given to pay on demand or at a fixed or determinable future time, a sum certain in money, to or to the order of a specified person or bearer.”

The double entry is:

Debit: Bills receivable account	
Credit: Debtors control account	

(g) Sundry journal credits

See later.

(h) Balance c/d

This represents sums owed by debtors at the end of the period concerned, capable of proof against individual debtors records.

Hence, the control account is built up not from an analysis of debtors accounts but from information provided from subsidiary books such as day books, journal and cash book.

C. CREDITORS CONTROL ACCOUNT

This is often known as *purchase control account* or *total creditors account*. This is also a summary account of the individual creditors' ledger balances.

Methods

As with debtors control, two methods of accounting exist, namely:

- treating the individual ledger accounts as part of the double entry system and regarding the control account as purely memorandum; or
- treating the control account as part of the double entry system and the individual ledger accounts as memoranda.

Again, we will consider the second method.

Format and Double Entry

The general format of the creditors control account is shown below.

Creditors Control Account

	£		£
Balance b/d	X	Balance b/d	X
Cash	X	Purchases	X
Discount received	X	Returned cheques	X
Purchase returns	X	Sundry journal credits	X
Bills payable	X	Balance c/d	X
Sundry journal debits	X		
Balance c/d	X		
	X		X
Balance b/d	X	Balance b/d	X

We shall now consider the double entry of each of the above.

On the debit side

(a) Balance b/d

As with debtors control, it is likely that the trader has overpaid some accounts by small sums and this balance represents those sums due back to the trader (although in practice he will use

them as part payment for future goods bought). In the final accounts such debit balances would be shown as current assets and not reduce the current liability which the credit balance represents.

(b) Cash

This represents sums paid to creditors during the period and the information has been obtained from the cash book by adding an extra column on the credit side.

Cash at Bank (Extract)

	Discount Received £	Creditors Total £	Total (Bank) £
Jane – Creditor	20	280	280
Peter – Creditor		900	900
Wages			270
	20	1,180	

(Total columns are balanced to find cash at bank in the normal manner.)

The double entry is therefore (as illustrated above):

	£
Debit: Creditors control account	1,180
Credit: Bank account	1,180

(c) Discount received

As shown above, this information also can be obtained from the cash book:

	£
Debit: Creditors control account	20
Credit: Discount received	20

(d) Purchase returns

This information is obtained from the purchase returns day book and the double entry is:

Debit: Creditors control account
Credit: Purchase returns account

(e) Bills payable

These are bills of exchange, used by the trader to 'pay' his suppliers and the double entry is:

Debit: Creditors control account
Credit: Bills payable account

On the credit side

(a) Opening credit balance

This represents sums due to suppliers at the beginning of the period and will correspond with balance on individual ledger 'accounts' or cards.

(b) Purchases

The information is obtained from the purchase day book and the double entry is:

Debit: Purchases account

Credit: Creditors control account

(c) Returned cheques

These should be uncommon as they represent cheques the trader has either incorrectly written out or cheques he has bounced (dishonoured)....!

The double entry is:

Debit: Bank account

Credit: Creditors control account

(d) Sundry journal credits

See later.

(e) Balance c/d

This represents any small sums owed back to the trader for overpayments, at the end of the period concerned.

D. SUNDRY JOURNAL DEBITS AND CREDITS IN BOTH DEBTORS AND CREDITORS CONTROL ACCOUNTS

The best way to illustrate these is by examples:

Example 1

J Dewhurst supplied the business with £1,000 of goods and the business sold him £490 of goods. The sums are to be set off against one another, leaving a net amount owing by the business. Ledger accounts would appear as:

Dr	Sales Account		Cr
	£	Balance b/d (which includes £490 Dewhurst from sales day book)	£

Dr	Purchases Account		Cr
Balance b/d (which includes £1,000 Dewhurst from purchase day book)	£		£

Dr	Debtors Control		Cr
Balance b/d (which includes £490 Dewhurst from sales day book)	£	Creditors control	£
	X		490

Dr	Creditors Control		Cr
	£		£
Debtors control	490	Balance b/d (which includes £1,000 Dewhurst from purchase day book)	X

Note the entry (via the journal):

	£	
Debit: Creditors control	490	
Credit: Debtors control	490	

being offset of debts.

A corresponding entry would be made on each of the individual debtor and creditor cards of Dewhurst.

The above example dealt with sundry journal debits in the creditors control, and sundry journal credits in the debtors control. Let us now turn to the other 'pair' of sundry items.

Example 2

J Brown is both a debtor and a creditor of a business. In error, the creditors control is debited with a cheque for £100 returned from the bank marked "no funds J Brown Account".

The ledgers showing the correcting entries would appear as follows:

Dr	Debtors Control		Cr
	£		£
Balance b/d	X		
Creditors control (to correct error)	100		

Dr	Bank		Cr
	£		£
Balance b/d	X	Creditors control (This should have read debtors control)	100

Dr	Creditors Control		Cr
	£		£
Cash (Error – this should have been debited to debtors control)	100	Balance c/d Debtors control (to correct error)	X 100

Note what has happened here.

(a) The entries:

Dr Creditors control – in error

Cr Bank

(b) The correction:

Dr Debtors control

Cr Creditors control

Practice Question

The following balances appear in the books for a business on 31 December 20x1:

	£
Cash balance	360
Balance at bank in favour of business	7,540
Debtors ledger control account	17,650
Creditors ledger control account	9,740

During the month of January 20x2, the following transactions occur:

	£
Jan 2	
Received cheque from Debtor A	1,540
Allowed discount Debtor A	10
Received cheque from Debtor B	770
Allowed discount Debtor B	10
Paid by cheque – Creditor E	470
Paid by cheque – Creditor F	2,640
Paid by cash – Creditor G	100
10	
Paid cash – Salaries	250
18	
Received – Cash sales	490
22	
Received cheque from Debtor C after deducting contra account £500	2,500
Drew cash from bank	1,000
22	
Paid wages out of cash	1,230
Paid petty cashier out of cash	250
Paid by cheque Creditor H	970
23	
Received cheque Debtor D	80
31	
Received cash – sales	570
Banked cash	350
Credit sales during month were	6,940
Returns and allowances to customers were	140
Bad debts written off were	100
Purchases during month were	4,960
Credits for packages returned to creditors were	150

Required:

Write up cash book and debtors and creditors ledger control accounts for the month of January 20x2.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTION FOR PRACTICE

Dr		Debtors Control Account		Cr		
20x2		£		20x2	£	
Jan 1	Balance b/d	17,650		Jan 31	Sundry journal credit (creditors control)	500
Jan 31	Sales	6,940			Returns and allowances	140
					Bad debts	100
					Cash & discount	4,910
					Balance c/d	18,940
		24,590				24,590

Dr		Creditors Control Account		Cr		
20x2		£		20x2	£	
Jan 31	Sundry journal debits (debtors control)	500		Jan 1	Balance b/d	9,740
	Returns	150		Jan 31	Purchases	4,960
	Cash	4,180				
	Balance c/d	9,870				
		14,700				14,700

The cash book is shown on the next page.

CASH BOOK

Date	Details	Ref	Discount Allowed	Debtor	Cash	Bank	Date	Details	Ref	Discount Allowed	Creditor	Cash	Bank
20x2 Jan 1	Balance b/d		£		£	7,540	20x2 Jan 2			£		£	
2	A		10	1,540	360	1,540	2	E			470		470
2	B		10	770		770	2	F			2,640		2,640
18	Cash sales				490		10	G			100	100	
22	C			2,500		2,500	22	Salaries	C			250	
22	Bank				1,000		22	Cash				1,230	1,000
23	D			80		80	22	Wages				250	
31	Cash sales				570		23	Petty cash			970		970
31	Cash					350	31	H				350	
			20	4,890	2,420	12,780	31	Bank				240	7,700
								Balance c/d			4,180	2,420	12,780

Study Unit 11

Partnerships

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A. NATURE OF PARTNERSHIP

Being a sole trader means being in control of the business – being responsible for all the decision-making – and being entitled to all the profits of the business or having to suffer all its losses.

However, practising as a sole trader can be restrictive in two main areas:

- Limited time available (i.e. hours put in by sole trader himself).
- Limited resources available (i.e. capital contributed by the sole trader, although loans etc. may be available).

Forming a partnership may lift these restrictions in that more man-hours and more capital become available. It may also become easier to obtain a loan. However, in a partnership no one person has total control nor a right to all the profits.

Partnerships are commonly found:

- In family businesses.
- Where two or more sole traders have come together to form a partnership.
- In professional firms such as solicitors, accountants and doctors.

Definition

The **Partnership Act 1890**, section 1 defines a partnership as follows:

“The relation which subsists between persons carrying on a business in common with a view to profit”.

In keeping with this definition, the essential elements of a partnership are as follows.

- (a) There must be a business. Under the term ‘business’ we include trades of all kinds and professions, but the rules of a particular profession may disallow partnerships between its own members, e.g. in the case of barristers.
- (b) The business must be carried on in common.
- (c) The parties must carry on the business with the object of gain. There are many associations of persons where operations in common are carried on, but as they are not carried on with the view to profit they are not to be considered as partnerships, e.g. a sports club.

Types of Partnership

We can distinguish differences in both the kinds of partnership and the kinds of partner.

Kinds of partnership

There are *two* kinds of partnership:

(a) ***Ordinary or general partnership***

There are a number of ordinary partners, each of whom contributes an agreed amount of capital, is entitled to take part in the business (but is not entitled to a salary for so doing, unless specially agreed) and to receive a specified share of the profits or losses. Each partner is jointly liable to the extent of his full estate for all the debts of the partnership.

(b) ***Limited partnerships***

Limited partnerships were introduced by the **Limited Partnership Act 1907**. These must consist of *at least one general partner* to take part in the business and to be fully liable for all debts as though it were an ordinary partnership. The remaining partners are *limited* partners who may take no part in the business and who are liable for the debts of the partnership only to the extent of the capital they have agreed to put in. These partnerships, which must be registered, are not very common.

Kinds of partner

There are basically *four* kinds of partner.

(a) **Active partner**

One who takes an active part in the business.

(b) **Dormant or sleeping partner**

One who retires from active participation in the business but who leaves capital in the business and receives a reduced share of the profits.

(c) **Quasi partner**

One who retires and leaves capital in the business as a **loan**. Interest, based on a proportion of the profits, is credited to the retired partner's account each year and debited as an expense to profit and loss account. This type of partner would be more accurately described as a deferred creditor, i.e. one who receives payment after **all** other creditors.

(d) **Limited partner**

One who is excluded from active participation and who is liable only up to the amount he has contributed as capital.

Comparison with Limited Companies

The following table illustrates the main differences between a partnership and a public limited company.

Partnership	Public Limited Company
Maximum number of partners is 20, with certain exceptions.	No maximum number of shareholders.
A partner cannot transfer an interest to another so as to constitute a partner. A new partner can be introduced only if all existing partners agree.	A shareholder may freely transfer or assign his shares to another.
A partnership can be made bankrupt.	An insolvent company is wound up.
Partners are managers of the business and agents for the firm.	A shareholder (unless a director) does not act as a manager nor as an agent of the company.
A partnership terminates on the death of a partner. If the survivors remain in business, this is a fresh partnership.	A company does not cease to exist if a shareholder dies.
The liability of partners (other than limited partners) is unlimited.	Liability of shareholders is limited to the amounts they have signed to pay for their shares.
A partnership has no separate legal existence. (N.B. in Scotland a firm is a legal person as distinct from the partners.)	A company is a separate legal entity quite distinct from the shareholders.

Partnership Agreement

Form of contract

It is not necessary for a partnership contract to be in any special form. In practice, however, the terms of the partnership are normally drawn up in writing (usually under seal), though an unsigned document drawn up by one of the partners and acted upon by the others has been held to constitute the terms of the partnership (*Baxter v. West*).

Where no written document sets out the terms of the partnership, the method of dealing which the partners adopt is admissible in evidence to show the terms of that partnership (*Smith v. Jeyes*). Where the terms of the partnership are embodied in writing, they may be varied by consent of all the partners.

So far as the 1890 Act defines the duties and rights of the partners, the Act will apply; but the terms of the partnership agreement may modify such duties and rights.

Usual provisions of the partnership agreement

A properly drawn partnership agreement would normally contain the following provisions:

- Nature of the business to be carried on by the firm
- Capital and property of the partnership, and the respective capitals of each partner
- How the profits should be divided between the partners, and how the losses should be shared
- Payment of interest on capital, and the drawing rights of the partners
- Keeping of accounts, and how they should be audited
- Powers of the partners
- Provision for dissolution of the partnership
- How the value of the goodwill should be determined upon the retirement or death of a partner
- Method to be employed in computing the amount payable to an out-going partner, or to the representatives of a deceased partner
- Right of the majority of partners to expel one of their members
- A clause at the effect that disputes be submitted to arbitration.

Unless there is express provision made, a majority of partners cannot vary the terms of the partnership, expel one of their members, introduce a new partner, or change the nature of the business of the firm. Where the partnership agreement makes no provision for these matters, there would have to be agreement by all the partners to effect any of these things, and **not** a mere majority.

Section 24 of the Partnership Act

This section applies where no express provision has been made in the partnership agreement.

- (a) The partners are entitled to share equally in the profits and capital of the business. They must contribute equally towards the losses, whether they are capital losses or otherwise.
- (b) Every partner must be indemnified by the firm in respect of personal liabilities incurred and payments made by him in the ordinary course of the firm's business or in respect of anything done for the preservation of the business or property of the partnership.
- (c) A partner who advances money to the firm for business purposes over and above the amount of his agreed capital is entitled to interest on such advance at the rate of five per cent per annum from the date of the advance.
- (d) A partner is not entitled before the ascertainment of profits to interest on the capital he has subscribed.

- (e) Every partner may take part in the management of the business of the firm, but no partner is entitled to remuneration for such services. Where, however, extra work has been caused by the actions or conduct of a certain partner then, as a general rule, the other partners are entitled to some remuneration in respect of this extra work.
- (f) A new partner may not be introduced without the consent and agreement of the existing partners.
- (g) Any difference in connection with ordinary matters in the partnership may be decided by a majority of partners, but no change may be made in the nature of the partnership, unless all the partners consent.
- (h) The books of the partnership shall be kept at the principal place of business of the partnership and every partner is to have access to them for the purpose of inspecting them or of taking copies.

Remember that they apply only when *no* partnership agreement is in existence or, if in existence, *is silent* on any of the above matters.

Duration of partnership

The partnership agreement may fix the duration of the partnership. It will then terminate at the fixed date.

However, should the partners continue to carry on the business after the fixed date, they are deemed to be continuing the partnership on the same terms as before, except so far as they would be inconsistent with a partnership at will.

Where there is no fixed duration of the partnership, it will be a *partnership at will*.

- (a) Such a partnership may be terminated by any partner at any time upon written notice to the other partners.
- (b) Although no fixed time has been agreed upon for the duration of the partnership, it is possible for there to be an implied agreement between the partners upon the matters, but the partner who alleges this will have the burden of proof. (*Burdon v. Barkus*).
- (c) The fact that the partners continue business and have not wound up the affairs of the firm raises the presumption that it is intended to continue the partnership (Section 27).
- (d) We have said above that the firm will continue upon the same terms after a fixed period for the duration of the partnership has expired so far as the terms would not be inconsistent with a partnership at will. Thus, if the terms of the partnership deed provided that one partner should take one third of the profits and the other two-thirds, this arrangement would continue. An arbitration clause in the original deed would still continue to be binding on the partners.

Where a partnership is entered into for a single transaction it will terminate when the transaction is accomplished.

B. PARTNERSHIP CAPITAL AND CURRENT ACCOUNTS

In simple terms, partnerships may be formed where:

- Two or more persons come together, none of whom has previously engaged in business. They contribute cash and/or assets of pre-arranged values.
- One or more persons join an existing trader in partnership.
- Two or more traders join together in partnership.

In each case, the cash and assets contributed by each person constitute his/her capital. When capital is introduced the double entry is:

Dr	Cash/Bank
Cr	Partners' capital accounts

If the partnership agreement provides that capitals are to remain *fixed* (i.e. unaltered), a separate **current account** must be opened for each partner to record share of profits, salary, interest on capital and loans, drawings (transferred from drawings account) and interest on drawings.

Unless it is specified that profits, etc. are to be adjusted in the capital account, you should always open a current account.

Where fixed capitals apply, any moneys later advanced by the partners must be treated as loans (unless they agree to incorporate such advances in capitals). These loans bear interest at 5% per year, or such other rate as may be agreed upon.

Interest on capitals and drawings

Where profits are not shared in the same ratio as capitals, it is usual to allow interest on capitals, but this is done only when the partners so agree. Interest is debited to interest on capital account and credited to the current account of the partner concerned.

In many instances, partners' drawings are effected at irregular intervals and for varying amounts, and it is necessary to charge interest in order to adjust the rights of the partners among themselves. This charge on drawings is debited to current account and credited to interest on drawings account.

In practice, the interest is charged on the amount of each drawing from the date it is drawn to the end of the year. In an examination question, if dates of drawings are unknown, calculate interest on the average level during the year, i.e. half the final total.

Partners' salaries

Some partners devote more time than others to the administration of partnership affairs, and this is sometimes conveniently adjusted by the mutual agreement of the payment of a specified salary to such partners. It is very popular in cases where junior partners are paid a salary and given a small interest in the profits of a business. The payment of the salary is debited to partners' salaries account.

Example

At this stage it will be helpful if we place these various items together in a worked example. Make a careful note of the double entry involved and, in particular, the entries in the current account.

James Nelson is a partner in a firm of three partners. The terms of the partnership are that he shall:

- receive a salary of £12,000 per annum
- receive interest on capital of 5%
- pay interest on drawings of 2½%.

You are told that his drawings are £4,000 and his fixed capital is £60,000.

The balance of his current account is £6,000.

Nelson's share of net profit is £4,800.

Dr		Current Account – James Nelson		Cr	
	£		£		
Drawings a/c	4,000	Balance b/d	6,000		
Interest on drawings a/c	100	Partners' salary a/c	12,000		
Balance c/d	21,700	Interest on capital a/c	3,000		
		Share of profit	4,800		
	25,800		25,800		
		Balance b/d	21,700		

Dr		Partners Salary Account		Cr	
	£		£		
Current a/c – Nelson	12,000	Profit and loss appropriation	(Total for all partners)		

Dr		Partners Interest on Capital Account		Cr	
	£		£		
Current a/c – Nelson	12,000	Profit and loss appropriation	(Total for all partners)		

Dr		Interest on Drawings Account		Cr	
	£		£		
Profit and loss appropriation	(Total for all partners)	Current a/c – Nelson	100		

Dr		Partners Drawings Account		Cr	
	£		£		
Cash	4,000	Current a/c – Nelson	4,000		

You should become familiar with all aspects of these accounts.

Notice the way in which the partners' salary account and interest account are closed by transfer to the appropriation section of the profit and loss account. Although this example shows the affairs of only one partner, you should remember that there are other partners and that the closing transfers to the profit and loss account will include the total for all partners.

In the case of the drawings account, the important entries are in the cash book and current account, the drawings account being used to collect each partner's annual drawings into one total. The entries are as follows:

Debit:	Drawings a/c	}	when drawings are made.
Credit:	Cash Book		
Debit:	Current a/c	}	with total for each partner at end of year.
Credit:	Drawings a/c		

C. PARTNERSHIP FINAL ACCOUNTS

Profit and Loss Account and Appropriation Account

In the case of a partnership, the profit and loss account is really in two sections.

- The first section is drawn up as already indicated earlier and is debited with the net profit made (or credited with the net loss).
- To complete the double entry, the amount of net profit is then carried down as an ordinary balance and credited to the second section of the profit and loss account. (N.B. a net loss would be carried down to the debit side of this section.) It is this second section which shows how the net profit is allocated to the various partners, and it is called the profit and loss appropriation account, or just the appropriation account. You have already been introduced to the concept of the appropriation account.

Remember that in a partnership the partners each have two accounts, known as the capital account (which is kept intact), and the current account. A partner's current account is debited with his or her drawings, and with a proportion of any loss which the business might sustain. The current account is also credited with the partner's share of the net profit, and with interest on capital if this is provided for in the partnership agreement.

Where a partner lends money to the business, over and above subscribed capital, he or she will also have a loan account, which will be credited with the amount of the loan. Any interest allowed on this loan will be debited to the first section of the profit and loss account and credited to the partner's current account. Thus, the capital account and loan account (if any) of a partner, will remain constant but his or her current account will fluctuate year by year. The loan account will, however, alter with any repayments or additional amounts advanced by way of loan. (Interest on loans must always appear in the first part as a charge on profits, and not as an appropriation.)

In the case of a partnership, the second part of the profit and loss account, the appropriation account, is credited with the net profit of the trading period, as stated above. This second part is debited with interest on the partners' capitals where this is provided for in the partnership agreement. Where the agreement provides for one or more of the partners to have a salary, this too must be debited to the appropriation account. Such salary will, of course, be credited to the current account of the partner concerned.

Then, when these items have been debited, **and only then**, the remaining profit can be divided. It must be divided exactly as the partnership agreement provides.

The appropriation account will be debited with the shares of the remaining profit which are due to the partners. This will close the profit and loss appropriation account and, to complete the double entry, the current account of each partner must be credited with his share of the profit. Where a loss has been sustained, of course, the reverse is the case.

Example 1

Smith, Brown and Robinson are partners who share profits in the proportion of their capitals, which are £50,000, £20,000 and £10,000 respectively. The net profit for the year is £71,000. Interest on capital is to be allowed at 5 per cent per annum, and Robinson is to have a partnership salary of £3,000 per annum.

Show how the profit of £71,000 is allocated.

Appropriation Account y/e

	£	£	£
Net profit b/d			<u>71,000</u>
Robinson – salary	<u>3,000</u>	3,000	
Interest on capitals:			
Smith	2,500		
Brown	1,000		
Robinson	<u>500</u>	4,000	
Share of profit:			
Smith 5/8	40,000		
Brown 1/4	16,000		
Robinson 1/8	<u>8,000</u>	<u>64,000</u>	<u>71,000</u>

Thus the current account will be credited as follows:

	£	
Smith	42,500	(£2,500 + £40,000)
Brown	17,000	(£1,000 + £16,000)
Robinson	<u>11,500</u>	(£3,000 + £500 + £8,000)
Net profit shown in first part of profit and loss	<u>71,000</u>	

Example 2

Messrs A, B and C share profits and losses in the proportion of 5, 3 and 2, their respective capital accounts being £50,000, £40,000 and £10,000. The net profit for the year before making the following provisions was £67,000. Interest is to be allowed on the capital accounts at the rate of 5%. C is to have a partnership salary of £4,000 per annum and interest is to be charged on the partners' drawings as follows: A £600, B £350, C £50.

The first half of the profit and loss account will be drawn up in the usual way, but the second half will be as follows:

Appropriation Account y/e

	£	£	£
Net profit b/d			67,000
Interest on drawings			
A		600	
B		350	
C		50	1,000
			68,000
Salary – C	4,000	4,000	
Interest on capitals:			
A	2,500		
B	2,000		
C	500	5,000	
Share of profit:			
A 1/2	29,500		
B 3/10	17,700		
C 2/10	11,800	59,000	68,000

Thus, A's current account will be credited with £2,500 and £29,500, and will be debited with £600. Also B's current account will be credited with £2,000 and £17,700, and will be debited with £350. Lastly, C's current account will be credited with £500, £4,000 and £11,800 and will be debited with £50.

Never debit drawings to profit and loss account. Remember that these are withdrawals of cash or stock in anticipation of profit. ***They are not in any sense expenses of running the business.***

Special note on partnership salaries

If an item appears in the trial balance for partnership salaries, only one entry will appear in the final accounts, i.e. the debit to the appropriation account. If, however, the item is mentioned as a footnote to the trial balance, it will *also* appear in the current account of the partner concerned, as shown in the balance sheet.

The Balance Sheet

The balance sheet should be drawn up in the same form as the sole trader's.

Now follow carefully two complete problems concerning the final accounts of a partnership.

Example 1

A, B and C entered into partnership on 1 April 20x1, sharing capitals in the ratio of 3 : 2 : 1 and profits 4 : 3 : 2. The partnership agreement provides for 6% per annum interest on capitals and also for a commission to A equivalent to 10% of the net trading profit before charging such commission and interest on loans and on advances.

The following are the balance in their books at 31 March 20x2.

	Dr	Cr
	£	£
Capitals		75,000
Purchases	120,000	
Sales		150,000
Rent	2,400	
Insurance commissions		1,540
Rates and insurance	1,280	
Drawings: A	2,000	
B	3,000	
C	4,000	
Loan – B (31 December 20x1)		40,000
Loan – C (30 June 20x1)	90,000	
Freehold property	40,000	
Motor vehicles (30 September 20x1)	7,000	
Sundry debtors	15,000	
Sundry creditors		18,000
Telephone	550	
Fixtures	1,250	
Salaries	5,750	
Lighting and heating	1,400	
Bad debts	360	
Bank interest	400	
Bank		10,000
Cash	150	
	294,540	294,540

Adjustments:

- (a) Closing stock £12,000
- (b) Depreciate vehicles and fixtures by 20% pa and 8% pa respectively.
- (c) The debit of £550 for telephone includes a deposit (returnable) of £50. Calls unpaid amount to £60.
- (d) Provide for:

	£
Salaries owing	270
Insurance prepaid	400
Rates owing	700
- (e) Since the trial balance was drawn up, debts of £1,400 have proved irrecoverable and must be written off.
- (f) A provision for bad debts of 5% is to be created.
- (g) A paid general expenses of £960 out of his own pocket on 31 October 20x1.

Prepare the necessary final accounts, paying special attention to order and layout.

A, B and C
Trading and Profit and Loss Account for the year ended 31 March 20x2

	£	£
Sales		150,000
Cost of Sales		
Purchases	120,000	
less Closing stock	<u>12,000</u>	<u>108,000</u>
Gross profit		42,000
Insurance commissions		<u>1,540</u>
		43,540
Expenses		
Rent	2,400	
Rates and insurance	1,580	
Light and heat	1,400	
Salaries	6,020	
Telephone	560	
Bad debts	1,760	
Provision for bad debts	680	
Bank interest	400	
General	960	
Depreciation: Motor vehicles	700	
Fixtures	100	
Loan interest	500	
Advance A – 5% on £960	<u>20</u>	<u>17,080</u>
Net Profit		26,460

Appropriations

	£	£	£
Commission 10% on £26,980 to A		2,698	
Interest on capitals: A	2,250		
B	1,500		
C	<u>750</u>	4,500	
Share of profit: A 4/9	8,561		
B 3/9	6,421		
C 2/9	<u>4,280</u>	<u>19,262</u>	<u>26,460</u>

Current Accounts

	A	B	C		A	B	C
	£	£	£		£	£	£
Drawings	2,000	3,000	4,000	Commission	2,698		
Balance	12,489	5,421	1,030	Interest	2,250	1,500	750
				Profit	8,561	6,421	4,280
				Advance	960		
				Interest on advance	20	500	
	14,489	8,421	5,030		14,489	8,421	5,030
				Balance	12,489	5,421	1,030

**Balance Sheet as at 31 March 20x2
(Horizontal format)**

	£	£	£		£	£
Fixed assets	<i>Cost</i>	<i>Dep'n</i>	<i>Net</i>	Partners interest		
Freehold property	40,000	-	40,000	Capital accounts		
Motor vehicles	7,000	700	6,300	A	37,500	
Fixtures	1,250	100	1,150	B	25,000	
	48,250	800	47,450	C	12,500	75,000
Current assets				Current accounts		
Stock		12,000		A	12,489	
Debtors	13,600			B	5,421	
less Provision for bad debts	680	12,920		C	1,030	18,940
Deposit & prepayments		450				93,940
Cash		150	25,520	Loan account B		40,000
Partners loan – C			90,000	Current Liabilities		
				Creditors	18,000	
				Accrued expenses	1,030	
				Overdraft	10,000	29,030
			162,970			162,970

Notes

- (a) Depreciation of vehicles for six months only.

- (b) Provision for bad debts calculated on good debts. It is **wrong** to show the £1,400 debts now written off in the balance sheet.
- (c) No interest on loan to C, because apparently no agreement to charge interest.
- (d) Interest allowed to B on his **loan** at 5% pa. (Section 24, Partnership Act 1890.)
- (e) A has made an **advance** beyond the amount of his agreed capital contribution and, like B, is entitled to interest at 5% pa thereon (Section 24, Partnership Act 1890).
- (f) As A's commission is 10% of the net trading profits **before** charging such commission and interest, he receives $10/100$ of £26,980 = £2,698. Had the commission been calculated on net profits after charging such commission, it would have been:

$$\frac{10}{100+10} = \frac{10}{110} \text{ or } \frac{1}{11} \text{ of } £26,980 = £2,453 \text{ (to nearest £)}$$

Example 2

Here is a further problem of a similar nature. Polly Pink and Benjamin Brown are in partnership, sharing profits and losses two-thirds and one-third respectively. Interest on capital at five per cent is to be credited to the partners annually. The trial balance of their books at 31 December is as follows:

	£	£
P Pink: Capital account		36,000
Current account balance, 1 January		1,200
Drawings account	10,040	
B Brown: Capital account		16,000
Current account balance, 1 January		800
Drawings account	8,470	
Office furniture at cost	8,400	
Sundry debtors and creditors	29,340	8,540
Purchases and sales	370,600	430,210
Stock, 1 January	18,800	
Carriage inwards	2,920	
Returns inwards and outwards	1,250	2,200
Rent	3,750	
Salaries	6,300	
Carriage outwards	560	
Discounts		3,310
Provisions for bad debts		5,000
Advertising	8,000	
Rates	1,800	
Insurance	620	
National insurance	270	
Telephone	260	
General expenses	1,330	
Printing and stationery	640	
Postage	1,170	
Repairs	210	
Electricity	180	
Bank charges	60	
Investments: £16,000 5% debenture stock at cost	15,570	
Interest on investments		400
Cash at bank	12,930	
Cash in hand	190	
	503,660	503,660

The stock at 31 December is valued at £12,870.

Required:

Prepare trading and profit and loss accounts for the year ended 31 December and balance sheet at that date after making the following adjustments:

- (a) One quarter's rent is outstanding.
- (b) Rates unexpired £360.
- (c) Insurance unexpired £210.
- (d) Six months' interest accrued on investment.
- (e) Carry forward one-half of the amount spent on advertising.
- (f) Write off bad debts £670.
- (g) Depreciate office furniture at 5% per annum.

Pink and Brown
Trading and Profit and Loss Account for the year ended 31 December

	£	£	£
Sales		430,210	
<i>less</i> Returns		<u>1,250</u>	428,960
Cost of Sales			
Opening stock		18,800	
Purchases	370,600		
<i>less</i> Returns	<u>2,200</u>	368,400	
Carriage inwards		<u>2,920</u>	
		390,120	
<i>less</i> Closing stock		<u>12,870</u>	<u>377,250</u>
Gross profit			51,710
Discounts received			3,310
Interest on investment			<u>800</u>
			55,820
Expenses			
Rent		5,000	
Rates		1,440	
Salaries	6,300		
National Insurance	<u>270</u>	6,570	
Electricity		180	
Telephone		260	
Postage		1,170	
Insurance		410	
Printing and stationery		640	
Repairs		210	
General		1,330	
Carriage outwards		560	
Advertising		4,000	
Bad debts		670	
Bank charges		60	
Depreciation – furniture		<u>420</u>	<u>22,920</u>
Net profit			32,900

Pink and Brown
Trading and Profit and Loss Account for the year ended 31 December
Appropriations

	£	£	£
Interest on capital: Pink	1,800		
Brown	800	2,600	
	20,200		
Profit sharing: Pink 2/3	20,200		
Brown 1/3	10,100	30,300	£32,900
	10,100	30,300	£32,900

Current Accounts

	Pink	Brown		Pink	Brown
	£	£		£	£
Drawings	10,040	8,470	Balance	1,200	800
Balance	13,160	3,230	Interest	1,800	800
			Profit	20,200	10,100
	23,200	11,700		23,200	11,700
			Balance	13,160	3,230

The balance sheet, in vertical format, is shown on the next page. Note how fixed assets are presented and the method of setting out the partners' interest.

Pink and Brown
Balance Sheet as at 31 December

Fixed Assets	<i>Cost</i>	<i>Dep'n</i>	<i>Net</i>
	£	£	£
Office furniture	8,400	420	7,980
Investment	15,570	–	15,570
	<u>23,970</u>	<u>420</u>	<u>23,550</u>
	£	£	£
Current Assets			
Stock	12,870		
Debtors	28,670		
<i>less</i> Provision	<u>5,000</u>	23,670	
Accrued interest on investment		400	
Prepayments		4,570	
Bank		12,930	
Cash		<u>190</u>	54,630
Current Liabilities			
Creditors		8,540	
Accruals		<u>1,250</u>	<u>9,790</u>
			<u>44,840</u>
			<u>68,390</u>
Represented by:			
Partners' interest:			
	Pink	Brown	Total
	£	£	£
Capitals	36,000	16,000	52,000
Current	<u>13,160</u>	<u>3,230</u>	<u>16,390</u>
	49,160	19,230	68,390

Notes

(1) Prepayments:	£
Rates	360
Insurance	210
Advertising	<u>4,000</u>
	<u>4,570</u>

(2) Accruals: Rent £1,250

Practice Question

James, Paul and Mary are in partnership together. The balance of their capital accounts is as follows:

James	£100,000
Paul	£80,000
Mary	£60,000

The yearly drawings are:

James	£20,000
Paul	£40,000
Mary	£15,000

The following is the profit and loss appropriation account of the partnership.

Appropriation Account for y/e

	£	£	£
Net profit			100,250
Interest on drawings:			
James		1,000	
Paul		2,000	
Mary		750	3,750
			104,000
Interest on capital:			
James	10,000		
Paul	8,000		
Mary	6,000	24,000	
Salary – James		10,000	
Profit sharing:			
James	30,000		
Paul	20,000		
Mary	20,000	70,000	104,000
			104,000

There were no balances on the current accounts at the beginning of the year. You are required to prepare the balance sheet of the partnership (as far as the information permits) after completing the current accounts.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTION FOR PRACTICE

James, Paul and Mary Current Accounts

	James	Paul	Mary		James	Paul	Mary
	£	£	£		£	£	£
Drawings	20,000	40,000	15,000	Interest	10,000	8,000	6,000
Interest	1,000	2,000	750	Profit	30,000	20,000	20,000
Balance	29,000	–	10,250	Salary	10,000	–	–
				Balance	–	14,000	–
	50,000	42,000	26,000		50,000	42,000	26,000
Balance		14,000		Balance	29,000		10,250

James, Paul and Mary Balance Sheet as at

(Extract)

	£	£
Partners interests		Current assets
Capital accounts		Current account – Paul
James	100,000	14,000
Paul	80,000	
Mary	60,000	
	<u>240,000</u>	
Current accounts		
James	29,000	
Mary	<u>10,250</u>	
	<u>39,250</u>	
	279,250	

Study Unit 12

Limited Companies

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A. NATURE OF LIMITED COMPANIES

The most important branch of book-keeping is that which deals with limited companies. In spite of the size of this part of the subject there is nothing really difficult about it. Nearly all companies use the double-entry system of book-keeping with which you are already familiar. The only complications which arise are those resulting from the peculiar legal structures of companies, so that before we proceed to deal with the pure accounting we must spend a little time in considering these legal matters.

Definitions

A company is:

an association of persons banded together for some particular object, usually the carrying on of business with a view to profit.

Companies must be registered, and then they acquire a legal entity distinct from that of their members. As a legal entity a company can own property, incur debts, sue and be sued (even by one of its own members).

Under the **Companies Act 1985** there are two types of company limited by shares – public and private companies.

(a) **Public company**

A public company is a company limited by shares which must have at least two members and capital of not less than £50,000. No maximum number of members is prescribed. Public companies can offer their shares to the public. To distinguish the public company from the private company, the public company must end its name with “Public Limited Company” (PLC or plc).

(b) **Private company**

A private company is a limited company with at least two members which is not a public company. Private companies may not offer shares to the public.

The book-keeping is the same for both types of limited company.

Ownership

Ownership of a company lies with its shareholders. There are important implications arising from this.

- The company itself is a completely separate entity from the shareholders who own it. As a legal person, a company can own property, incur debts, sue and be sued. Unless the rules governing the formation and running of the company state otherwise, a shareholder may freely transfer or assign his shares to another without the company being wound up, as would be the case with a partnership, which would then require a new partnership agreement to be drawn up if the remaining partners were to carry on trading.
- Separation of ownership of a company is separate from its management. A shareholder, unless he is also a director, does not act as a manager nor as an agent of the company.

Limited liability

The principle of limited liability means that a member, having agreed to take shares in the company up to a certain amount and having paid the full price of those shares, is not responsible for any debts that the company may incur, even if it becomes insolvent within a few months of his becoming a member. Generally speaking, their liability will be limited to any part of the nominal value of shares which is unpaid.

This provides an absolute safeguard against the use of the private personal estate of a member to make good the company's debts (remember that this can happen in the case of an ordinary partnership).

Differences between companies and sole traders

The accounting differences between companies and sole traders may be summarised as follows:

Item	Sole Traders	Companies
Capital introduced:	Capital accounts	Issued share capital accounts
Profits withdrawn by proprietors:	Drawings	Dividends
Profits remaining in business:	Capital accounts	Reserves
Loans from outsiders:	Loan accounts	Debentures

We saw in the previous study unit the main differences between a partnership and a public limited company.

Formation of a Company

The establishment of a company – known as “incorporation” – is governed by law. The relevant statutes are the **Companies Act 1985**, as amended by the **Companies Act 1989**.

Once certain people have agreed to form a company and to set it in operation, they are known as **promoters**. The promoters draw up the Memorandum and Articles of Association and register them with the Registrar of Companies. The promoters of a public company need not be subscribers to the Memorandum.

Memorandum of Association

Section 1 of the Companies Act 1985 states that:

“Any two or more persons associated for a lawful purpose may, by subscribing their names to a memorandum of association and otherwise complying with the requirements of this Act in respect of registration, form an incorporated company, with or without limited liability.”

The Memorandum of Association specifies the **objects** of the company, i.e. to conduct business of a certain kind, partly for the information of those who do business with it. The Memorandum of Association in effect constitutes a contract between the company and the outside world and can only be altered under certain conditions.

The Memorandum of Association **must** contain the following clauses:

- (a) The name of the company.
- (b) That part of the United Kingdom where the registered office will be situated.
- (c) The objects of the company.
- (d) A statement (if a limited liability company) that the liability of its members is limited.
- (e) Details of the share capital which the company is authorised to issue.
- (f) A public company will also have a clause stating that the company is a public limited company.

Articles of Association

The Articles of Association constitute the internal regulations or by-laws of the company, dealing with such internal affairs as meetings and powers of directors, etc. and can be altered at any time if the members agree.

The main clauses contained in the Articles are:

- (a) A statement as to how far the provisions of the model set of Articles provided for companies apply.
- (b) Issue and forfeiture of shares procedures.
- (c) Procedures for holding and transferring shares.
- (d) Shareholders' voting power.
- (e) Procedure at meetings.
- (f) Appointment, qualification, remuneration and removal of directors.
- (g) Borrowing powers of the company.
- (h) Regulations as to dividend payment and reserve creation.

Certificate of Incorporation

When the capital duty, based on the amount of the authorised capital, has been paid, and the Registrar is satisfied that all the statutory requirements of company legislation have been complied with, he issues a Certificate of Incorporation which brings the company into existence as a legal being.

B. CAPITAL OF A COMPANY

Virtually every business must have capital subscribed by its proprietors to enable it to operate. In the case of a partnership, the partners contribute capital up to agreed amounts, which are credited to their accounts and shown as separate liabilities in the balance sheet.

A limited company obtains its capital, up to the amount it is authorised to issue, from its members. A public company, on coming into existence, issues a *prospectus* inviting the public to subscribe for *shares*. The prospectus advertises the objects and prospects of the company in the most tempting manner possible. It is then up to the public to decide whether they wish to make application for shares.

A private company is not allowed to issue a prospectus, and obtains its capital by means of personal introductions made by the promoters.

Once the capital has been obtained it is lumped together in one sum and credited to *share capital account*. This account does not show how many shares were subscribed by A or B; such information is given in the register of members, which is a *statutory book* that all companies must keep but which forms no part of the double-entry book-keeping.

Features of Shares

The capital of a company is divided into shares, e.g. 100,000 shares of 25p each. Members may subscribe for as many shares as they wish, provided that no more shares are issued than are provided for in the authorised capital and that no member holds less than one share.

Shares are the equivalent of the fixed capital of a partnership and have certain distinctive features:

- Once share capital has been introduced into the company, it generally cannot be repaid to the shareholders (although the shares may change hands). An exception to this is redeemable shares.
- Each share has a stated nominal (sometimes called par) value. This may be regarded as the lowest price at which the share can be issued.
- Share capital of a company may be divided into various classes and the Articles of Association, which constitute the internal regulations of the company, define the respective rights of the

various shares as regards, for example, entitlement to dividends or voting at company meetings. The Memorandum of Association specifies the objects of the company.

Classes of Share

Shares may be of different classes, carrying with them different rights as to dividends, i.e. as to participation in the profits of the company, return of capital on winding up and voting, etc. **The Companies Act 1985** states that members should be consulted on a variation in their rights. Consent must be in writing by holders of three-quarters of the nominal value, or by extraordinary resolution.

The main classes of shares are **ordinary** and **preference** and the latter are always assumed to be cumulative unless there is a statement in the Memorandum or Articles to the contrary. (“Cumulative” means that deficiencies in one year’s dividend have to be made up in succeeding years before payment is made to ordinary shareholders.)

Ordinary shares

The holder of ordinary shares in a limited company possesses no special right other than the ordinary right of every shareholder to participate in any available profits and to vote at general meetings. If no dividend is declared for a particular year, the holder of ordinary shares receives no return on his shares for that year. On the other hand, in a year of high profits he may receive a much higher rate of dividend than other classes of shareholders.

In some cases ordinary shares held are divided into two classes:

- (a) ***Preferred ordinary shares*** – These are entitled to a fixed dividend after the preference shares.
- (b) ***Deferred ordinary shares*** – These are entitled to a dividend after the preferred ordinary shares.

Preference shares

Holders of preference shares are entitled to a prior claim, usually at a fixed rate, on any profits available for dividend. Thus, when profits are small, preference shareholders must first receive their dividend at the fixed rate per cent, and any surplus may then be available for a dividend on the ordinary shares – the rate per cent depending, of course, on the amount of profits available. Thus, as long as a business is making a reasonable profit, a preference shareholder is sure of a fixed return each year on his investment. The holder of ordinary shares may receive a very low dividend in one year and a much higher one in another.

Preference shareholders usually have a prior claim in the event of the company being wound up.

Preference shares can also be divided into two classes:

- (a) ***Cumulative preference shares*** – When a company is unable to pay dividends on this type of preference share in any one year, or even in successive years, all arrears are allowed to accumulate and are payable out of future profits as they become available, before ordinary shareholders may receive a dividend.
- (b) ***Non-cumulative preference shares*** – If the company is unable to pay the fixed dividend in any one year, dividends on non-cumulative preference shares are not payable out of profits in future years.

Preference shareholders do not usually have the right to vote at general meetings, but may sometimes gain this when their dividends are in arrears.

Redeemable shares

The company may issue redeemable ordinary or preference shares (i.e. they are issued with the intention of being redeemed at some future date) only if it is so authorised by its Articles. In such cases the company repays the holders of such shares (provided they are fully paid) out of a special reserve fund of assets or from the proceeds of a new issue of shares which is expressly made for the purpose of redeeming the shares previously issued.

Participating preference shares

These are preference shares which are entitled to the usual dividend at the specified rate and, in addition, to participate in the remaining profits. As a general rule the participating preference shareholders take their “fixed” dividend and then the ordinary shareholders take their “fixed” dividend, and any balance remaining is shared by the participating preference and ordinary shareholders in specified proportions.

Deferred, founders’ or management shares

These normally rank last of all for dividends. Such shares are usually held by the original owner of a business which has been taken over by a company, and they often form part or even the whole of the purchase price. Dividends paid to holders of deferred shares may fluctuate considerably, but in prosperous times dividends to deferred shareholders may be at a high rate. This type of share is not very common nowadays.

Types of Capital

Share capital is represented by the money subscribed by the shareholders and this is divided into a number of classes.

Authorised, registered or nominal

These terms are synonymously used to describe the capital that is specified in the Memorandum of Association as being the maximum amount of capital which the company has power to issue. Authorised capital must be stated in detail (normally as a note) on the balance sheet. The authorised capital may be increased quite easily if the Articles allow it.

Issued or subscribed capital

It is quite a regular practice for companies to issue only part of their authorised capital. The term “issued capital” or “subscribed capital” is used to refer to the amount of capital which has actually been subscribed for. Capital falling under this heading will comprise all shares issued to the public for cash and those issued as fully paid-up to the vendors of a business.

Called-up capital

The payment of the amount due on each share is not always made in full on issue, but may be made in stages – for example, a specified amount on application and a further amount when the shares are actually allotted, with the balance in one or more instalments known as “calls”. Thus, payment for a £1 share may be made as follows:

- 25p on application,
- 25p on allotment,
- 25p on first call,
- 15p on second call,
- 10p on third and final call.

If a company does not require all the cash at once on shares issued, it may call up only what it needs. The portion of the subscribed capital which has actually been requested by the company is known as the called-up capital.

Note that a shareholder’s only liability in the event of the company’s liquidation is to pay up any portion of his shares which the company has not fully called up. If a shareholder has paid for his shares, he has no further liability.

Paid-up capital

When a company makes a call, some shareholders may default and may not pay the amount requested. Thus the amount actually paid up will not always be the same as the called-up capital. For example, suppose a company has called up 75p per share on its authorised capital of 20,000 £1 shares.

The called-up capital is £15,000, but if some shareholders have defaulted, the actual amount paid up may be only £14,500. In this case, the paid-up capital is £14,500, and the called-up capital £15,000.

Paid-up capital is therefore the amount paid on the called-up capital and the value of shares issued as paid to vendors.

Uncalled capital

The uncalled capital is the amount not yet requested on shares already issued and partly paid for by the public and vendors. In the above example of the company which has called up 75p per share on its authorised capital of 20,000 £1 shares, the uncalled capital is £5,000.

The Issue of Shares

Shares are issuable *at par* or *at a premium*.

When shares are issued:

- (a) at par, they are issued at their nominal value, i.e. a £1 share is issued for £1;
- (b) at a premium, they are priced at a figure above the nominal value, e.g. a £1 share is issued at, say, £1.13.

Shares may not be issued at a discount. Shares are payable either in full on application or by instalments; a prospectus will always state the manner in which payment is to be made. The following examples clearly illustrate the entries that would be made in both cases.

Bonus Shares

A company that has made a large profit may not wish to pay a large dividend, as such a course would greatly reduce the bank balance. Also (assuming there is a Stock Exchange quotation for the shares), a high dividend would cause the Stock Exchange value of the company's shares to soar – which may not be desired. In these and other circumstances, a company may decide to capitalise its profits, or at least a portion of them, by the issue of fully paid bonus shares, or by utilising the profits to pay up the uncalled portion of the capital on behalf of the shareholders, instead of paying a dividend. The authority for either of these courses, must, of course, be included in the Memorandum of Association.

On the issue of bonus shares, each shareholder receives bonus shares in a proportion relative to his holding of original shares, instead of receiving a dividend at a certain rate per cent.

Rights Issue

The cost of making new share issues can be high, and the rights issue is a means of raising new long-term capital from existing shareholders. The company circularises the existing shareholders, informing them of the new capital to be raised, and stating how many shares they are entitled to apply for.

The price at which the shares are issued will usually be an attractive one compared with the existing market price – why else would an investor buy from the company direct when he or she could purchase from the market?

C. OTHER SOURCES OF COMPANY FINANCE

Apart from share capital, the remaining sources of finance of a company are liabilities of the company. The main such source is the issue of debentures.

Debentures

A debenture is a written acknowledgment of a loan to a company, given under the company's seal, which carries a fixed rate of interest.

Debentures are *not* part of the capital of a company – they are only a particular form of loan. Interest payable to debenture holders must be paid as a matter of right and is therefore classified as *loan interest*, a financial expense, in the profit and loss account. A shareholder, on the other hand, is only paid a dividend on his investment if the company makes a profit, and such a dividend, if paid, is an appropriation of profit.

Separate accounts must always be opened for debentures and they are never grouped with shares in the balance sheet.

Types of debenture

Debentures are divided into a number of different classes, the main one being as follows.

(a) ***Simple or naked debentures***

These are debentures for which no security has been arranged as regards payment of interest or repayment of principal.

(b) ***Mortgage or fully secured debentures***

These are debentures secured by a specific mortgage of certain fixed assets of the company. In such cases, if there is a large number of debenture holders, the mortgage deed is executed by the company in favour of trustees, who act on behalf of all the debenture holders under the terms of a trust deed. There may be several classes of mortgage debenture, the first ranking in priority to the second as regards payment of interest and of principal, and so on.

(c) ***Floating debentures***

These are secured by a ***floating charge*** on the property of the company. This charge permits the company to deal with any of its assets in the ordinary course of its business, unless and until the charge becomes “fixed” or “crystallised”.

An example should make clear the difference between a mortgage, which is a “fixed charge” over some specified asset, and a debenture which is secured by a “floating charge”. Suppose a company has factories in London, Manchester and Glasgow. The company may borrow money by issuing debentures with a fixed charge over the Glasgow factory. As long as the loan remains unpaid, the company’s use of the Glasgow factory is restricted by the mortgage. The company might wish to sell some of the buildings but the charge on the property as a whole would be a hindrance.

On the other hand, if it issues floating debentures, then there is no charge on any specific part of the assets of the company and, unless and until the company becomes insolvent, there is no restriction on the company acting freely in connection with any of its property.

Rights of debenture holders

- (a) They are entitled to payment of interest at the agreed rate.
- (b) They are entitled to be repaid on expiry of the terms of the debenture as fixed by deed.
- (c) In the event of the company failing to pay the interest due to them or should they have reason to suppose that the assets upon which their loan is secured are in jeopardy, they may cause a receiver to be appointed. The receiver has power to sell a company’s assets in order to satisfy all claims of the debenture holders.

Differences between shareholders and debenture holders

The differences can most clearly be shown in tabular form as set out below.

Shareholder	Debenture Holder
(a) In effect, one of the proprietors, i.e. an inside person	(a) A loan creditor and therefore an outside person.
(b) Participates in the profits of the company, receiving a dividend on his investment. (Shareholders receive dividends which are debited to the appropriation account.)	(b) Secures interest at a fixed rate on his loan to the company, notwithstanding that the company makes no profits. (N.B. Debenture interest must always be debited to the profit and loss account and not to the appropriation account.)
(c) Not entitled to receive repayment of money invested (with certain exceptions) unless the company is wound up.	(c) Entitled to be repaid on expiry of the term of debentures as fixed by deed, unless they are irredeemable debentures.

Other Loan Capital

Various other categories of loan capital are usually described as “loan stock”. These may be secured or unsecured. Unsecured loan stock, for instance, would rank equally with the other unsecured liabilities such as trade creditors on a liquidation.

Convertible loan stock has the characteristics of both loan stock and ordinary shares. On issue the characteristics are of loan stock, but the issue conditions state that at certain dates in the future the holders may, if they so wish, convert their stock into a given number of ordinary shares.

D. COMPANY PROFIT AND LOSS ACCOUNT

A limited company may prepare its final accounts for presentation to either directors or shareholders. Although company law does not dictate specific formats for internal final accounts, it is normal practice to follow the presentation specified in company law for published accounts. Internal final accounts do, however, normally contain much more detail than published accounts.

(We shall examine the specific requirements for the published final accounts of a limited company in the next unit.)

The trading account of a limited company is basically similar to that of a sole trader. A company profit and loss account, however, has various distinctive features, which we shall now consider.

Expenses

In general, the majority of expenses charged to a company’s profit and loss account are similar to those for a sole trader, e.g. wages and salaries, rent and rates. There are, however, two items of expense which are peculiar to limited companies:

- **Directors’ remuneration**

Directors are employees of the company (even if they are also shareholders) and as such the remuneration they receive in the form of salaries and fees is part of the running expenses of the business and hence is charged to the profit and loss account as an expense.

- **Debenture interest**

Debentures are loans to a company. The interest payable on the loan is an expense to the company and is payable whether profits are made or not. So debenture interest is charged as an expense in the company profit and loss account.

Taxation

No mention of taxation of profits is made in the final accounts of sole traders and partnerships. This is because they, the owners of the business, are liable personally for the tax on their share of the profits. However, in the case of a company, the owners (shareholders) are much more numerous and it would be very difficult to collect tax direct from them. For this reason, the company is liable to account for tax on its profits, and this is called **corporation tax**.

Corporation tax for a financial year is not due to be paid immediately, but nine months or more after the year-end. Thus the figure for corporation tax shown in the final accounts is a **provision for tax**, based on the profits of the year. The accounting entries are:

Debit Profit and loss account

Credit Corporation tax account (shown as a current liability in the balance sheet)

In the next year, when the tax is paid, the entry would be:

Debit Corporation tax account

Credit Bank account

The deduction for corporation tax is shown in the profit and loss account as follows:

	£
Gross profit	X
<i>less</i> Expenses	X
	—
Profit on ordinary activities before taxation	X
<i>less</i> Corporation tax on profit on ordinary activities	X
	—
Profit on ordinary activities after taxation	X

Appropriations of Profit

Once the net profit for the year after taxation has been computed, the company must decide how much, if any, of this profit is to be appropriated. In the final accounts of limited companies you will find an item which you have not previously encountered – the balance of undistributed profits brought forward from last year. This arises because the company can choose, to an extent, the level of appropriations from profit which it wishes to make, and leave the balance of undistributed profits to be carried forward from year to year.

Thus the profit and loss appropriation account takes the following general form:

	£
Profit on ordinary activities after taxation	X
Undistributed profits b/f from previous year	X
	X
<i>less</i> Appropriations	X
Undistributed profits carried forward to next year	X

This is different from the treatment of net profit for sole traders and partnerships, where the whole of the net profit is credited to the capital or current accounts respectively.

The following items are the main specific appropriations from net profit after tax:

Transfers to reserves

These are amounts which the directors have decided need to be set aside and not be available for dividends to shareholders in that year. A reserve may be specific, such as a fixed asset replacement reserve, or it may be a general reserve.

An example is the **plant replacement reserve**. Under conventional historic cost accounting, the purpose of depreciation is to allocate the original or historic cost of a fixed asset over its useful life. The effect of the depreciation charge in the profit and loss account is to reduce the profit available for distribution as a dividend. Hence funds which might otherwise be distributed by way of a dividend to the shareholders are kept within the company.

At the end of the useful life of the asset, the company has accumulated a provision for depreciation which, provided the cost of the asset has not increased, will be sufficient to finance replacement of the asset. In inflationary times, however, the cost of replacing plant will be far greater than its original cost and consequently the accumulated depreciation provision will be insufficient to finance replacement. Setting up a plant replacement reserve will help this problem as each year profit available for distribution is reduced by a further amount (over and above the historic cost depreciation) by the entry:

Debit Profit and loss appropriation account
 Credit Plant replacement reserve

Note the different treatment of the **provision** for depreciation, which is a **charge** against the profit and loss account, and the transfer to a **replacement reserve**, which is an **appropriation** of profit.

Dividends

The profit made by a sole trader belongs to him absolutely. It is shown on his profit and loss account and is credited to his capital account.

The profit of a partnership belongs to the partners. It is shown in the appropriation section of their profit and loss account and is credited, in profit-sharing ratios, to their current accounts.

There is a marked difference when we come to deal with the profit of a limited company. A company is an entity legally distinct from its members and any profit made by the company does **not** belong to the members. They may be entitled to share in the profits (or in part of the profits) when a dividend is declared, but there is no legal compulsion on a company at any time to distribute profits earned.

However, if the directors decide that some profit will be distributed to shareholders, then an amount of **dividend** is proposed. Dividend is the portion of a limited company's profits which is distributed to shareholders. The shareholders cannot propose a higher dividend for themselves than that already proposed by the directors. (They can propose a lower dividend be paid, but this is very rare.)

The directors' decision on the amount proposed as dividends is a very complex one. Many factors will need to be taken into account, including prior transfers to reserves, effects of taxation, government directives, availability of bank balances to pay the dividends, and the possibility of takeover bids.

You should be clear about the distinction between dividends, which are an **appropriation** of profits and can thus only be paid when there are profits, and interest payable on debentures or loans, which is a **charge** against profits and must be paid even if a loss is made.

We will now consider an example of how the proposed dividends on shareholdings are calculated.

Example

John Smith plc has an issued and fully-paid share capital of:

20,000 5% preference shares of £1 each

40,000 ordinary shares of £1 each

The net profit after taxation for the year ended 31 December was £45,000. The directors have proposed to pay a dividend on the preference shares and a 10% dividend on ordinary shares for the year. You are required to calculate the amounts to be included in the profit and loss appropriation account.

Calculation must be based on *issued* share capital, not authorised.

Preference shares:

$$\text{Dividend to be paid} = 5\% \times (20,000 \times £1) = \frac{5}{100} \times £20,000 = £1,000$$

Ordinary shares:

$$\text{Proposed dividend} = 10\% \times (40,000 \times £1) = \frac{10}{100} \times £40,000 = £4,000$$

Some companies adopt the practice of declaring and paying an **interim** dividend during the year and then proposing a final dividend at the year-end. Both interim and proposed final dividends are appropriations of profit and should be included in the profit and loss appropriation account. However, they are treated differently in the balance sheet. Proposed dividends have not been paid at the end of the financial year and must be included as current liabilities in the balance sheet. Interim dividends are paid during the year and are therefore not outstanding at the year-end.

Example

Prepare the profit and loss and appropriation account of Brunt Ltd from the information below:

- (a) The company generated a gross profit of £73,500 on which it paid expenses of £45,800.
- (b) Corporation tax was charged on profit on ordinary activities before taxation at 20%.
- (c) The company transferred £6,000 to general reserve.
- (d) Brunt Ltd paid dividends of £5,000 during the year (amounting to a 2½% dividend on issued ordinary shares). The directors proposed a dividend of 5% at the end of the year. No changes in share capital occurred during the year.
- (e) The unappropriated profits at the start of the year amounted to £63,450.

Brunt Ltd
Profit and Loss and Appropriation Account for the year ended

	£	£
Gross profit		75,300
Expenses		<u>45,800</u>
Profit on ordinary activities before taxation		29,500
Tax on profit on ordinary activities		<u>5,900</u>
Profit on ordinary activities after taxation		23,600
Unappropriated profit b/f		<u>63,450</u>
		87,050
Transfer to general reserve		<u>6,000</u>
		81,050
Dividends: paid	5,000	
proposed	<u>10,000</u>	<u>15,000</u>
		<u>66,050</u>

E. COMPANY BALANCE SHEET

There are many similarities between the balance sheets of sole traders, partnerships and companies. The following example illustrates some differences in terminology and in the capital section.

(Note: WDV = written down value, or net value)

Ash Limited
Balance Sheet as at 31 December Year 2

	£	£	£
Fixed Assets	<i>Cost</i>	<i>Dep'n</i>	<i>WDV</i>
Freehold land and buildings	37,000	1,850	35,150
Motor vans	4,950	3,315	1,635
	41,950	5,165	36,785
Current Assets			
Stock		8,800	
Debtors		12,618	
Bank		11,750	
Cash in hand		46	
Prepayment		112	
		33,326	
Creditors: Amounts Falling Due Within One Year			
Creditors	10,370		
Proposed dividend	4,000	14,370	
		18,956	
Net current assets			18,956
Total assets less current liabilities			55,741
Capital and Reserves			
40,000 ordinary shares of £1 each			40,000
Share premium account			3,600
General reserve			5,000
Profit and loss account			7,141
			55,741

The marshalling and grouping of items in the balance sheet is of great importance.

Capital

(a) Authorised capital

Full particulars must be given of the classes and numbers of shares the company has power to issue. It is usual to include this information as a note to the balance sheet.

(b) Issued capital

Full details must be given of the classes and numbers of shares issued. Shares will either be shown as fully paid or, if not fully paid, the amount called up on each class of share should be shown. Any calls in arrears or calls in advance should be shown separately. Details of issued

share capital are normally shown as a note to the balance sheet, although calls in arrears are included within the balance sheet as an asset.

Reserves

Reserves are created for different purposes. Some reserves are not legally allowed to be used for distribution as dividend, but others could be used in future years to provide a dividend if required. A company needs to retain funds within the business to provide for working capital and to ensure future expansion will be possible. It is not usual, therefore, for all profits made in a year to be distributed to shareholders by way of dividends.

There are several different types of reserves and these must be shown separately in the balance sheet. Three types of reserve *cannot*, by law, *be used to distribute* by way of a dividend. These are:

(a) Share premium account

A company may issue shares at a premium. The premium is the difference between the price paid for a share and the nominal value of the share. The *nominal value* will be credited to the *share capital account* and the *premium* will be credited to the *share premium account*. It is, in effect, a part of share capital.

For example, if a company has shares with a nominal value of £1 and it issues new shares for £1.50 each, the share premium is 50p per share.

(b) Capital redemption reserve

This arises when shares are redeemed or purchased other than out of the proceeds of a new share issue.

(c) Revaluation reserve

This arises when the directors wish to show the increased value of an asset in the balance sheet. The asset account is debited with the increase and revaluation reserve is credited with the increase. It is most commonly used for sums arising from the valuation of assets in current cost terms, after allowing for depreciation.

Other reserves which can, if so required, be used to pay dividends, include the general reserve, fixed asset replacement reserves and the unappropriated balance on the profit and loss account. In general it is the latter which is used to make a distribution of profits by way of dividend. It is usual practice to show movements in reserves during the year as a note to the balance sheet.

Example

Prepare the balance sheet (extract) for capital and reserves from the following information. State where items not included in capital and reserves would appear in the balance sheet.

	£
Authorised share capital	
60,000 50p ordinary shares	30,000
Issued share capital	
50,000 50p ordinary shares	25,000
Ordinary share dividend proposed	1,250
Share premium account	5,000
General reserve	8,000
Profit and loss account	7,000

Balance Sheet as at
(Extract)

	£
Authorised share capital	
60,000 50p ordinary shares	<u>30,000</u>
Issued share capital	
50,000 50p ordinary shares	25,000
Share premium account	5,000
General reserve	8,000
Profit and loss account	<u>7,000</u>
	<u>45,000</u>

The authorised capital may, alternatively, appear in the notes to the accounts. The ordinary share dividend proposed is a short-term liability which is included under Creditors: amounts falling due within one year.

Practice Questions

1. Kin Ltd's balance sheet (extract) for capital and reserves at the start of the year was:

	<i>£</i>
Called-up share capital	
30,000 Ordinary £1 shares	30,000
General reserve	8,000
Profit and loss account	<u>18,400</u>
	<u>56,400</u>

The appropriation account for the subsequent year was as follows:

Appropriation Account for the year ended

	<i>£</i>
Profit on ordinary activities before taxation	74,300
Tax on profit on ordinary activities	<u>10,200</u>
Profit on ordinary activities after taxation	64,100
Unappropriated profit b/f	<u>18,400</u>
	82,500
Transfer to general reserve	<u>10,000</u>
	72,500
Dividends – paid and proposed	<u>3,000</u>
Unappropriated profit c/f	<u>69,500</u>

There were no issues or redemptions of shares during the year.

Prepare the balance sheet (extract) for capital and reserves at the end of the year.

2. This question will help you clarify the differences (and similarities) between types of business. You are given three parallel trial balances and sets of information for:

- (a) A sole trader
- (b) A partnership
- (c) A company

The following trial balance relates to the financial year of a business in three different forms.

Trial Balance as at.....

	Sole Trader		Partnership		Company	
	Dr	Cr	Dr	Cr	Dr	Cr
	£	£	£	£	£	£
Sales		107,000		107,000		107,000
Purchases	69,000		69,000		69,000	
Stock	5,000		5,000		5,000	
Heat and light	7,000		7,000		7,000	
Rent and rates	8,000		8,000		8,000	
Sundry expenses	6,000		6,000		6,000	
Director's remuneration					12,000	
Net fixed assets	60,000		60,000		60,000	
Debtors and creditors	9,000	4,000	9,000	4,000	9,000	4,000
Bank	2,000		2,000		2,000	
Drawings	12,000					
Drawings: A			6,000			
B			6,000			
Capital		67,000				
Capital account: A				28,000		
B				28,000		
Current account: A				5,000		
B				6,000		
Share capital £1 shares						40,000
Profit and loss account						27,000
	178,000	178,000	178,000	178,000	178,000	178,000

- (a) Prepare a trading and profit and loss account for the year and a balance sheet as at the end of the year for a sole trader.

Take the following into account:

- (i) Rent and rates prepaid £1,000.
- (ii) Heat and light accrued £2,000.
- (iii) Closing stock £4,000.

- (b) Prepare a trading, profit and loss and appropriation account for the year and a balance sheet as at the end of the year for a partnership.

Take the following into account:

- (i) Rent and rates prepaid £1,000.
- (ii) Heat and light accrued £2,000.
- (iii) Closing stock £4,000.
- (iv) Profits are shared equally.

- (c) Prepare a trading, profit and loss and appropriation account for the year and a balance sheet as at the end of the year for a company.

Take the following into account:

- (i) Rent and rates prepaid £1,000.
- (ii) Heat and light accrued £2,000.
- (iii) Closing stock £4,000.
- (iv) Corporation tax of £1,000 is to be provided for.
- (v) No dividends have been paid during the year. The directors propose an end-of-year dividend of 5%.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

1.

Kin Ltd
Balance Sheet as at
(Extract)

	£
Called-up share capital	
30,000 Ordinary £1 shares	30,000
General reserve	18,000
Profit and loss account	69,500
	<hr/>
	117,500

2. (a)

Sole Trader
Trading and Profit and Loss Account for the year ended

	£	£
Sales		107,000
Opening stock	5,000	
Purchases	69,000	
	<u>74,000</u>	
<i>less</i> Closing stock	4,000	<u>70,000</u>
Gross profit		37,000
Heat and light (£7,000 + £2,000)	9,000	
Rent and rates (£8,000 – £1,000)	7,000	
Sundry expenses	6,000	<u>22,000</u>
Net profit		<u>15,000</u>

Balance Sheet as at.....

	£	£	£
Net Fixed Assets			60,000
Current Assets			
Stock		4,000	
Debtors		9,000	
Bank		2,000	
Prepayment		<u>1,000</u>	
		16,000	
Current Liabilities			
Creditors	4,000		
Accruals	<u>2,000</u>	<u>6,000</u>	<u>10,000</u>
			<u>70,000</u>
Capital			67,000
Net profit			<u>15,000</u>
			82,000
<i>less</i> Drawings			<u>12,000</u>
			<u>70,000</u>

(b)

A and B**Trading, Profit and Loss and Appropriation Account for the year ended**

	£	£
Sales		107,000
Opening stock	5,000	
Purchases	69,000	
	<u>74,000</u>	
<i>less</i> Closing stock	<u>4,000</u>	<u>70,000</u>
Gross profit		37,000
Heat and light (£7,000 + £2,000)	9,000	
Rent and rates (£8,000 – £1,000)	7,000	
Sundry expenses	<u>6,000</u>	<u>22,000</u>
Net profit		<u>15,000</u>
Profit share: A	7,500	
B	7,500	15,000

Balance Sheet as at

	£	£	£
Net Fixed Assets			60,000
Current Assets			
Stock		4,000	
Debtors		9,000	
Bank		2,000	
Prepayment		<u>1,000</u>	
		16,000	
Current Liabilities			
Creditors	4,000		
Accruals	<u>2,000</u>	<u>6,000</u>	<u>10,000</u>
			<u>70,000</u>
	A	B	
Capital account	<u>28,000</u>	<u>28,000</u>	56,000
Current account	5,000	6,000	
Profit share	<u>7,500</u>	<u>7,500</u>	
	12,500	13,500	
<i>less</i> Drawings	<u>6,000</u>	<u>6,000</u>	
	<u>6,500</u>	<u>7,500</u>	<u>14,000</u>
			70,000

(c)

*Company Ltd.**Trading, Profit and Loss and Appropriation Account for the year ended*

	£	£
Sales		107,000
Opening stock	5,000	
Purchases	69,000	
	<u>74,000</u>	
<i>less</i> Closing stock	4,000	<u>70,000</u>
Gross profit		37,000
Heat and light (£7,000 + £2,000)	9,000	
Rent and rates (£8,000 – £1,000)	7,000	
Sundry expenses	6,000	
Director's remuneration	12,000	<u>34,000</u>
Profit on ordinary activities before taxation		3,000
Tax on profit on ordinary activities		<u>1,000</u>
Profit on ordinary activities after taxation		2,000
Unappropriated profit b/f		<u>27,000</u>
		29,000
Proposed dividend		<u>2,000</u>
Unappropriated profit c/f		<u>27,000</u>

Company Ltd.
Balance Sheet as at

	£	£	£
Net Fixed Assets			60,000
Current Assets			
Stock		4,000	
Debtors		9,000	
Bank		2,000	
Prepayment		1,000	
		16,000	
Creditors: amounts falling due within one year			
Creditors	4,000		
Accruals	2,000		
Corporation tax	1,000		
Proposed dividend	2,000	9,000	
Net Current Assets			7,000
Total Assets less Current Liabilities			67,000
Capital and Reserves			
Called-up share capital:			
40,000 £1 Ordinary shares			40,000
Profit and loss account			27,000
			67,000

Study Unit 13

The Published Accounts of Limited Companies

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A. THE LAW AND COMPANY ACCOUNTS

You will appreciate, from your work in this course so far, that companies are a special type of business. The benefits of limited liability are clear. However, legislators are keen to see that the benefits of limited liability are not wrongly exploited. Hence, there are many regulations governing the life and actions of companies.

General Requirements

When a company draws up its own final accounts for internal use it may use any format it likes because there are no rules to prevent such accounts from being drafted in the manner most suitable for management. However, its **published accounts** must be in accordance with the formats laid down in the Companies Act 1985, as updated by the Companies Act 1989.

Companies must prepare accounts each year. The 1985 Act gives companies the choice of **two** alternative formats for the balance sheet and **four** for the profit and loss account. When a format has been chosen, it must be followed in each successive year and the items must be listed in the order set out in the schedule to the Act. Any deviation from this shall be disclosed.

Every profit and loss account of a company must show the amount of the company's profit and loss **on ordinary activities before taxation**. Furthermore, every profit and loss account must show separately:

- amounts set aside (or proposed to be set aside) to, or withdrawn from, reserves
- the aggregate amount of any dividend paid and proposed.

Corresponding amounts for the previous financial year must be disclosed.

A company must lay before its shareholders in general meeting a balance sheet and profit and loss account at least once in every calendar year. The balance sheet must be signed on behalf of the board by two directors and have attached to it a directors' report and auditors' report. The Companies Act 1989 requires the directors' report to be approved by the board of directors and signed on their behalf by one director. The balance sheet of a banking company must be signed by the secretary or manager and by at least three directors.

Any member or debenture holder is entitled to be supplied, within seven days of demand, with a copy of the last balance sheet, and documents required to be attached, free of charge.

This ensures that the financial situation of a company can be clearly seen.

Small and Medium-Sized Companies

Small and medium-sized companies are permitted to file modified financial statements. Section 248 of the Companies Act 1985 defines a company as small or medium-sized if it satisfies **two or more** of the qualifying conditions in (a) or (b) below, in respect of any financial year of the company **and** the financial year immediately preceding that year.

(a) **Small company**

From 16 November 1992 the limits are:

- The amount of its turnover must not exceed £2.8m.
- Its balance sheet total must not exceed £1.4m. (Balance sheet total means the total assets before deduction of any liabilities.)
- The average number of persons employed by the company in the financial year in question must not exceed 50.

(b) Medium-sized company

- The amount of its turnover must not exceed £11.2m.
- Its balance sheet total must not exceed £5.6m.
- The average number of persons employed by the company in the financial year in question must not exceed 250.

The modified financial statements (now termed “filing exemptions”) required for such companies are as follows:

To be forwarded to Registrar	Small Company	Medium Company
Balance sheet	Abridged	Full
Profit and loss account	None	Abridged
Directors’ report	None	Full
Notes to accounts	Reduced	No need to disclose turnover or margin of gross profit
Information on directors’ and employees’ salaries	None	Full disclosure

Note that these concessions relate only to documents filed with the Registrar. They do *not* affect the information which must be given to members of the company – and thus they actually involve more work for the company in preparing two sets of financial statements. However, less information is available to the world at large than can be seen in larger companies’ accounts.

If directors file such modified statements with the Registrar, they must include a special auditors’ report which:

- States that the auditors consider that the requirements for exemption from filing full accounts are satisfied.
- Reproduces the full text of the auditors’ report on the financial statements issued to members of the company.

Directors’ Report

A report by the directors must be attached to every balance sheet laid before a company in general meeting (S.235, CA 1985). It must contain the following:

- (a) A fair review of the development of the business of the company and its subsidiaries during the financial year ended with the balance sheet date, and of their position at the end of it.
- (b) Details of the dividends proposed.
- (c) Details of transfers to reserves.
- (d) Details of the principal activities of the company and subsidiaries, and any significant changes during the period.
- (e) Any significant changes during the period in the fixed assets of the company or subsidiaries.
- (f) Any significant differences between the market values and book values of land and buildings or any of the company’s subsidiaries.
- (g) The following details of the company or subsidiaries:
 - Research and development activities.

- Likely future business developments.
 - Any important events occurring since the financial year-end.
- (h) Details of the interests in group shares or debentures as they appear in the register of directors' interests at:
- the start of the period, or the date of the director's appointment, if later, and
 - the end of the period.

This information must be given for each director at the end of the financial year, either here or in the notes to the accounts. A nil statement must be made, where applicable.

- (i) Details of any political and charitable contributions over £300 in value in total.
- (j) If the employees' average number is more than 250 during the financial year, details of the policy regarding:
- Employment of the disabled
 - Continued employment and training of those who are disabled during employment in the company
 - Training, promotion and career development of the disabled.
- (k) Full details of any disposals or purchase of a company's own shares.

Auditors' Report

The auditors must make a report to the members on the accounts examined by them and on every balance sheet and profit and loss account laid before the company in general meeting (S.236, CA 1985). The report – which may be drawn up at some future time – must state:

- (a) Whether, in their opinion, the company's balance sheet and profit and loss account have been properly prepared in accordance with the law.
- (b) Whether, in their opinion, a true and fair view is given:
- In the case of the balance sheet, of the state of the company's affairs at the end of its financial year.
 - In the case of the profit and loss account, of the company's profit or loss for its financial year.
 - In the case of group accounts, of the state of affairs and profit or loss of the company and its subsidiaries, so far as concerns members of the company.

The Accounting Standards Committee sought legal advice concerning the definition of "true and fair", and a summary of Counsel's opinion is as follows:

- "True and fair" evolves as times change.
- The legal requirements, such as the formats contained in the Companies Act 1985, are guidelines offered by Parliament at the time of drafting the legislation. It is conceivable that they could be superseded by accounting practice in order to give a true and fair view – e.g. if an SSAP or FRS were to say that historical cost accounting would not give a true and fair view in times of high inflation, and recommended instead current cost accounting or some other alternative, then the courts might well accept the fundamentally altered true and fair view.
- SSAPs and FRSs are documents embodying seriously and deeply considered accounting matters which are accepted by the profession. Although the courts may disregard their terms, their requirements are likely to indicate a "true and fair" view of the handling of specific accounting problems, and they are likely to be used by the courts as influential guidelines. However, SSAPs/FRSs evolve, and it must be accepted that what is "true and

fair” when one is originally written may not be considered “true and fair” at some future date. Accurate and comprehensive disclosure of information within acceptable limits is important.

- Over time, the meaning of “true and fair” will remain the same but the content will differ.

It is the duty of the auditors to carry out such investigations as will enable them to form an opinion as to whether:

- (a) Proper books of account have been kept by the company, and proper returns adequate for audit have been received from branches not visited by them.
- (b) The company’s final accounts are in agreement with these books and returns.

If their opinion is that proper books have not been kept, or adequate returns have not been received, or the final accounts do not agree with them, they must state this in their report.

The report of the auditors must be read before the company in general meeting.

You should note that auditors are also bound to consider – and report, if necessary – whether the accounts of the company comply with standard accounting practice. Normally an auditors’ report is very short, stating that, in their view, the accounts have been properly prepared, give a true and fair view of the profit or loss, etc. and comply with the Companies Act and with standard accounting practice. The report can then be qualified by stating the respects in which the accounts do not conform to the requirements.

B. THE BALANCE SHEET

Disclosure of Accounting Policies

Limited companies must publish their financial statements every year. The information provided to shareholders (and other interested parties) would be of little value were there no explanation of the way in which the figures had been compiled.

Statement of Standard Accounting Practice (SSAP) 2 entitled *The Disclosure of Accounting Policies* was issued by the Accounting Standards Committee (ASC) in November 1971 to address this area – namely a company’s accounting policies.

SSAP 2 achieves three things:

- It defines the fundamental concepts of accounting.
- It recognises that these concepts may be applied in a variety of ways in any given set of circumstances and defines the methods of applying accounting bases.
- It requires every entity to adopt one specific basis in each relevant area as its accounting policy and to disclose such policies by way of a note in its financial statements.

There are four fundamental accounting concepts within SSAP 2 and these are as follows:

- (a) ***Going concern concept*** – in which the entity will continue in existence for the foreseeable future, with no intention or necessity to liquidate or significantly curtail its scale of operations.
- (b) ***Accruals concept*** – in which revenue costs are recognised as they are earned or incurred, not as cash when it is received or paid. They are then matched with one another, as far as a relationship can be determined, in order to arrive at a resulting profit or loss.
- (c) ***Consistency concept*** – which recognises the need for consistency of the accounting treatment of like items within each accounting period and from one period to another.
- (d) ***Prudence concept*** – which requires revenue and profits to be recognised only when realised into cash or other assets whose ultimate cash realisation is reasonably certain. Provision is to be made for all known liabilities (expenses and losses) whether such amounts can be

determined with accuracy or are the best estimate based on the circumstances prevailing at the time the financial statements are prepared.

The Standard does **not** require disclosure of these four concepts, but an entity is assumed to be applying them. Disclosure is only required to the extent that this may not be the case.

Accounting Bases

The fundamentals concept and the accruals concept may be applied in various ways. For example, there are several valid methods for calculating depreciation. A company may make its choice from the available methods. Its choice will become its accounting policy in that area for consistent application.

Differing accounting bases occur, for example, in the areas of:

- Depreciation of fixed assets
- Valuation of stock and work in progress
- Leasing and hire purchase transactions.

Form of Presentation – Format 1

The Companies Act provides two possible balance sheet formats but we shall only consider Format 1 here. This is the vertical presentation used by most United Kingdom companies.

The items to be included, where relevant, and their order in the balance sheet are as follows. The figures in brackets refer to the notes which follow. We shall also go on to consider further general requirements.

A. Called-up share capital not paid (a)

B. Fixed assets

I Intangible assets

- 1 Development costs
- 2 Concessions, patents, licences, trademarks and similar rights and assets (b)
- 3 Goodwill (c)
- 4 Payments on account

II Tangible assets

- 1 Land and buildings
- 2 Plant and machinery
- 3 Fixtures, fittings, tools and equipment
- 4 Payments on account and assets in course of construction

III Investments

- 1 Shares in group undertakings
- 2 Loans to group undertakings
- 3 Participating interests
- 4 Loans to undertakings in which the company has a participating interest
- 5 Other investments other than loans
- 6 Other loans
- 7 Own shares (d)

C. Current assets

I Stocks

- 1 Raw materials and consumables
- 2 Work in progress
- 3 Finished goods and goods for resale
- 4 Payments on account

II Debtors (*e*)

- 1 Trade debtors
- 2 Amounts owed by group undertakings
- 3 Amounts owed by undertakings in which the company has a participating interest
- 4 Other debtors
- 5 Called-up share capital not paid (*a*)
- 6 Prepayments and accrued income (*f*)

III Investments

- 1 Shares in group undertakings
- 2 Own shares (*d*)
- 3 Other investments

IV Cash at bank and in hand

D. Prepayments and accrued income (*f*)**E. Creditors: amounts falling due within one year**

- 1 Debenture loans (*g*)
- 2 Bank loans and overdrafts
- 3 Payments received on account (*h*)
- 4 Trade creditors
- 5 Bills of exchange payable
- 6 Amounts owed to group undertakings
- 7 Amounts owed to undertakings in which the company has a participating interest
- 8 Other creditors including taxation and social security (*i*)
- 9 Accruals and deferred income (*j*)

F. Net current assets (liabilities) (*k*)**G. Total assets less current liabilities****H. Creditors: amounts falling due after more than one year**

- 1 Debenture loans (*g*)
- 2 Bank loans and overdrafts
- 3 Payments received on account (*h*)
- 4 Trade creditors
- 5 Bills of exchange payable

- 6 Amounts owed to group undertakings
- 7 Amounts owed to undertakings in which the company has a participating interest
- 8 Other creditors including taxation and social security (*i*)
- 9 Accruals and deferred income (*j*)

I. Provisions for liabilities and charges

- 1 Pensions and similar obligations
- 2 Taxation, including deferred taxation
- 3 Other provisions

J. Accruals and deferred income (*j*)

K. Capital and reserves

- I Called-up share capital (*l*)
- II Share premium account
- III Revaluation reserve
- IV Other reserves
 - 1 Capital redemption reserve
 - 2 Reserve for own shares
 - 3 Reserves provided for by the articles of association
 - 4 Other reserves
- V Profit and loss account

Notes on the Format

(a) Called-up share capital not paid (Items A and C.II.5)

This item may be shown in either of the two positions given in the format.

(b) Concessions, patents, licences, trademarks and similar rights and assets (Item B.I.2)

Amounts in respect of assets shall only be included in a company's balance sheet under this item if either:

- (i) the assets were acquired for valuable consideration and are not required to be shown under goodwill; or
- (ii) the assets in question were created by the company itself.

(c) Goodwill (Item B.I.3)

Amounts representing goodwill should only be included to the extent that the goodwill was acquired for valuable consideration.

(d) Own shares (Items B.III.7 and C.III.2)

The nominal value of the shares held must be shown separately.

(e) Debtors (Items C.II.1-6)

The amount falling due within one year must be shown separately for each item shown under debtors.

(f) Prepayments and accrued income (Items C.II.6 and D)

This item may be shown in either of the two positions given.

(g) Debenture loans (Items E.1 and H.1)

The amount of any convertible loans must be shown separately.

(h) Payments received on account (Items E.3 and H.3)

Payments received on account of orders must be shown for each of these items insofar as they are not shown as deductions from stocks.

(i) Other creditors including taxation and social security (Items E.8 and H.8)

The amount for creditors in respect of taxation and social security must be shown separately from the amount for other creditors.

(j) Accruals and deferred income (Items E.9, H.9 and J)

The two positions given for this item at E.9 and H.9 are an alternative to the position at J, but if the item is not shown in a position corresponding to that at J it may be shown in either or both of the other two positions (as the case may require).

(k) Net current assets (liabilities) (Item F)

In determining the amount to be shown for this item any amounts shown under "Prepayments and accrued income" must be taken into account wherever shown.

(l) Called-up share capital (Item K.I)

The amount of allotted share capital and the amount of called-up share capital which has been paid up must be shown separately.

General Notes

- (a) The headings such as B.I (Intangible assets) and B.II (Tangible assets) must be disclosed, whereas items such as 1 (Development costs) and 2 (Concessions, patents etc.) may be combined where they are not material. However, if items are combined then a breakdown of such combinations must be shown in the notes.
- (b) All fixed assets, such as property and goodwill, must be depreciated over the economic life of the asset.
- (c) The notes accompanying the accounts must show:
 - The cost of fixed assets at the beginning and the end of the financial year.
 - The effects of acquisitions, revaluations, disposals, etc.
 - Full details of depreciation, i.e. the accumulated balance at the beginning of the financial year, depreciation charged for the year and the effects of disposals on depreciation in the year, and also any other adjustments.
- (d) The value of any hire-purchase agreements outstanding must not be deducted from assets.
- (e) Only goodwill that has been purchased must be shown, and internally-generated goodwill must not be shown, although this does not apply to consolidated accounts.
- (f) When an asset is revalued, normally this is an adjustment to show the asset at the market value instead of cost. The difference of the revaluation must be debited or credited to the revaluation reserve.
- (g) Preliminary expenses, and expenses and commission on any share or debenture issues, should either be written off against the share premium account or written off to the profit and loss account.
- (h) The Act lays out the accounting principles to be followed when preparing the financial accounts:
 - A company is presumed to be a going concern.

- Accounting policies must be applied consistently from year to year.
- The accruals concept must be followed.
- The prudence concept must be observed.
- Each component item of an asset or liability must be separately valued, e.g. if the organisation has five types of stock then each type must be independently valued at the lower of cost or net realisable value.
- Amounts representing assets or income may NOT be offset against items representing liabilities or expenditure, e.g. debit and credit balances on a debtor's account may not be aggregated or, as per (d) above, the amount outstanding on a hire-purchase contract may not be deducted from the asset concerned.

Layout of Format 1

The layout of the balance sheet under Format 1 is shown on the following pages and you are advised to use it at all times.

Advantage is taken of the concessions whereby detail may be disclosed in the notes instead of on the face of the balance sheet. As most UK companies now elect to use the abbreviated form of balance sheet, the various totals must be enhanced by additional notes at the end of the balance sheet.

J & K Plastics plc
Balance Sheet as at 31 December

	Current Year	Previous Year
	£	£
Fixed Assets		
Intangible assets	X	X
Tangible assets	X	X
Investments	X	X
	<u>X</u>	<u>X</u>
Current Assets		
Stocks	X	X
Debtors	X	X
Cash at bank and in hand	X	X
	<u>X</u>	<u>X</u>
Creditors: Amounts falling due within one year	<u>(X)</u>	<u>(X)</u>
Net current assets	<u>X</u>	<u>X</u>
Total assets less current liabilities	X	X
Creditors: Amounts falling due after more than one year	(X)	(X)
Provisions for liabilities and charges	<u>(X)</u>	<u>(X)</u>
	<u>XXX</u>	<u>XXX</u>
Capital and Reserves		
Called-up share capital	X	X
Share premium account	X	X
Revaluation reserve	X	X
Other reserves	X	X
Profit and loss account	X	X
	<u>XXX</u>	<u>XXX</u>
Approved by the board (date)		
Names (Directors)		

Example of Notes to the Balance Sheet

(a)	INTANGIBLE ASSETS	Development costs	Patents & trademarks	Goodwill	Total
		£	£	£	£
	Cost				
	At 1 Jan	X	X	X	X
	Additions	X	X	X	X
	Disposals	(X)	(X)	(X)	(X)
	At 31 Dec	X	X	X	X
	Amounts written off	—	—	—	—
	Depreciation				
	At Jan 1 balance	X	X	X	X
	Charge for the year, P & L a/c etc.	X	X	X	X
	Deductions in respect of disposals	(X)	(X)	(X)	(X)
	At 31 Dec	X	X	X	X
	Net Book Values				
	At 31 Dec current year	X	X	X	X
	At 31 Dec previous year	X	X	X	X

(b)	TANGIBLE ASSETS	Land & buildings	Plant & machinery	Vehicles	Total
		£	£	£	£
	Cost or Valuation				
	At 1 Jan	X	X	X	X
	Additions	X	X	X	X
	Revaluations (additional value only)	X	X	X	X
	Disposals	(X)	(X)	(X)	(X)
	At 31 Dec	X	X	X	X
	Net Book Value				
	At 31 Dec current year	X	X	X	X
	At 31 Dec previous year	X	X	X	X

- (c) Full details of creditors: amounts falling due within one year, creditors: amounts falling due after more than one year, and provisions for liabilities and charges, must be shown as notes.

C. THE PROFIT AND LOSS ACCOUNT

The Companies Act provides four possible formats for the profit and loss account for publication but, as with the balance sheet, we shall only consider Format 1 here. This is the form of presentation used by most United Kingdom companies.

Form of Presentation – Format 1

The items to be included, where relevant, and their order in the balance sheet are as follows. The figures in brackets refer to the notes which follow. We shall also review further legal requirements concerning profits and losses.

- 1 Turnover (a)
- 2 Cost of sales (b)
- 3 Gross profit or loss
- 4 Distribution costs (b)
- 5 Administrative expenses (b)
- 6 Other operating income
- 7 Income from shares in group undertakings
- 8 Income from participating interests
- 9 Income from other fixed asset investments (c)
- 10 Other interest receivable and similar income (c)
- 11 Amounts written off investments
- 12 Interest payable and similar charges (d)
- 13 Profit/loss on ordinary activities before taxation
- 14 Tax on profit or loss on ordinary activities
- 15 Profit or loss on ordinary activities after taxation
- 16 Extraordinary income
- 17 Extraordinary charges
- 18 Extraordinary profit or loss
- 19 Tax on extraordinary profit or loss
- 20 Other taxes not shown under the above items
- 21 Profit or loss for the financial year
- 22 Dividends paid or proposed

Then, either on the face of the profit and loss account or by way of note, the following:

- 23 Retained profit brought forward
- 23 Retained profit carried forward
- 24 Earnings per share

This is the list of all the items which must be shown in the profit and loss account. The numbers **do not** have to be shown but the **order of the items must be adhered to**; if some of the items do not exist for the company, however, then there is no need to include such items, e.g. if a company does not have any outside investments then items 7, 8, 9, 10 and 11 would not appear and so item 6 would be followed by item 12.

Notes on the Format

(a) Turnover (Item 1)

Turnover is not defined in the Act but it is widely regarded as gross income from normal trading.

Turnover should be shown and calculated net of trade discounts, VAT and other sales taxes. Notes must show the turnover broken down by classes of business and by geographical markets, having regard to the manner in which the company's activities are organised, insofar as these classes and markets differ substantially. This additional information on turnover may be omitted if disclosure would be seriously prejudicial to the company's interests.

(b) Cost of Sales, Distribution Costs and Administrative Expenses (Items 2, 4 and 5)

These must all be stated after taking any provision for depreciation or diminution of asset value into account. (Cost of sales is the direct expenses attributable to bringing the raw materials to the point of sale.)

(c) Income from Other Fixed Asset Investments, Other Interest Receivable and Similar Income (Items 9 and 10)

These must be split between income and interest from group undertakings and income and interest from other sources. The amount of rents from lands must be disclosed if they are a substantial part of the company's income for the year.

(d) Interest Payable and Similar Charges (Item 12)

Again, these must be split between the sums payable to group undertakings and to others, and also between bank loans and overdrafts, and other loans wholly repayable within five years, by instalments or otherwise, secured or unsecured.

General Notes

- (a) In Format 1 expenses are classified by function, e.g. distribution costs, administrative expenses.
- (b) Whichever format a company adopts, the account must show separately the amount of the company's profit or loss on ordinary activities before taxation.
- (c) The account must show separately the allocation of profit or the treatment of loss and in particular it must show:
- The aggregate amount of any dividends that have been paid and proposed.
 - Any amount that is transferred to reserves.
 - Any amount that is withdrawn or proposed to be withdrawn from reserves.
- (d) Goodwill (but not goodwill arising on consolidation) is to be written off over a period not exceeding its useful economic life.
- (e) The 1985 Act requires the following items to be shown separately by way of **notes**:
- (i) Interest on bank loans, overdrafts, and other loans that are:
 - Repayable before the end of a period of five years
 - Repayable after five years from the end of the accounting period
 - (ii) The amounts set aside for redemption of share capital and of loans.
 - (iii) The sum involved in depreciation.
 - (iv) Development costs written off.
 - (v) Income from listed investments.
 - (vi) Rents from land – if material.

- (vii) The cost of hire of plant and machinery.
- (viii) The auditors' remuneration and expenses.
- (f) The following are also required by way of *notes*:
 - (i) The basis on which the charge for corporation tax is computed.
 - (ii) Particulars of special circumstances which affect liability in respect of taxation of profits, income or capital gains for the current and succeeding financial years.
 - (iii) The amount of corporation tax charged.
 - (iv) If, but for double taxation relief, the amount would have been greater, that amount must be stated.
 - (v) The amount of income tax.
 - (vi) The amount of any tax charged outside the United Kingdom.

All the above must be stated separately.
- (g) Where the company carries on business of two or more classes which, in the opinion of the directors, differ substantially from each other, there must be stated by way of *note*:
 - (i) The amount attributable to each class.
 - (ii) The amount of profit attributable before tax to each class.
 - (iii) Information regarding different geographical markets if the directors think that the markets differ substantially.
- (h) The following are required by way of *note*:
 - (i) The average number of persons employed during the financial year.
 - (ii) The average number within each category of persons employed.
 - (iii) Details of aggregate wages, social security costs and other pensions.
- (i) Accounting standards have altered the position regarding extraordinary items, which are virtually never seen any more.
- (j) **Additional requirements** – the following items must be shown:
 - (i) The corresponding figures for the immediately *preceding* year – i.e. comparative figures, except in the case of the first profit and loss account of a business.
 - (ii) Any material respects in which any items in the profit and loss account are affected by transactions of a sort not usually undertaken by the company; or circumstances of an exceptional or non-recurrent nature; or any change in the basis of accounting.
 - (iii) Any amounts relating to the previous financial year which are included in the profit and loss account, and the effects thereof.
 - (iv) Where sums originally in a foreign currency are translated into sterling, the basis of translation (e.g. exchange rate). SSAP 20 gives further guidance on this point.
- (k) **Payments to directors and highly-paid employees** – the notes to the profit and loss account must show the following information:
 - (i) The aggregate amount of directors' emoluments (including emoluments received by a director of the company from any subsidiary company, fees, commission, expense allowances charged to UK tax, pension contributions, and the estimated money value of any benefits received in kind), distinguishing emoluments received in their capacities as directors (e.g. fees) from other emoluments – e.g. salaries as full-time executives.
 - (ii) The aggregate amount of directors' or past directors' pensions.

- (iii) The aggregate amount of any compensation to directors or past directors in respect of loss of office.
- (iv) The number of directors whose emoluments (as given in (i) above, but excluding pension contributions) fall into the brackets 0-£5,000, £5,000-£10,000, £10,000-£15,000, etc., unless the aggregate is under £60,000.
- (v) The emoluments of the highest-paid director, if greater than the emoluments of the chairman, excluding pension contributions.
- (vi) The number of directors who have waived rights to receive emoluments during the year, and the aggregate amount thereof.
- (vii) The emoluments of the chairman during the year, excluding pension contributions. Where two or more directors have acted as chairman during the year, the figure to be disclosed is the aggregate of the amounts of the various chairmen during the periods they held office.

If the accounts do not give the required information, the auditors must supply it in their report. It is, however, the duty of directors to supply all relevant information to the company.

Example of Internal and Published Profit and Loss Account

In order to see how one kind of profit and loss account can be changed into another, study the following example.

(a) Profit and loss account for internal distribution

J & K Plastics plc
Trading and Profit and Loss Account for the year ended 31 December

	£	£	£
Net sales			1,750,000
<i>less</i> Cost of sales			
Stock 1 Jan	300,000		
Purchases	1,500,000		
	<u>1,800,000</u>		
Stock 31 Dec	<u>400,000</u>		<u>1,400,000</u>
Gross profit			350,000
Distribution costs:			
Salaries and wages	40,000		
Motor vehicle costs	25,000		
General	20,000		
Depreciation: MV	7,000		
Depreciation: Machinery	<u>3,000</u>	95,000	
Administration expenses:			
Salaries and wages	45,000		
Directors' remuneration	22,000		
Motor vehicles	12,000		
General	27,000		
Auditors	4,000		
Depreciation: Office furniture	3,000		
Office machinery	<u>2,000</u>	<u>115,000</u>	<u>210,000</u>
			140,000
Other operating income:			
Rents receivable			<u>9,000</u>
			149,000
Income from shares in related companies (participating interests)		3,000	
Income from shares in non-related companies		1,500	
Other interest receivable		<u>1,000</u>	<u>5,500</u>
			154,500
Interest payable: Loans repayable in less than 5 years		5,500	
Loans repayable in less than 10 years		<u>5,000</u>	<u>10,500</u>
Profit on ordinary activities before taxation			144,000
Tax on profit on ordinary activities			<u>48,000</u>
Profit on ordinary activities after tax			96,000
Undistributed profits brought forward from last year			<u>45,000</u>
			141,000
Transfer to general reserve		47,000	
Proposed ordinary dividend		<u>60,000</u>	<u>107,000</u>
Undistributed profits carried forward to next year			34,000

(a) Profit and loss account for publication

J & K Plastics plc
Trading and Profit and Loss Account for the year ended 31 December

<i>Note</i>	<i>£</i>	<i>£</i>
Turnover		1,750,000
1 Cost of sales		<u>1,400,000</u>
Gross profit		350,000
1 Distribution costs	95,000	
1 Administration costs	<u>115,000</u>	<u>210,000</u>
		140,000
Other operating income		<u>9,000</u>
		149,000
Income from participating interests	3,000	
2 Income from other fixed asset investments	1,500	
2 Other interest receivable	<u>1,000</u>	<u>5,500</u>
		154,500
3 Interest payable		<u>10,500</u>
Profit on ordinary activities before taxation		144,000
Tax on profit on ordinary activities		<u>48,000</u>
Profit for the year on ordinary activities after taxation		96,000
Undistributed profits from last year		<u>45,000</u>
		141,000
Transfer to general reserve	47,000	
Proposed ordinary dividend	<u>60,000</u>	<u>107,000</u>
Undistributed profits carried to next year		34,000

Notes

- 1 These items must be stated after taking into account any necessary provisions for depreciation or diminution of value of assets.
- 2 Income and interest derived from group undertakings must be shown separately from income and interest from other sources.
- 3 The amount payable to group companies must be shown separately.
- 4 The amount of any provisions for depreciation and diminution in value of tangible and intangible fixed assets must be disclosed in a note to the accounts.

Notes disclosing details as given earlier must also be included.

It would be legally possible for the internal accounts shown above to be published as they stand because the items are shown in the correct order. However, the **Companies Act** does not force companies to publish full details as this would lead to competitors being placed in a better position than would be fair to the company.

Nevertheless, basic information about performance can be obtained from published records.

D. NON-STATUTORY INFORMATION

Companies must prepare profit and loss accounts, balance sheets and so on. However, they also prepare other documents which can be seen as useful. Here are some examples:

- **Chairman's report**

This is a summary of the business by the chairman. Such reports tend to be subjective and show the business in the best light. A chairman's report is not audited and therefore the information is less reliable than audited information.

- **Employee reports**

These indicate how funds have been used by and for employees. Although they are rarely seen, some companies produce them to illustrate their commitment to employees.

In general terms, these reports have little relevance for credit managers. They are not audited and so are less reliable than, say, the profit and loss account.

- **Value added statements**

These treat profit and loss information in a different way and show how income is shared between employees, shareholders and others. Once fashionable, they are now rarely seen. The information is as relevant as profit and loss details to the credit manager. However, value added statements are not audited so are less reliable than the profit and loss account.

Study Unit 14

Cash Flow Statements

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A. INTRODUCTION

In this unit we concentrate on cash flow statements, which are now part of the requirements for published accounts.

Requirement for a Cash Flow Statement (FRS 1)

Preparation of a profit and loss account and a balance sheet does not give a total picture of the finances of a business. The profit and loss account discloses the profit (or loss) for the accounting period and the balance sheet shows us what and how resources have been used at the period end date. What is missing is a statement showing what cash has come into the business during the accounting period and how it has been used.

Since 1992 company accountants have been required to prepare a year-end cash flow statement in accordance with **Financial Reporting Standard (FRS) 1** issued by the Accounting Standards Board. This replaced the Source and Application of Funds (funds flow) statement prescribed by the previous standard SSAP 10 (now withdrawn).

You should note that the Profit and Loss Account, Balance Sheet and Cash Flow Statement are known as *Primary Statements*.

Format of the Year-end Cash Flow Statement

Most UK companies have to publish a cash flow statement for each accounting period. It is basically a summary of all movements of cash and its equivalents into and out of the business during the accounting period.

A cash flow statement prepared under the terms of FRS 1 separates:

- operating activities
- returns on investments and servicing of finance
- taxation
- investing activities
- financing.

Hence the statement gives an overview of changes in these areas to illustrate the success of management in controlling the different functions.

Briefly, the overall presentation of a cash flow statement is as follows:

Operating activities	a
Returns on investments and servicing of finance	b
Taxation	c
Investing activities	<u>d</u>
Net cash inflow/outflow before financing	e
Financing	<u>f</u>
Increase/(decrease) in net cash and cash equivalents	g
Cash and cash equivalents at start of year	<u>h</u>
Cash and cash equivalents at end of year	j

You can see from this example that the emphasis at the bottom of the statement is on liquidity. The accumulating effect on cash and cash equivalents (which may appear as a separate note) is clearly shown.

Let us look now at the different terms and what they represent.

B. CONTENTS OF THE CASH FLOW STATEMENT

Operating Activities

Cash flows from operating activities are, in general, the cash effects of transactions and other events relating to operating or trading activities. This can be measured by a direct or indirect method.

Direct method

The direct method picks up individual categories of cash flow including income from customers, cash paid to suppliers, cash paid to employees and cash paid to meet expenses.

In other words, you will see:

Operating activities

Cash received from customers	a
Cash payments to suppliers	(b)
Cash paid to and on behalf of employees	(c)
Other cash payments	<u>(d)</u>
Net cash inflow from operating activities	<u>e</u>

This would then be followed by any extraordinary items directly relevant to operating activities. Extraordinary items relevant to, say, investing activities would appear under the investing activities heading. Any exceptional items should be included within the main categories of this heading as above and be disclosed in a note to the cash flow statement.

Indirect method

Many businesses will not readily have available cash-based records and may prefer the indirect method (which is accruals based) of dealing with operating activities. A typical presentation of the indirect method for operating activities would be:

Operating Activities

Profit before tax, interest and before extraordinary items	a
Depreciation charged	b
Increase/decrease in debtors	c
Increase/decrease in stock	d
Increase/decrease in creditors	<u>e</u>
Net cash inflow/outflow from operating activities	<u>f</u>

Alternatively, you may well see in practice “*Net cash inflow from operating activities*” in the cash flow statement with a separate reconciliation as a note to the statement. This reconciliation will be between the operating profit (for non-financial companies, normally profit before interest) reported in the profit and loss account and the net cash flow from operating activities. This should, as above, disclose separately the movements in stocks, debtors and creditors relating to operating activities and other differences between cash flows and profits (e.g. accruals and deferrals).

Practically speaking, this part of the statement is not too difficult to prepare. There is no “adding back” of the tax and dividends to the profit figure though.

Indeed you will see the taxation and returns on investments and servicing of finance features separately.

Returns on Investments and Servicing of Finance

For preparation purposes this is a “minefield” but if you are clear on matters of gross and net dividends and dividends paid and proposed you will be able to avoid the traps.

We are concerned with dividends *paid* and so you can expect to need to add together:

- the interim dividend paid in the financial year;
- the proposed dividend in the previous year’s balance sheet.

The proposed dividend in this year’s balance sheet will not result in a cash outflow until the next year. Thus, it is not included in the computation.

To clarify the advance corporation tax situation, dividends are shown *net*. The FRS states:

“Cash inflows from returns on investments and servicing of finance include:

- (a) interest received including any related tax recovered;*
- (b) dividends received (disclosing separately dividends received from equity accounting entities), net of any tax credits.*

Cash outflows from returns on investments and servicing of finance include:

- (a) interest paid (whether or not the charge is capitalised), including any tax deducted and paid to the relevant tax authority;*
- (b) dividends paid, excluding any advance corporation tax;*
- (c) the interest element of finance lease rental payments.”*

Taxation

Again, the conflict between cash and accruals arises. If you look at published accounts you may find that it is virtually impossible to see how the tax charge in the cash flow statement equates with that in the rest of the accounts.

in some circumstances, you may be able to extract the tax information directly but we would, more often, expect you to need to make a computation such as:

$$\begin{array}{r}
 \text{Corporation tax + advance corporation tax in Year 1 balance sheet} \\
 \text{less} \\
 \text{Corporation tax + advance corporation tax in Year 2 balance sheet} \\
 \text{plus} \\
 \text{Profit and loss figure for corporation tax (Year 2)}
 \end{array}$$

It may not always be that straightforward of course but we are suggesting this as a useful starting point.

Investing Activities

Cash inflows from investing activities include:

- (a) Receipts from sales or disposals of fixed assets
- (b) Receipts from sales or investments in subsidiary undertakings net of any balances of cash and cash equivalents transferred as part of the sale
- (c) Receipts from sales of investments in other entities with separate disclosure of divestments of equity accounted entities
- (d) Receipts from repayment or sales of loans made to other entities by the reporting entity or of other entities’ debt (other than cash equivalents) which were purchased by the reporting entity.

Cash outflows from investing activities include:

- (a) Payments to acquire fixed assets
- (b) Payments to acquire investments in subsidiary undertakings net of balances of cash and cash equivalents acquired
- (c) Payments to acquire investments in other entities with separate disclosure of investments in equity accounted entities
- (d) Loans made by the reporting entity and payments to acquire debt of other entities (other than cash equivalents).

Financing Cash Inflows and Outflows

Financing cash inflows include:

- (a) Receipts from issuing shares or other equity instruments
- (b) Receipts from issuing debentures, loans, notes and bonds and from other long and short-term borrowings (other than those included within cash equivalents).

Financing cash outflows include:

- (a) Repayments of amounts borrowed (other than those included within cash equivalents)
- (b) The capital element of finance lease rented payments
- (c) Payments to re-acquire or redeem the entity's shares
- (d) Payments of expenses or commission on any issue of shares, debentures, loans, notes, bonds or other financing.

The amounts of any finance cash flows received from or paid to equity accounted entities should be disclosed separately.

Supplementary notes are essential to explain certain movements. Paramount in these notes are reconciliations of the movements in cash and cash equivalents and the items in the financing section of the cash flow statement with the related items in the opening and closing balance sheets of the period.

Cash and Cash Equivalents

The terms "cash" and "cash equivalents" are perhaps best defined as they exclude overdrafts which are hardcore in nature.

Cash

This is defined by FRS 1 as "*cash in hand and deposits repayable on demand with any bank or other financial institution. Cash includes cash in hand and deposits denominated in foreign currencies*".

Cash equivalents

These are: "*short-term, highly liquid investments which are readily convertible into known amounts of cash without notice and which were within three months of maturity when acquired; less advances from banks repayable within three months from the date of the advance. Cash equivalents include investments and advances denominated in foreign currencies provided that they fulfil the above criteria*".

C. EXAMPLE

The summarised accounts of Frizbee Ltd for the last two years are as follows:

Profit and Loss Account for the year ended 31 December 20x2

	£000	£000
Turnover		26,320
Cost of sales		<u>9,280</u>
Gross profit		17,040
Distribution costs	1,070	
Administrative expenses	<u>7,290</u>	<u>8,360</u>
		8,680
Income from other fixed asset investments		660
Interest payable		<u>(890)</u>
Profit on ordinary activities before taxation		8,450
Tax on profit on ordinary activities before taxation		<u>2,370</u>
Profit on ordinary activities after taxation		6,080
Extraordinary income	1,120	
Tax on extraordinary income	<u>360</u>	<u>760</u>
Profit for the financial year		6,840
Dividends		<u>2,000</u>
		4,840
Retained profit brought forward		<u>6,210</u>
Retained profit carried forward		11,050

Balance Sheet as at 31 December

	20x1		20x2	
	£000	£000	£000	£000
Fixed assets @ cost		44,190		40,130
less Depreciation		<u>14,660</u>		<u>12,260</u>
		29,530		27,870
Current assets:				
Investments	8,170		5,920	
Stocks	36,170		39,220	
Debtors	33,110		30,090	
Cash at bank and in hand	8,720		–	
ACT recoverable	<u>450</u>		<u>500</u>	
	86,620		75,730	
Creditors: amounts falling due within one year				
Bank loans and overdrafts	–		6,680	
Trade creditors	30,470		29,940	
Corporation tax	2,170		2,370	
ACT payable	450		500	
Dividends proposed	<u>1,350</u>		<u>1,500</u>	
	34,440		40,990	
Net current assets		<u>52,180</u>		<u>34,740</u>
Total assets less current liabilities		81,710		62,610
Creditors: amounts falling due after more than one year				
Debenture loans		<u>25,000</u>		<u>–</u>
		<u>56,710</u>		<u>62,610</u>
Capital and Reserves				
Called up share capital				
Ordinary £1 shares		50,000		51,000
Share premium account		500		560
Profit and loss account		<u>6,210</u>		<u>11,050</u>
		56,710		62,610

You are also given the following information:

(1) Fixed asset schedule

	<i>£000</i>
Cost at start of year	44,190
Disposals	<u>4,060</u>
Cost at end of year	<u>40,130</u>

Depreciation:

	<i>£000</i>
At start of year	14,660
Disposals	(4,000)
Charge to profit and loss for the year	<u>1,600</u>
	<u>12,260</u>

Fixed assets disposed of during the year were sold for £20,000.

- (2) The extraordinary item arose on the sale of a business segment and the tax on this was paid during the year.
- (3) Interest received and payable took place within the year resulting in amounts accrued at the start or end of the year.

Required:

Prepare a Cash Flow Statement for the year ended 31 December 20x2.

The specimen answer is set out on the next page.

Cash Flow Statement for the year ended 31 December 20x2

	<i>£000</i>	<i>£000</i>
Cash flow from operating activities		9,710
Extraordinary income		<u>1,120</u>
Net cash inflow from ordinary activities		10,830
Returns on investment and servicing of finance		
Interest received	660	
Interest paid	(890)	
Dividends paid (2,000 + 1,350 – 1,500)	<u>(1,850)</u>	
Net cash outflow from returns on investment and servicing of finance		(2,080)
Taxation		
Corporation tax paid (2,370 + 2,170 + 450 – 2,370 – 500)	(2,120)	
Tax on extraordinary item	<u>(360)</u>	(2,480)
Investing activities		
Receipts from sale of fixed assets	<u>20</u>	
Net cash inflow from investing activities		<u>20</u>
Net cash inflow before financing		6,290
Financing		
Issue of ordinary share capital (1,000 + 60)	1,060	
Repayment of debenture loans	<u>(25,000)</u>	
		<u>(23,940)</u>
Decrease in cash and cash equivalents		17,650

Notes

(1) Reconciliation of operating profit to net cash inflow from operating activities:

	<i>£000</i>
Operating profit	8,680
Depreciation charges	1,600
Loss on disposal of fixed assets (4,060 – 4,000 – 20)	40
Increase in stocks (39,220 – 36,170)	(3,050)
Decrease in debtors (33,110 – 30,090)	3,020
Increase in deferred assets (500 – 450)	(50)
Decrease in creditors (30,470 – 29,940)	<u>(530)</u>
	<u>9,710</u>

(2) Analysis of the balances of cash and cash equivalents

	20x2	20x1	change
	<i>£000</i>	<i>£000</i>	<i>£000</i>
Cash at bank and in hand	–	8,720	(8,720)
Short term investments	5,920	8,170	(2,250)
Bank overdraft	6,680	–	(6,680)
	<u>760</u>	<u>16,890</u>	<u>(17,650)</u>

If, as well as preparing such a statement, you are asked to analyse it you will find that the separate headings prove useful in helping you identify the changes:

- The debenture has been redeemed (financing). Hence as the financing has reduced we can expect the future cost of servicing that financing to reduce. We are not told the amount needed to finance the debentures from the £890,000 interest paid expense but clearly this amount will decrease.
- The debenture redemption has been funded largely by a reduction in cash and cash equivalents - primarily the elimination of the cash and bank balances and creation of an overdraft. However, this is not too worrying as the overdraft is virtually matched by short-term investments and other elements of working capital have largely been left untouched. Assuming similar results by way of profitability in future years, the bank overdraft should be eliminated in a couple of years.

We have assumed that the investments are all short-term, i.e. redemption within three months. It is possible that the term is longer so we might need to reclassify these and to alter the figure for cash and cash equivalents. We can also see that the bank loans and overdrafts might well, unless they are on a roll-over basis, comprise some elements not repayable for more than a three month period. Again we might need to reclassify these - as part of the working capital - and alter our figures for cash and cash equivalents. Watch for guidance on such matters.

D. USE OF CASH FLOW STATEMENTS

The ASB feels that the cash flow statement will help analysts in making judgments on the amount, timing and degree of certainty of future cash flows by giving an indication of the relationship between profitability and cash generating ability and thus the “quality” of the profit earned.

Looking at the cash flow statement in conjunction with a balance sheet provides information about liquidity, viability and financial adaptability. The balance sheet provides information about an entity’s financial position at a particular point in time including assets, liabilities and equity on their interrelationship at balance sheet date.

The balance sheet information is regularly used to obtain information about liquidity but as the balance sheet is only the picture on one day, the liquidity information is incomplete. The cash flow statement extends liquidity information over the accounting period. However, to give an indication of future cash flows, the cash flow statement needs to be studied in conjunction with the profit and loss account and balance sheet.

The concentration on cash as opposed to working capital emphasises the pure liquidity of the reporting business. Organisations can have ample working capital but run out of cash, and fail.

Practice Question

The following are the (not fully classified) balance sheets of Victor plc for 20x0 and 20x1, together with the profit and loss statement for 20x1.

Balance Sheets of Victor plc as at 31 December

	20x0		20x1	
	£000	£000	£000	£000
Goodwill at cost (less amortisation)		110		100
Land at cost		140		230
Buildings at cost	168		258	
<i>less</i> Provision for depreciation	<u>22</u>		<u>28</u>	
		146		230
Motor vehicles at cost	162		189	
<i>less</i> Provision for depreciation	<u>46</u>		<u>41</u>	
		116		148
Stocks		76		100
Debtors		60		64
Prepaid expenses		6		5
Bank		<u>10</u>		<u> </u>
		<u>664</u>		<u>877</u>
Called-up capital (£1 shares)		300		360
Share premium account		–		48
General reserve		44		60
Retained profits		96		130
Debentures		60		100
Corporation tax payable		60		70
Bank overdraft		–		24
Creditors		99		79
Accrued wages		<u>5</u>		<u>6</u>
		<u>664</u>		<u>877</u>

Victor plc
Profit and Loss Statement for the year ended 31 December 20x1

	<i>£000</i>	<i>£000</i>
Sales revenue		670
<i>less</i> Cost of sales		<u>323</u>
Gross operating profit		347
Profit on disposal of motor vehicles		<u>7</u>
		354
<i>less</i> Wages	112	
Office expenses	27	
Selling expenses	9	
Depreciation of: motor vehicles	22	
buildings	6	
Interest	18	
Amortisation of goodwill	<u>10</u>	
		<u>204</u>
Net profit before taxation		150
<i>less</i> Corporation tax		<u>70</u>
Net profit after taxation		80

Additional information is provided as follows:

- (a) During 20x1, motor vehicles, costing £42,000 and depreciated by £27,000, were sold. New motor vehicles costing £69,000 were purchased in the year.
- (b) A dividend of £30,000 was paid out in June 20x1.
- (c) Corporation tax paid over in 20x1 amounted to £60,000.

Required:

A cash flow statement in accordance with FRS 1 for year ended 31 December 20x1.

ANSWERS TO QUESTION FOR PRACTICE

Victor plc
Cash Flow Statement for the year ended 31 December 20x1

	<i>Notes</i>	<i>£000</i>	<i>£000</i>
Net Cash Inflow from Operating Activities	(1)		153
Returns on Investments and Servicing of Finance			
Interest received		–	
Interest paid		(18)	
Dividend paid June 20x1		<u>(30)</u>	
Net Cash Outflow from Returns on Investments and Servicing of Finance			(48)
Taxation			
Corporation tax paid			(60)
Investing Activities			
Payments to acquire fixed assets		(249)	
Receipts from sales of fixed assets		<u>22</u>	<u>(227)</u>
Net Cash Outflow before Financing			(182)
Financing			
Increase in share capital		108	
Issue of debentures		<u>40</u>	
Net Cash Inflow from Financing			<u>148</u>
Decrease in Cash and Cash Equivalents	(2)		(34)

Notes:

(1)	<i>£000</i>
Net profit before taxation	150
Profit on disposal of fixed assets	(7)
Depreciation	28
Interest paid	18
Amortisation of goodwill	10
Increase in stocks	(24)
Increase in debtors/prepayment expenses	(3)
Decrease in creditors/accrued wages	<u>(19)</u>
	<u>153</u>
(2)	10
Cash at bank 31.12.20x0	10
Cash at bank 31.12.20x1	<u>(24)</u>
Net decrease in cash	<u>(34)</u>

Workings:

Fixed Assets	Land	Buildings	Motor Vehicles	Total
Balance 20x0	140	168	162	470
Sales	–	–	(42)	(42)
Purchases	<u>–</u>	<u>–</u>	<u>69</u>	<u>69</u>
	140	168	189	497
Balance 20x1	<u>230</u>	<u>258</u>	<u>189</u>	<u>677</u>
Additions	90	90	–	180

Depreciation	Land	Buildings	Motor Vehicles	Total
Balance 20x0	–	22	46	68
Sales	<u>–</u>	<u>–</u>	<u>(27)</u>	<u>(27)</u>
	–	22	19	41
Balance 20x1	<u>–</u>	<u>28</u>	<u>41</u>	<u>69</u>
Profit and Loss Account	–	6	22	28

(c) Receipt from sales of fixed assets

Motor vehicles	42
Depreciation	<u>(27)</u>
Net book value	15
Profit	<u>7</u>
	<u>22</u>

(d) Increase in share capital:

Increase in the issued share capital, £60 + Share premium, £48 = £108

Study Unit 15

Interpretation of Accounts

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A. ACCOUNTING RATIOS

In order to measure the success or failure of a business, financial analysts often use figures obtained from the annual accounts of that business as the starting point of their examination.

Some figures will be more useful to the analyst than others. Absolute figures are usually of little importance so it is necessary to compare figures by means of accounting ratios in order to interpret the information meaningfully.

Accounting ratios are only a guide and cannot form the basis for final conclusions – they only offer clues and point to factors requiring further investigation. The ratios obtained are subject to the same weaknesses as the financial statements from which they are computed. They are of little value unless they are compared with other ratios. Comparisons may be made:

- with different accounting periods to establish a trend
- with similar firms in the same type of business
- with budgeted ratios to see how actual ratios compare with planned ratios.

Under the first method, we may establish that a company has improved its performance over previous years, but this does not necessarily mean that the result is satisfactory. It may be more meaningful to compare actual performance with planned performance or, alternatively, compare performance with similar firms in the same industry.

If we adopt the latter method, we must remember that all the information that is required may not be available from an ordinary set of published accounts and also that accounting rules are capable of different interpretation. Therefore, when examining published accounts, we may not be comparing like with like and it is essential to be aware of this fact when making comparisons and drawing conclusions.

It is vital that the analyst ensures that the items to be compared are defined in the same terms and measured by the same rules. For example, one company may have revalued its assets in line with inflation, whereas another may be showing its assets at historical cost.

The ratios that we shall investigate are:

- Profitability
- Liquidity
- Capital structure and
- Investment.

Note at the outset that there are sometimes more than one way to define and calculate the ratios we shall be considering. As you will see in later studies, and in some of the textbooks, different approaches may be adopted and it is important, therefore, that you always state the way in which you are defining a particular ratio and how you have arrived at the figures used.

We shall use the annual accounts of ABC Ltd in each instance. The profit and loss account and balance sheet follow.

ABC Ltd
Profit and Loss Account for the years ending 31 December

	20x0		20x1	
	£	£	£	£
Sales		900,000		1,200,000
<i>less</i> Production cost of goods sold	630,000		818,000	
Administration expenses	135,000		216,000	
Selling and distribution expenses	<u>45,000</u>	<u>810,000</u>	<u>64,000</u>	<u>1,098,000</u>
Net Profit		90,000		102,000
<i>less</i> Corporation tax	36,000		40,800	
Proposed dividends	<u>54,000</u>	<u>90,000</u>	<u>61,200</u>	<u>102,000</u>
Retained Profits		Nil		Nil

ABC Ltd
Balance Sheet as at 31 December 20x1

20x0			20x1	
£	£		£	£
300,000		Fixed Assets	662,000	
190,000		Land and Buildings	180,000	
10,000		Plant and machinery	8,000	
	500,000	Motor vehicles		850,000
		Current Assets		
100,000		Stock	150,000	
50,000		Debtors	95,000	
50,000		Bank	5,000	
	200,000			250,000
		<i>less</i> Current Liabilities		
54,000		Proposed dividends	61,200	
46,000		Creditors	138,800	
	100,000			200,000
	100,000	Net Current Assets		50,000
	600,000			900,000
		<i>Represented by:</i>		
		Share Capital		
		Authorised:		
800,000		800,000 Ordinary shares of £1 each	800,000	
	500,000	Issued and fully paid:		
		Ordinary shares of £1 each		800,000
		Reserves		
54,000		General reserve	80,000	
46,000		Profit and loss account	20,000	
	100,000			100,000
	600,000			900,000

B. PROFITABILITY RATIOS

We need, at the outset, to be clear about certain definitions.

(a) Profit

There is some debate as to what figure should be taken for profit, i.e. should the figure used be net profit before or after tax? Some argue that changes in corporation tax rates over a number of years can obscure the ratio of net profit after tax to capital employed; others, that taxation management is a specialist job and that profit after tax should therefore be used. The important thing is to be **consistent** and it may be better in practice to compute both ratios.

Another point to remember is that gains or losses of an abnormal nature should be excluded from net profit in order to produce a realistic ratio.

(b) Capital employed

It is also necessary to decide which of the following items should be used as capital employed:

- *Total shareholders' funds* – i.e. share capital plus reserves
- *Net assets* – i.e. total assets less current liabilities (when loans are included it is necessary to add back loan interest to net profit)
- *Net assets less value of investments* – i.e. excluding any capital which is additional to the main activities of the business with a view to assessing the return achieved by management in their particular field (if this approach is adopted it is also necessary to deduct the investment income from the net profit)
- *Gross assets* – i.e. total assets as in the assets side of the balance sheet.

Again, there is no general agreement as to which of the above methods should be adopted for the calculation of capital employed.

(c) Asset Valuation

A further factor to be considered is that the assets are normally recorded in the balance sheet on a historical cost basis. A clearer picture emerges if all the assets, including goodwill, are revalued at their current going concern value, so that net profit, measured each year at current value, can be compared against the current value of capital employed.

Profit : Capital Employed

The return on capital employed is the first ratio to be calculated, since a satisfactory return is the ultimate aim of any profit-seeking organisation. The return on capital employed is sometimes called the *primary ratio*. Let us now proceed, using net profit before tax:net assets as the basis for the calculation.

$$\frac{\text{Profit}}{\text{Capital employed}} \quad \begin{array}{c} 20x0 \\ \frac{90,000}{600,000} = 15\% \end{array} \quad \begin{array}{c} 20x1 \\ \frac{102,000}{900,000} = 11.33\% \end{array}$$

What conclusions can we draw from the above ratios?

- We need to consider the decline in profitability in 20x1 in relation to the current economic climate. It may be that the decline can be accounted for by the fact that the industry as a whole is experiencing a recession, so the ratio of this company should be compared with that of similar firms.
- Another factor to be considered is that £362,000 appears to have been expended on additional land and buildings. If the buildings were purchased in December 20x1, it would be wrong to

include this additional amount as capital employed for 20x1. In such circumstances it is advisable to use average capital employed rather than the year-end figure. This illustrates the fact that ratios are only a guide and cannot form the basis for final conclusions.

The decline in the return on capital employed in 20x1 may be due either to a decline in the profit margins, or to not utilising capital as efficiently in relation to the volume of sales. Therefore, we should now examine two secondary ratios – net profit:sales, and sales:capital.

Secondary Ratios

(a) Net profit : sales

This ratio measures average profit on sales. The percentage net profit to sales for ABC Ltd was 10% in 20x0 and 8.5% in 20x1, which means that each £1 sale made an average profit of 10 pence in 20x0 and 8.5 pence in 20x1.

The percentage profit on sales varies with different industries and it is essential to compare this ratio with that of other firms in the same industry. For instance, supermarkets work on low profit margins while departmental furniture stores work on high profit margins.

(b) Sales : capital employed

If profit margins do decline, the return on capital employed can only be maintained by increasing productivity unless there is a greater proportionate increase in capital employed.

This ratio measures the efficiency with which the business utilises its capital in relation to the volume of sales.

- A high ratio is a healthy sign, for the more times capital is turned over, the greater will be the opportunities for making profit.
- A low ratio may indicate unused capacity.

Like the net profit:sales ratio, this ratio varies considerably according to the type of business concerned. Again, a supermarket may work on low profit margins with a very high turnover while a large departmental furniture store works on higher profit margins with a lower turnover.

$$\frac{\text{Sales}}{\text{Capital employed}} \quad \begin{array}{c} 20x0 \\ \frac{900,000}{600,000} = 1.5 \text{ times} \end{array} \quad \begin{array}{c} 20x1 \\ \frac{1,200,000}{900,000} = 1.33 \text{ times} \end{array}$$

This indicates that each £1 capital employed produced on average a sale of £1.50 in 20x0 and £1.33 in 20x1.

What are the possible reasons for the decline in this ratio?

- It may be that additional capital has not been justified by increased sales.
- Alternatively, there may have been expansion of plant facilities based on expectation of future sales.

Expense Ratios

The next question we may ask is “Why have profit margins on sales declined?” To answer this question, we must calculate the following expense ratios:

	20x0	20x1
	%	%
Production expenses : sales	70	68.16
Administration expenses : sales	15	18.00
Selling and distribution expenses : sales	5	5.34
Net profit : sales	<u>10</u>	<u>8.50</u>
	<u>100</u>	<u>100.00</u>

We could analyse these items still further by examining the individual items of expense falling within each category, e.g. material costs of production:sales, office salaries:sales, etc.

On the basis of the above information, we may be justified in investigating the administrative expenses in detail to account for the increased percentage in 20x1.

Asset Turnover Ratio

In order to find out why capital has not been utilised as efficiently in relation to the volume of sales we now consider the fixed assets turnover ratio (sales:fixed assets). If the ratio is low this may indicate that assets are not being fully employed. An investigation of the accounts of ABC Ltd reveals the following ratios:

$$\frac{\text{Sales}}{\text{Fixed Assets}} \quad \begin{array}{c} 20x0 \\ 900,000 \\ 500,000 \end{array} = 1.8 \text{ times} \quad \begin{array}{c} 20x1 \\ 1,200,000 \\ 850,000 \end{array} = 1.4 \text{ times}$$

This indicates that each £1 invested in fixed assets produced on average a sale of £1.80 in 20x0 and £1.40 in 20x1. In practice, it may be advisable to compare the ratio for each individual fixed asset and not merely total fixed assets. The reasons for the decline of sales:capital employed may apply equally to this ratio.

C. LIQUIDITY RATIOS

The objects of any business are to earn high profits *and remain solvent*. Because accountants realise revenue when the goods are delivered and match expenses with revenue, it follows that profits may not be represented by cash. Therefore, a company may be successful from a profitability point of view, but may still have liquidity problems.

The following areas should be examined when investigating the liquidity position of a company:

- ***Working capital***
Has the company sufficient funds to meet its working capital requirements?
- ***Immediate commitments***
Has the company sufficient resources to meet its immediate commitments?
- ***Stock control***
Is the company carrying excessive stocks?
- ***Debtors and creditors control***
Is the company maintaining adequate credit control of debtors and creditors?

Working Capital

Working capital is defined as the excess of current assets over current liabilities, i.e:

$$\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$$

Every business requires *cash* to meet its liabilities and all the constituents of working capital will, in the short term, turn into cash or require cash.

Working capital or current ratio (current assets : current liabilities)

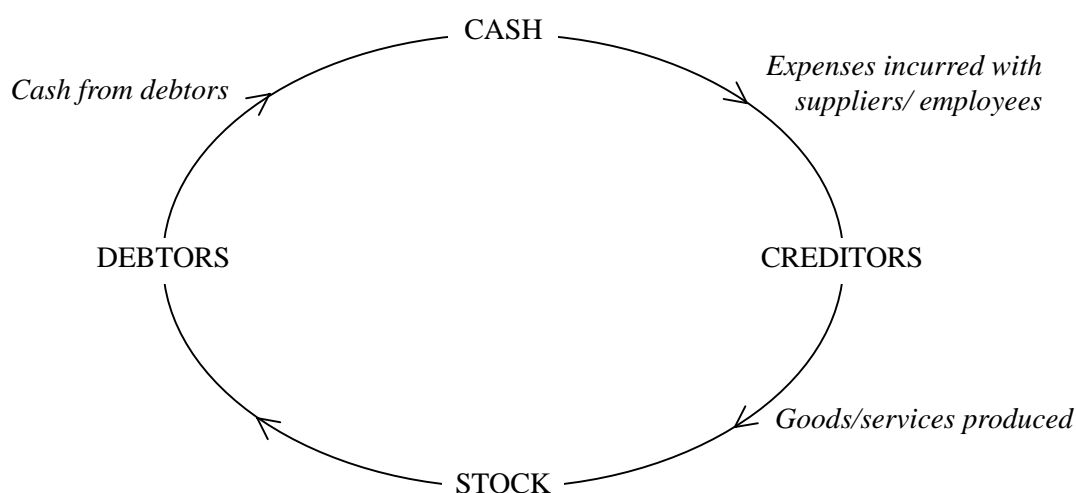
This ratio compares current assets, which will become liquid in 12 months, with liabilities due for payment within 12 months, i.e. it measures the number of times current assets cover current liabilities. Therefore, the ratio measures the margin of safety that management maintains in order to allow for the inevitable unevenness in the flow of funds throughout the current asset and liability accounts.

Creditors will want to see a sufficiently large amount of current assets to cover current liabilities. Traditionally, it has been held that current assets should cover current liabilities at least **twice**, i.e. 2:1, but this depends on the type of business and the requirements of individual firms. Generally, a low ratio indicates lack of liquidity and a high ratio indicates inefficient use of capital.

An investigation of the accounts of ABC Ltd reveals that current assets cover current liabilities twice in 20x0 and 1.25 times in 20x1. The decline in 20x1 may cause concern but whether this ratio is held to be satisfactory depends on the length of the period from when the cash is paid out for production until cash is received from the customer. It may well be that any planned increase in production is being held back because of lack of funds, and that additional permanent capital is required by means of an issue of shares or debentures.

Working capital cycle

When a business begins to operate, cash will initially be provided by the proprietor or shareholders. This cash is then used to purchase fixed assets, with part being held to buy stocks of materials and to pay employees' wages. This finances the setting-up of the business to produce goods/services to sell to customers for cash or on credit. Where goods are sold on credit, debtors will be created. When the cash is received from debtors, it is used to purchase further materials, pay wages, etc; and so the process is repeated. The following diagram summarises this cycle:



The working capital cycle is taking place continually. Cash is continually expended on purchase of stocks and payment of expenses, and is continually received from debtors. Cash should increase overall in a profitable business and the increase will either be retained in the business or withdrawn by the owner(s).

Problems arise when, at any given time in the business cycle, there is insufficient cash to pay creditors, who could have the business placed in liquidation if payment of debts is not received. An alternative would be for the business to borrow to overcome the cash shortage, but this can be costly in terms of interest payments, even if a bank is prepared to grant a loan.

Importance to the Organisation

Working capital requirements can fluctuate because of seasonal business variations, interruption to normal trading conditions, or government influences, e.g. changes in interest or tax rates. Unless the business has sufficient working capital available to cope with these fluctuations, expensive loans become necessary; otherwise insolvency may result. On the other hand, the situation may arise where a business has too much working capital tied up in idle stocks or with large debtors, which could lose interest and therefore reduce profits.

It is therefore extremely important to ensure that there is sufficient working capital at all times, but that it is not excessive. Without adequate working capital a company will fail, no matter how profitable or valuable its assets. This is because, if a company cannot meet its short-term liabilities, suppliers will only supply on a cash-on-delivery basis, legal actions will start and will cause a “snowball” effect, with other suppliers following suit.

Conversely, if working capital is too high, too much money is being locked up in stocks and other current assets. Possibly excessive working capital will have been built up at the expense of fixed assets. If this is the case, efficiency will tend to be reduced, with the inevitable running-down of profits.

The balance sheet layout is ordered so as to show the calculation of working capital (i.e. current assets less current liabilities). Provision of information about working capital is very important to users of balance sheets, e.g. investors and providers of finance such as banks or debenture holders.

A prudent level of current assets to current liabilities is considered to be 2:1 but this depends very much upon the type of business.

Striking the right balance

Excess working capital is a wasted resource and therefore the aim of good working capital management should be to reduce working capital to the practical minimum without damaging the business. The areas of concern will be stock, debtors, cash and creditors. The management of these areas is an extremely important function in a business. It is mainly a balancing process between the cost of holding current assets and the risks associated with holding very small or zero amounts of them.

Quick Assets or Acid Test Ratio (Current Assets less Stock : Current Liabilities)

It is advisable to investigate not only the ability of a company to meet its commitments over the next 12 months but also its ability to meet immediate commitments. Only those assets which can be quickly turned into cash are included, so stocks are excluded from current assets since they will have to be processed into the finished stocks and sold to customers.

Ideally, one would expect to see a ratio of 1:1. If the ratio were below 1:1 and creditors pressed for payment, the company would have great difficulty in meeting its commitments. If the ratio were above 1:1, it could be argued that the company was carrying too high an investment in funds which are not earning any return. The ratios for ABC Ltd were 1:1 in 20x0 and 0.5:1 in 20x1.

The ratio for 20x1 appears to be a cause for concern, though much depends on how long the debtors and creditors accounts have been outstanding. Nevertheless, if creditors pressed for payment, the company would not have sufficient funds available to pay them. Do not forget, however, that the ratios are taken from figures recorded at one point in time and the position may have been considerably different on 1 January 20x2.

Stock Ratios (Closing Stock : Cost of Sales per Day)

Excessive stocks are to be avoided since, apart from incidental costs (e.g. storage and insurance costs), capital will be tied up which perhaps could otherwise be invested in securities, or otherwise profitably employed. Also, where stocks are financed by overdraft, unnecessary interest costs are incurred. Therefore, it may be advisable to calculate a ratio which will give us an approximation of how many days' usage of stocks we are carrying at one particular point in time.

Example

Assuming the cost of sales figure is £365,000, dividing by the days in the year, a figure of sales cost per day of £1,000 is obtained.

Assuming this rate of sales continues and the balance sheet stock figure is, say, £80,000, it can be seen that we have sufficient stock requirements for 80 days.

If the company is a manufacturing company, different types of stocks are involved. Therefore, the following stock ratios should be prepared:

- **Raw material**

This is raw material stock : purchases per day.

- **Work in progress**

This is work in progress stock : cost of production per day.

- **Finished goods**

This is finished stock : cost of sales per day.

The average numbers of days' stock carried by ABC Ltd are as follows:

$$\frac{\text{Closing stock}}{\text{Cost of sales} \div 365} \quad \begin{array}{c} 20x0 \\ 100,000 \\ 630,000 \div 365 \end{array} = 58 \text{ days} \quad \begin{array}{c} 20x1 \\ 150,000 \\ 818,000 \div 365 \end{array} = 67 \text{ days}$$

From the above figures we can see that ABC Ltd appears to have been carrying larger stock requirements in 20x1. Remember again, however, that these figures have been taken at one point in time and the position may have been completely different on 1 January 19x6. ABC may have purchased in bulk at special terms, or there may be an impending increase in the price of raw materials. Therefore, the increase in 20x1 may not necessarily be a bad thing. Nevertheless, this ratio does highlight the stock-holding period and, if the increase cannot be accounted for, an investigation into the stock control system may be warranted.

Debtors Ratio

$$\text{Debtors ratio} = \frac{\text{Debtors}}{\text{Average credit sales per day}}$$

Cash may not be available to pay creditors until the customers pay their accounts. Therefore, an efficient credit control system ensures that the funds tied up in debtors are kept to a minimum. It is useful to calculate a ratio which will give us an approximation of the number of sales in the debtors figure at one particular point in time.

The ratios of ABC Ltd are as follows:

$$\begin{array}{c} 20x0 \\ 50,000 \\ 900,000 \div 365 \end{array} = 20 \text{ days} \quad \begin{array}{c} 20x1 \\ 95,000 \\ 1,200,000 \div 365 \end{array} = 29 \text{ days}$$

It therefore appears that debtors were taking longer to pay their accounts in 20x1, but whether this is good or bad depends on what ABC considers to be an acceptable credit period. Again, this ratio represents the position at one particular point in time and may not be representative of the position throughout the year. It may well be that the credit control department concentrates on reducing the debtors to a minimum at the year end, so that the figures appear satisfactory in the annual accounts. Therefore, there is a need for more detailed credit control information, to be provided at frequent intervals. Nevertheless, this ratio gives an approximation of the number of days debtors are taking to pay their accounts and it may be helpful to use this ratio for comparison with competitors.

Creditors Ratio

$$\text{Creditors ratio} = \frac{\text{Creditors}}{\text{Average credit purchases per day}}$$

The above calculation could be made to compare how long ABC are taking to pay creditors in the two years. The actual cost of purchases is not disclosed in the data given but if we take the production cost of goods sold as an alternative, we find:

$$\begin{array}{ccc} 20x0 & & 20x1 \\ \frac{46,000}{630,000 \div 365} = 27 \text{ days} & & \frac{138,800}{818,000 \div 365} = 62 \text{ days} \end{array}$$

D. CAPITAL STRUCTURE

Let us consider the case of X who commences business. If she requires various assets of £10,000 (premises, stock, etc.) where can she obtain the money to finance the business?

- Should she provide all the capital herself or should she obtain most of it from parties outside the business? (For example, a loan of £7,000 at 10% plus £2,000 from trade creditors and £1,000 from herself.)
- What effect will such a capital structure have on the future of the business?
- If there is a business recession, has the business sufficient earnings to meet the annual £700 interest cost on the loan?
- If X requires more funds, how will trade creditors and lending institutions view the fact that X has provided only 10% of the total funds of the business?

These problems suggest that there is a need for the financial analyst to investigate the capital structure of the business.

Proprietorship Ratio (Shareholders' Funds : Total Indebtedness)

This ratio shows what proportion of the total funds has been provided by the shareholders of the business and what proportion has been provided by outside parties. Potential investors and lenders are interested in this ratio because they may wish to see the owners of the business owning a large proportion of the assets (normally over 50%).

The ratios for ABC Ltd were as follows:

$$\begin{array}{ccc} & 20x0 & 20x1 \\ \frac{\text{Shareholders' funds}}{\text{Total indebtedness}} & \frac{600,000}{700,000} = 86\% & \frac{900,000}{1,100,000} = 82\% \end{array}$$

Certainly a large proportion of the funds has been provided by the owners of ABC but whether this ratio is good or bad depends on many other factors, e.g. the current economic climate and taxation policy regarding dividends and fixed interest payments.

Shareholders' Funds : Fixed Assets

This ratio reveals whether any part of the fixed assets is owned by outsiders. If fixed assets exceed shareholders' funds, it is apparent that part of the fixed assets is owned by outside parties, which may be interpreted as a sign of weakness. This does not appear to be the case for ABC Ltd, since shareholders' funds were £600,000 in 20x0 and £900,000 in 20x1, while fixed assets were £500,000 and £850,000.

Capital Gearing Ratio

$$\text{Capital gearing ratio} = \frac{\text{Ordinary share capital}}{\text{Fixed interest capital (i.e. Preference shares and Debentures)}}$$

This ratio measures the relationship between the ordinary share capital of a company and the fixed interest capital.

- A company with a large proportion of fixed interest capital is said to be ***high geared***.
- A company with a high proportion of ordinary share capital is ***low geared***.

Where the capital structure of a company is low geared, preference shareholders and debenture holders enjoy ***greater security***, while potential dividends payable to ordinary shareholders will not be subject to violent fluctuations with variations in profits. The opposite applies to a high geared capital structure (i.e. less security for preference shareholders and debenture holders and violent fluctuations in dividends for ordinary shareholders).

This relationship between ordinary share capital and fixed interest capital is important to an ordinary shareholder because of the effects on ***future earning prospects***. Some use of fixed interest capital is desirable, provided this capital earns a profit in excess of the fixed interest charges it creates. Any such excess profit will rebound to the ordinary shareholders, who thereby enjoy a higher return than they would if the whole capital had been contributed by them.

E. INVESTMENT RATIOS

Investment ratios provide valuable information to actual or potential shareholders. These ratios are also of interest to management, since a company depends upon potential investors for further funds for expansion. Let us now calculate the appropriate investment ratios from the annual accounts of ABC Ltd.

Ordinary Dividend Cover

$$\text{Ordinary dividend cover} = \frac{\text{Profit after Tax less Preference dividend}}{\text{Ordinary dividend}}$$

This ratio indicates how many times the profits available for ordinary dividend distribution cover the actual dividend paid. This ratio is important to the investor for two reasons:

- It gives the investor some idea of security of future dividends.
- Investors can check to ensure that management are not paying out all earnings but are pursuing a prudent policy of ploughing back some part of the annual profit.

Investors and would-be investors may use these ratios as a basis for future investment decisions. Therefore, the ratios may have a direct effect on the demand for, and the market price of, the shares.

For this reason, the Board of Directors should always endeavour to maintain a careful balance between the payment of dividends and re-investment.

- If dividends are too low or are infrequent, the market price of the shares may fall.
- Generous distribution of dividends may inhibit the ability of a company to expand without resort to fresh capital or loans, besides depleting current liquid resources.

In practice, a dividend cover of 2-3 times is commonly found. We can see that ABC Ltd has distributed all of the profits after tax in the form of dividends in both years. This is not a good sign.

Earnings per Share (EPS)

This is a very important ratio and one which is covered by the accounting standard SSAP 3 as amended by FRS 3.

Formula

The earnings per share (EPS) calculation is based on the following formula as defined by FRS 3:

“The profit in pence attributable to each equity share, based on the profit (or in the case of a group the consolidated profit) of the period after tax, minority interests and extraordinary items and after deducting preference dividends and other appropriations in respect of preference shares, divided by the number of equity shares in issue and ranking for dividend in respect of the period.”

Or in other words:

Profit (or consolidated profit) for the financial year

less Taxation

Minority interests

Extraordinary items

Preference dividends

divided by Number of equity shares in issue which rank for dividend.

An examination of the accounts of ABC Ltd for 20x1 reveals an earnings per share of 7.65 pence i.e.

$$\frac{£61,200}{£800,000} \times 100 = 7.65\text{p}$$

Complicating factors

EPS seems a simple formula to adopt but in practice this can be very much otherwise. We have listed some complications below, sufficient for your purposes.

- The capital structure of the company may not remain static throughout the accounting period.
- Dividends payable in respect of certain types of preference shares may be deducted from after-tax profits, whether or not the dividend has actually been paid.
- Normally, losses should be determined as if profit had been made and the result be shown as a loss per share but complications can arise when the tax charge for a particular year is reduced as a result of losses brought forward.

Further, there are two methods of calculating EPS:

- Net basis = Profit less all taxation
- Nil basis = Profit less constant elements of taxation (i.e. the profit figure used is after the tax occurring if distributions were nil). It is called the “Nil basis” because it seeks to calculate what the earnings would be if there were no dividend. Most companies will not normally incur

either of the variable tax charges, and the resultant earnings per share will therefore be the same on both bases.

SSAP 3 recommends that where there is a material difference between earnings per share on the Net basis and the Nil basis, both shall be reported.

In the audited accounts of listed companies, the earnings per share should be shown on the face of the profit and loss account on the net basis both for the period under review and for the corresponding previous period.

The basis of calculating earnings per share should be disclosed either in the profit and loss account or in a note to the accounts. In particular the amount of the earnings and the number of equity shares used in the calculation should be shown.

Where earnings per share are likely to be diluted in the future as a result of further shares issues, this information should also be shown on the face of the profit and loss account.

Dividend Yield Ratio

$$\text{Dividend yield ratio} = \frac{\text{Nominal value of share} \times \text{Dividend \%}}{\text{Market value}}$$

Dividends declared are always based as a percentage of the nominal value of issued share capital. Therefore, in 20x1 ABC Ltd has declared a dividend of 7.65%, but the true return an investor obtains is on the current market value, rather than on the nominal value of the share. If the current market value of the shares of ABC Ltd is £1.20, this indicates that the shareholders are obtaining a yield of 6.375%.

$$\frac{\text{Nominal Value } \pounds 1.00}{\text{Current Market Value } \pounds 1.20} \times 7.65\% = 6.375\%$$

Whether this is satisfactory depends on the yield acceptable to the investor and the potential for future capital growth. In particular, this ratio should be considered in the light of other investment ratios (e.g. profits retained via earnings per share) rather than in isolation.

Price : Earnings Ratio

This ratio may be calculated in two ways as follows:

- $\frac{\text{Market price per share}}{\text{Earnings per share}}$ or
- $\frac{\text{Total market value of issued share capital}}{\text{Profits after Corporation tax and Preference dividend}}$

The ratio is ascertained by comparing the market price of an ordinary share with the earnings per share (after deduction of corporation tax and preference dividends). This may be expressed as so many years purchase of the profits (in other words, assuming stability of market price, an investor's capital outlay will, at the present level of earnings, be recouped after so many years, in the form of either dividends received or capital growth by virtue of retained profits). On the assumption that a person who buys a share is buying a proportion of earnings, the larger the PE ratio, the higher is the share valued by the market. In other words, the ratio indicates how many times the market price values earnings. Assuming a market value of £1.20, the price:earnings ratio of ABC Ltd is:

$$\frac{\pounds 1.20}{7.65\text{p}} = 15.7$$

F. LIMITATIONS OF HISTORICAL COST REPORTING

As we come to the end of the financial accounting part of this course, you have no doubt become aware of the limitations of cost reporting using the historical accounting convention. Let us now consider some of those limitations.

- **Unrealistic fixed asset values**

The values of some assets, particularly land and property, generally increase substantially over the years, especially in times of high inflation. This makes comparisons between organisations using ratios such as return on capital employed very dangerous. You must ensure that you are comparing like with like. Also, it is not sensible for a company to undervalue its assets.

- **Invalid comparisons over time**

Because of the changing value of money a profit of £50,000 achieved this year is not worth the same as £50,000 profit earned five years ago. Again, there is the problem of comparing like with like.

- **Inadequate depreciation**

There are two reasons for this:

- Sufficient sums may not be provided to replace an asset which has increased in value.
- The annual depreciation charge may not be a true indicator of the economic value of the asset used in that year.

- **Holding gains not disclosed**

Let us assume that we buy an article on 1 January for £100 and sell it on 31 March for £200. Historical cost accounting tells us that a profit of £100 has been made and we may be tempted to withdraw £100 and spend it on private needs. However, if at 31 March it costs us £150 to replace the article sold, we cannot now do it because we have only £100 left. The “true” position at 31 March when the article was sold was a holding gain of £50 and an operating profit of only £50.

- **Gains on liabilities and losses on assets were not shown**

This means that we will pay creditors in money worth less than when we bought goods but, similarly, debtors will pay us in money worth less than when we sold goods.

You should be able to appreciate that the effect of the above problems will lead to an overstatement of what might be considered to be the correct profit figure. This may lead to companies being pressed by shareholders to declare higher dividends than is prudent and almost certainly will lead to higher taxation!

Study Unit 16

Introduction to Costs and Management Accounting

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A. THE NATURE OF MANAGEMENT ACCOUNTING

The Chartered Institute of Management Accountants has given the following definitions:

- **Management accounting** is:

“The provision of information required by management for such purpose as:

1. *Formulation of policies,*
2. *Planning and controlling the activities of the enterprise,*
3. *Decision-taking on alternative courses of action,*
4. *Disclosure to those external to the entity (shareholders and others),*
5. *Disclosure to employees,*
6. *Safeguarding assets.*

The above involves participation in management to ensure that there is effective:

- (a) *formulation of plans to meet objectives (long term planning),*
- (b) *formulation of short term operation plans (budgeting/profit planning),*
- (c) *recording of actual transactions (financial accounting and cost accounting),*
- (d) *corrective action to bring future actual transactions into line (financial control),*
- (e) *obtaining and controlling finance (treasurership),*
- (f) *reviewing and reporting on systems and operations (internal audit, management audit).”*

- **Cost accounting** is:

“That part of management accounting which establishes budgets and standard costs and actual costs of operations, processes, departments or products and the analysis of variances, profitability or social use of funds.”

Note that the use of the term *costing* is **not** recommended by the CIMA.

Purpose of Cost Accounting

When cost accounting was first used, its main purpose was to provide additional information concerning the financial accounts of an organisation. For many firms this is still its main purpose, and this usually implies historical cost accounting and the production of regular detailed statements and statistics.

A more modern concept of cost accounting is that its purpose is to assist management by providing **control** information. This usually demands more from the cost and management accountant. He or she will still produce statistical statements but comparisons will be made with *budgets* and *standards*. The exception system of reporting – advising management only where action is required – will probably be used.

Objectives of a Cost Accounting System

Every organisation should have its own tailor-made cost accounting system and each system will have its own objectives. Indeed, different organisations will use cost accounting for different purposes. Nevertheless, every system will involve some of the objectives listed below.

- **Cost control**

This will be assisted by the following processes:

- (a) Ascertaining the cost of each product (or service), process and department. Costs must be ascertained in phase with manufacturing activity, enabling remedial action to be taken quickly when it is required.
 - (b) Comparing the costs with budget, standard or past performance figures to indicate the degree of efficiency attained.
 - (c) Analysing the variances from budget or standard figures in order to highlight inefficiency and waste and to identify the person or department responsible, so that prompt, constructive action may be taken.
 - (d) Disclosing to what extent production facilities are used and indicating the amount and cost of idle and waiting time.
 - (e) Presenting the information suitably to management, in such a form as to provide a guide in taking any action.
- **Advice to management in the formulation of policy**
This will include:
 - (a) Production of short-period profit and loss accounts;
 - (b) Provision of information to assist in the regulation of production and the systematic control of the organisation;
 - (c) Provision of special investigations and reports, e.g.
 - (i) Whether to make a part or to sub-contract, or
 - (ii) The advisability of installing new machinery.
 - **Advice on the effects of management policy**
This will be disclosed through reports (both regular reports and those following special investigations).
 - **Estimating and price setting**
Figures will be provided from standards or past results as the basis of future estimates.
Cost is an important factor in price setting, but it is not the only one; demand and competitive activity are also crucial. Therefore, a firm's profitability may depend largely on its ability to control costs in ways described above.

Cost Accounting Compared with Financial Accounting

You are already familiar with the end products of financial accounting, namely the balance sheet and the profit and loss account. These are valuable documents for management, the first giving the position of a company or firm at a specific time, the second showing the results of the company's operations over a specific period of time. The books of accounts from which the profit and loss account and balance sheet are derived are also of value since they provide a record of every transaction.

Despite the value of the financial accounts, it was their inadequacy which gave rise to the introduction of cost accounting and the development of cost accounting techniques. The financial accounts show primarily external transactions (sales, purchases, borrowing, etc.) and show the profit for the organisation as a whole. Management requires detailed knowledge of the **cost** of each product or unit, of each department or process, to show how the profit was built up and the **relative profitability** of each section of the business. Cost accounting has now become an essential factor of every business.

It is of interest that in recent years "integrated accounts" have grown in popularity. Integrated accounts combine the financial and cost accounts into one set of books. We seem to have come full circle, from the separation of the financial and cost accounts, through the development of cost

accounting, to the joining together of the two systems into one integral system. Of course, in many businesses, increasing computerisation has assisted this development.

B. ELEMENTS OF COST

The expenditure we consider in cost accounting is, of course, the same expenditure (subject to certain considerations which will be mentioned) as that which is dealt with in the financial accounts. It is merely that we are looking at it in a different way. Whereas the financial accounts are normally concerned only with the nature of the expense, e.g. whether it is wages, lighting and heating, etc., the cost accounts are concerned with the *purpose* of the expense, e.g. whether the wages are in respect of, say, manufacturing or distribution, and if manufacturing, whether they are in respect of labour directly or indirectly concerned with the product, and so on.

All expenditure can be classified into three main groups – *labour, materials and expenses*. The costs incurred under these headings can be further sub-divided in two important ways:

- *direct and indirect costs* – items which can or cannot be directly applicable to a product; and
- *fixed and variable costs* – according to whether or not the level of cost varies with the level of output.

You need to be clear about these distinctions.

Direct and Indirect Costs

Direct costs cover any expense that can be wholly associated with a particular product or service. The total of such direct costs – direct materials, direct labour and direct expenses – is known as *prime cost*.

The total of indirect materials, indirect labour and indirect expenses is called *overhead*.

Direct labour cost

This is defined as:

“The cost of remuneration for employees’ efforts and skills applied directly to a product or saleable service and which can be identified separately in product cost.”

Examples of direct labour, as defined above, would include the costs of employing bricklayers, machine operators, bakers, miners, bus drivers. There is no doubt as to where you would charge these labour costs. Doubt would arise, however, with a truck driver’s wage in a factory. His wage cannot be charged direct to any product, as he is helping many departments and operators. Therefore, his wage would have to be classified as indirect. In a few exceptional circumstances it may be established that the truck driver is employed only to transport materials for the manufacture of one product. If this were the case, his wage could be charged direct to the product, and he would be as much a direct worker as the operator who is using the materials.

The cost of any idle time of the productive workers is not a direct labour cost.

Direct materials cost

These are materials:

“entering into and becoming constituent elements of a product or saleable service and which can be identified separately in product cost.”

The following materials fall within this definition:

- All materials specially purchased for a particular job, order or process.
- All materials requisitioned from the stores for particular production orders.
- Components or parts produced or purchased and requisitioned from the finished goods store.

- Material passed from one operation to another.

Thus, the metal used to make a car is a direct material, but the oil used to lubricate the production machinery is an indirect material (part of the manufacturing overheads). Cost of carriage inwards is usually added to material cost.

Direct expenses

These are costs, other than materials or labour, which are incurred for a specific product or saleable service.

Direct expenses are not encountered as often as direct materials or labour costs. An example would be electric power to a machine, provided that the power is metered and the exact consumption by the machine is known. We can then charge the cost of power direct to the job. More often, however, we will know only the electricity bill for the whole factory, so this will be an indirect expense.

Other examples of direct expenses include:

- the line of special tools for one particular production order
- the cost of special designs
- royalties payable.

Overhead

Overhead is the total cost of indirect labour, indirect materials and indirect expenses.

Examples of indirect materials include oils, cotton waste and grease. Examples of indirect labour include the costs of employing maintenance workers, oilers, cleaners and supervisors. Examples of indirect expenses include lighting, rent and depreciation.

Overheads may be divided into four main groups:

- works or factory expense;
- administration expense;
- selling expense;
- distribution expense.

Fixed and Variable Costs

There is a further subdivision of costs which we may briefly note here (and about which we will say more later), and that is between fixed costs and variable costs:

- ***fixed costs*** are those which remain constant (in total) over a wide range of output levels;
- ***variable costs*** are those which vary (in total) more or less according to the level of output.

Examples of fixed costs include rent, rates, insurance, depreciation of buildings and management salaries. Examples of variable costs include raw materials, commission on sales, piece-work earnings.

This division is of great significance, and we shall be dealing with it later. Observe, now, that by its very nature “prime cost” consists of variable items only, while the various overhead categories may contain some of each kind.

C. THE COSTING PROCESS

Basic Costing Methods

The basic costing method employed by an organisation must be devised to suit the methods by which goods are manufactured or services are provided. The choice is between specific order costing, service/function costing and continuous operation/ process costing.

- **Specific order costing**

This costing method is applicable where the work consists of separate contracts, jobs or batches, each of which is authorised by a special order or contract.

The subdivisions of specific order costing are:

- (a) ***Job costing***

This applies where work is undertaken to a customer's special requirements. Each "job" is of comparatively short duration. Throughout the manufacturing process, each job is distinct from all other jobs. Examples of industries using job costing are: building maintenance, certain types of engineering (e.g. manufacture of special purpose machines) and printing.

- (b) ***Batch costing***

This is a form of specific order costing which applies where similar articles are manufactured in batches, either for sale, or for use within the undertaking. In most cases the costing is similar to job costing.

- (c) ***Contract costing***

This applies when work of long duration is undertaken to customers' special requirements, e.g. builders, civil engineers, etc.

In job costing, costs of each job (or batch) can be separately identified.

- **Continuous operation/process costing**

This is the basic costing method applicable where goods or services are produced by a sequence of continuous or repetitive operations or processes to which costs are charged before being averaged over the units produced during the period. This procedure is widely used, for example, in the chemicals industry.

- **Service/function costing**

This is the method used for specific services or functions, e.g. canteens, maintenance and personnel. These may be referred to as service centres, departments or functions.

We shall examine some of these methods in detail in a later unit.

Cost Centres and Cost Units

A **cost centre** is any unit within the organisation to which costs can be allocated. It is defined by CIMA as:

"a location, function or items of equipment in respect of which costs may be ascertained and related to cost units for control purposes".

It could be in the form of a whole department or an individual, depending on the preferences of the organisation involved, the ease of allocation of costs and the extent to which responsibility for costs is decentralised.

Thus an organisation which prefers to make senior management alone responsible will probably have very few centres to which costs are allocated. On the other hand, firms which allocate responsibility further down the hierarchical ladder are likely to have many more cost centres.

If we were to take as an example a small engineering firm, it may be the case that it is organised so that each machine is a cost centre. It may also be the case, of course, that it is not always beneficial to have too many cost centres. This is partly because of the administrative time involved in keeping records, allocating costs, investigating variances and so on, but also because an operative of a single machine, for instance, may have no control over the costs of that machine in terms of power, raw materials, etc., along with any apportioned cost.

This brings us to another point, which is the distinction between the direct costs of the centre and those which are apportioned from elsewhere (e.g. general overheads). Although it is important to allocate out as much cost as possible, it must also be remembered that the cost centre has no control over the apportioned cost. This is important when considering who is responsible for the costs incurred.

An important part of any costing system is the ability to apply costs to *cost units*. The CIMA Official Terminology describes cost units as:

“A quantitative unit of product or service in relation to which costs are ascertained”.

Thus, a cost unit in a hospital might be an operation or the cost of a patient per night. Generally, such terms are not mutually exclusive, although it is of course better to take a consistent approach to aid comparison. Once the cost system to be used by the particular organisation has been identified, costs can be coded to it (we shall look at cost codes in more detail shortly) and its total cost built up. This figure can then be compared with what was expected or what happened last year or last month and appropriate decisions taken if action is required.

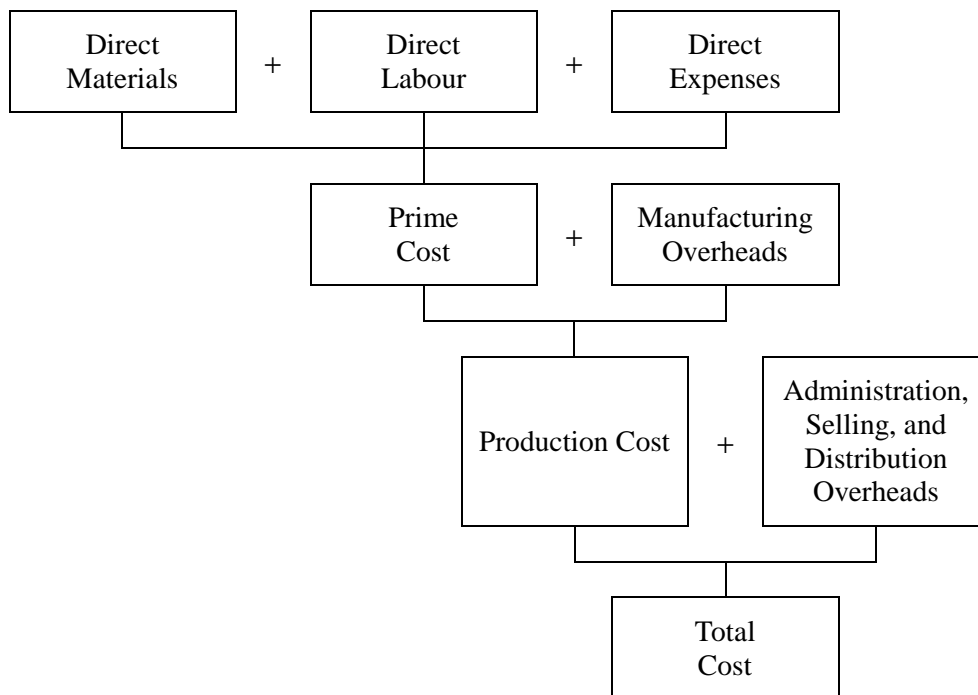
The point is that the organisation is able to identify the lowest item in the system that incurs cost, which can then be built up into the total cost for a cost centre by adding all the costs of the cost units together.

Different organisations will use different cost units; in each case it will be the most relevant to the way they operate. Here are a few examples:

- Railways – cost per tonne mile.
- Airlines – cost per flight/cost per passenger.
- Manufacturing – cost per batch/cost per contract.
- Oil extraction – cost per 1,000 barrels.
- Textile manufacture – cost per garment.
- Football clubs – cost per match.
- Car manufacture – cost per vehicle.

Structure of Costs

Total cost is built up of constituent elements as set out in Figure 16.1.

Figure 16.1: Structure of costs**Example 1 – Confectionery industry**

The cost of production of most commodities is made up mainly of the cost of the raw materials of which they are manufactured and the cost of labour which is employed making them, i.e. wages. The following is the breakdown of the costs involved.

	£	£	£
Direct Materials Consumed			
Flour			
Opening stock		2,080	
Purchases		<u>5,720</u>	
		7,800	
<i>less</i> Closing stock	990		
Part-finished goods	<u>300</u>	<u>1,290</u>	6,510
Gelatine			
Opening stock		1,720	
Purchases		<u>3,180</u>	
		4,900	
<i>less</i> Closing stock	55		
Part-finished goods	<u>60</u>	<u>115</u>	4,785
Sugar and other materials			
Opening stock		5,040	
Purchases		<u>10,920</u>	
		15,960	
<i>less</i> Closing stock	4,985		
Part-finished goods	<u>360</u>	<u>5,345</u>	<u>10,615</u>
Cost Of Raw Materials Used			21,910
Direct Labour			3,720
Direct Expense			<u>—</u>
Prime Cost			25,630
Factory Overhead			<u>6,650</u>
Factory Cost (Cost Of Production)			32,280

To this total of factory cost will be added administration, selling and distribution expenses, to arrive at a figure of total cost, to which will be added profit to give the selling price. (This method of costing is known as Absorption Costing – see later.)

Example 2 – Photographic industry

Let us now consider a business which manufactures cameras, where the amount of labour involved in manufacture is small compared with the amount of precision machinery which is necessary for the manufacture of efficient apparatus. In such an industry, costs arising from the depreciation and obsolescence of machinery may be of much greater importance compared with the cost of materials and labour than they were in the case of the confectionery manufacturing company. These charges which are related only indirectly to output are said to constitute *indirect* expenditure, as against materials and labour and other similar items which constitute *direct* expenditure.

In addition to depreciation, all the charges incurred in the general offices (such as salaries of managers, rent and rates) together with the expenses involved in marketing the product (such as advertising and carriage) must be included in the indirect expenses. You will appreciate, therefore, that in order to give a reflection of the cost of production for each unit of output, accounts must be prepared to show the allocation of these indirect expenses as well as the direct expenses (provided it is intended to follow *absorption costing* methods rather than *marginal costing* – see later).

Reason for Analysis

We have analysed expenses:

- as direct or indirect cost, under the headings “material”, “labour”, “expenses”.
- by function, i.e. factory, administration, selling and distribution.

The treatment of costs and their classification as direct or indirect is important as it has a bearing on the accuracy of the final result. The more items which can be charged direct to a cost centre or cost unit, the smaller the number of remaining items whose costs must be apportioned. Apportioning costs is a subjective process so the result can never be completely accurate.

Nevertheless, all businesses will have examples of direct costs which are treated as indirect. This is done because it is more practical, or because it would cost more than the article is worth to segregate the cost and charge direct. For instance, in the clothing industry, cotton thread is treated as an indirect material even though it is part of the finished product, because it would be far too costly to measure the amount which has been used on each garment.

D. COSTING PRINCIPLES AND TECHNIQUES

Whichever costing method is in use (a choice which will be largely dictated by the production method), there is a choice of principles and techniques which may be adopted in presenting information to management. The main ones with which we shall be concerned here are outlined below and we will study them in detail later.

- **Absorption costing**

This principle involves *all* costs, including the costs of selling and administration, being allotted to cost units. Total overheads are “absorbed”, via the method thought most appropriate.

- **Marginal costing**

This is a principle whereby *variable* costs only are charged to cost units, and the fixed cost attributable to the relevant period is written off in full against the “contribution” for that period, contribution being the difference between total sales value and total variable costs. At this stage therefore, remember when using marginal costing, *do not attempt to apportion fixed costs to individual cost units*.

- **Variance accounting**

This is a technique whereby the planned activities of an undertaking are quantified in budgets, standard costs, standard selling prices and standard profit margins. These are then compared with the actual results, and note is taken of the differences, i.e. the “variances”, for subsequent examination.

E. COST BEHAVIOUR PATTERNS

As we saw earlier in this study unit, costs can be divided either into direct and indirect costs, or variable and fixed costs.

Direct costs are *variable*, that is the total cost varies in direct proportion to output. If, for instance, it requires £10 worth of material to make one item it will require £20 worth to make two items and £100 worth to make ten items and so on.

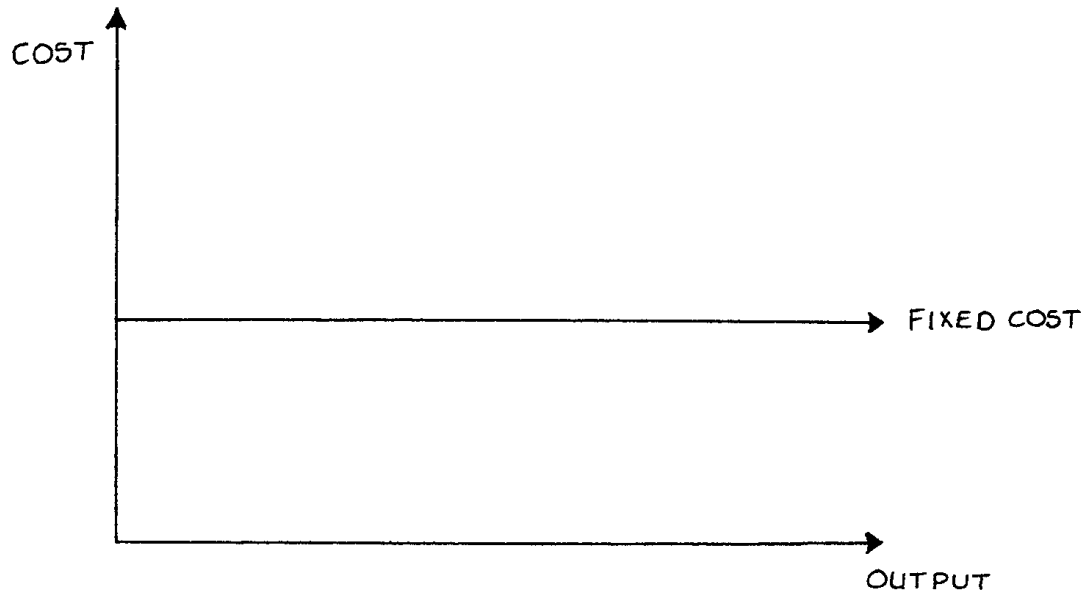
Overhead costs, however, may be either fixed, variable or semi-variable.

Fixed Cost

A fixed cost is one which **can** vary with the passage of time but, **within limits**, tends to remain fixed irrespective of the variations in the level of output. All fixed costs are overhead. Examples of fixed overhead are: executive salaries, rent, rates and depreciation.

A graph showing the relationship of total fixed cost to output appears in Figure 16.2.

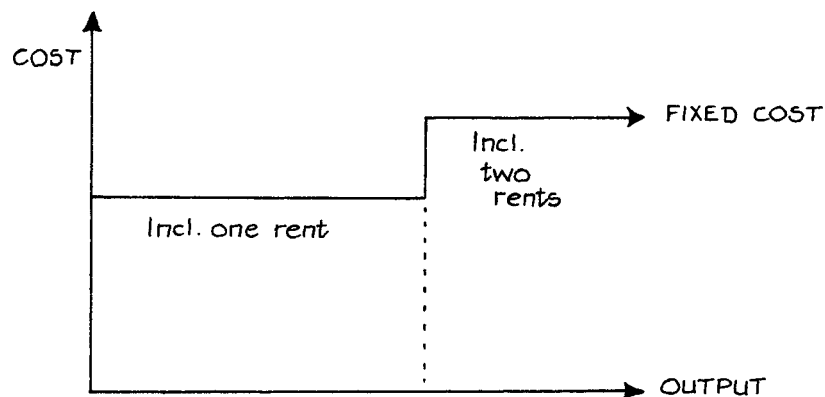
Figure 16.2: Fixed costs



Note the words “within limits” in the above description of fixed costs. Sometimes this is referred to as the “relevant range”, that is the range of activity level within which fixed costs (and variable costs) behave in a linear fashion.

Suppose an organisation rents a factory. The yearly rent is the same no matter what the output of the factory is. If business expands sufficiently, however, it may be that a second factory is required and a large increase in rent will follow. Fixed costs would then be as in Figure 16.3.

Figure 16.3: Change in fixed costs



A cost with this type of graph is known as a step function cost for obvious reasons.

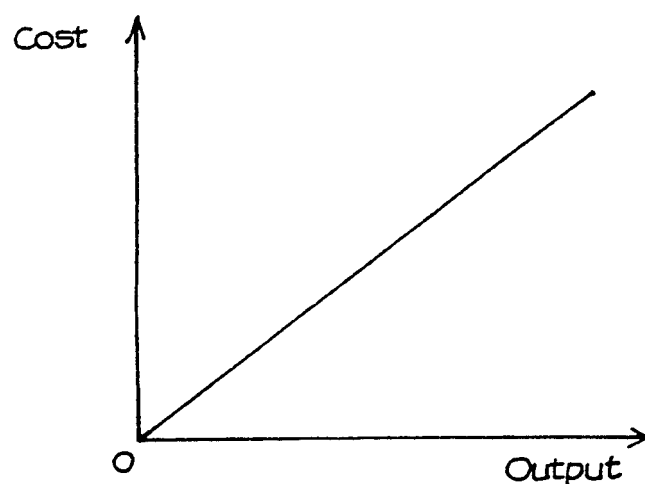
Variable Cost

This is a cost which tends to follow (in the short term) the level of activity in a business.

As already stated, direct costs are by their nature variable. Examples of variable **overhead** are: repairs and maintenance of machinery; electric power used in the factory; consumable stores used in the factory.

The graph of a variable cost is shown in Figure 16.4.

Figure 16.4: Variable costs



Semi-Variable (or Semi-Fixed) Cost

This is a cost containing both fixed and variable elements, and which is thus partly affected by fluctuations in the level of activity.

For examination purposes, semi-variable costs usually have to be separated into their fixed and variable components. This can be done if data is given for two different levels of output.

Consider the following example:

At output 2,000 units, costs are £12,000.

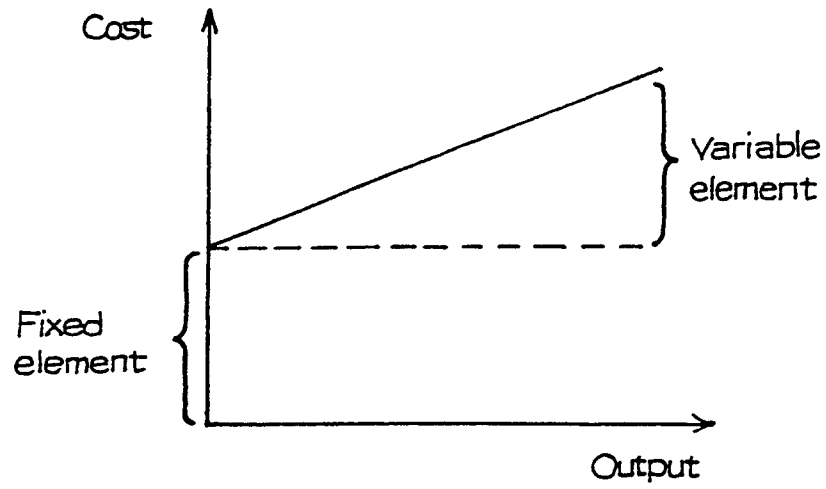
At output 3,000 units, costs are £17,000.

Therefore for an extra 1,000 units of output, an extra £5,000 costs have been incurred. This is entirely a variable cost, so the variable component of cost is £5 per unit.

Therefore at the 2,000 units level, the total variable cost will be £10,000. Since the total cost at this level is £12,000, the fixed component must be £2,000. You can check that a fixed component of £2,000 and a variable component of £5 per unit gives the right total cost for 3,000 units.

An example of a semi-variable cost is the cost of a telephone, where there is a fixed rental charge and then a charge of so much per unit. The graph is shown in Figure 16.5.

Figure 16.5: Semi-Variable (or Semi-Fixed) Cost



The amount per unit of the variable element of the cost is equal to the slope of the line.

Study Unit 17

Overheads and Absorption Costing

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A. OVERHEADS

Overhead is defined as:

The total cost of indirect materials, indirect labour and indirect expenses.

This means those items of material, labour or expense which, because of their general nature, **cannot be charged direct to a particular job or process** but have to be spread in some way over the various jobs or processes.

Classification of Overheads

There are three main classes of overheads, i.e. production, administration, and selling and distribution. These are associated with the three main functions of the business organisation and we should, as a first step, attempt to classify overhead expenditure into the appropriate categories. There are certain items of cost which appertain to all three, such as electricity, rent and rates, and it will be necessary to apportion these costs between the main categories.

(a) **Production overheads**

Before any business can start producing goods, it must have a building, which must have heat, light and ventilation and be provided with steam or electricity to operate the machines. The building must be kept clean and will need repair and redecoration from time to time. In addition, rent and rates will have to be paid. The products will have to be designed and production must be planned, supervised and checked. Records have to be kept, wages calculated, some form of stores must be operated and materials must be conveyed from point to point within the building.

These functions, and others, are not directly concerned with actual production, but are nonetheless essential and may be looked upon as services to the actual job of production. It is the cost of providing these services which constitutes the production overheads. Such overheads include:

- Rent and rates of buildings and land
- Insurance and depreciation of plant and machinery and factory buildings
- Salaries of the chief technical officials
- Repairs and maintenance of plant and machinery
- Lubrication of machinery
- Consumable stores used in the factory
- Holidays, paid sick leave and idle time of factory employees
- Factory heating and lighting
- Internal transport expenses

(b) **Selling and distribution overheads**

The dividing line between production overheads and selling and distribution overheads comes when the finished goods are delivered to the finished goods store.

Examples of selling and distribution overheads include:

- Salesmen's salaries, expenses and commission
- Sampling
- Advertising
- Carriage outwards

- Van drivers' wages
- Warehouse charges
- Depreciation of delivery vans

(c) **Administration overheads**

Examples include:

- Office salaries
- Office heating and lighting
- Office repairs
- Depreciation of office machinery
- Postage
- Stationery
- Share of rates (for the office area)

B. COST ALLOCATION AND APPORTIONMENT

The definitions of cost allocation and cost apportionment are as follows:

- **Cost allocation**

This is the charging of **discrete**, identifiable items of cost to cost centres or cost units. For example, repairs to the building housing the raw materials store could be allocated directly to the stores department cost centre.

- **Cost apportionment**

This is the *division* of costs amongst two or more cost centres in proportion to the estimated benefit received, using a proxy, e.g. square feet.

Those items which cannot be allocated must be apportioned. As the definition implies, there is no single correct way to apportion costs. We have to use the most logical basis possible with the data at our disposal.

Methods of Cost Apportionment

The following are among the methods of cost apportionment found in practice:

(a) **Capital value of cost centre**

Where cost is increased by reference to the capital value of the cost centre, it should be apportioned in the same way, e.g. fire insurance premium charged by reference to capital value.

(b) **Cost centre labour cost**

Where the cost depends on the extent of labour cost of the centre, such as in the case of employers' liability insurance premiums, this should also form the basis for the apportionment of the premium paid.

(c) **Cost centre area**

Where cost depends on the floor area it should be apportioned in the same way, e.g. rent and rates.

(d) **Cost centre cubic capacity**

Where cost is incurred in relation to cubic capacity it should be spread back on this basis, e.g. heating.

(e) Number of employees at cost centre

The cost of providing a canteen service is generally proportional to the numbers employed, so it is reasonable to apportion it by reference to the numbers employed at each cost centre.

(f) Technical estimate

The chief engineer of a factory is in a position to estimate how certain expenses should be apportioned between the various cost centres of the factory. Examples of this type of expense are:

- **Light**

The wattage used in each department can be calculated and the cost of lighting apportioned to each cost centre accordingly.

- **Power**

The horse-power of machines in each cost centre can be established and the cost of power apportioned on this basis.

(g) Proportionate to materials issued

The expenses of operating the stores department, and “normal” stores losses, may be apportioned by this method, measuring materials by value, weight or volume, as appropriate.

(h) Proportionate to production hours

There are many items of expenditure which can be apportioned on this basis, although the figures are usually available only where a fairly comprehensive cost accounting system is in operation. Either labour-hours or machine-hours may be used.

Items which may be apportioned on this basis are:

- Overtime wages (where not allocated direct)
- Machine maintenance (where not chargeable direct)

Example 1

A company has two production departments, X and Y, and three service departments – Stores, Maintenance and Production Control. The data to be used in apportioning costs is shown in Table 17.1.

Table 17.1

	Stores	Main-tenance	Production control	X	Y	Total
Areas in sq m	300	400	100	3,000	4,200	8,000
No. of employees	4	12	30	200	300	546
Value of equipment (£000s)	–	8	–	20	12	40
Electricity (000 units)	–	20	–	320	210	550
No. of extraction points	1	2	–	14	23	40
Indirect material cost (£)	11	25	44	31	63	174
Indirect labour cost (£)	287	671	1,660	1,040	1,805	5,463
Maintenance hours	–	–	117	245	518	880

Table 17.2 shows an estimate of the overhead appropriate to each department or cost centre.

Table 17.2

Item	Basis of Apportionment	Total Cost £000	Stores £000	Main-tenance £000	Product'n Control £000	X £000	Y £000
Rent	Area	800	30	40	10	300	420
Indirect material	Allocation	174	11	25	44	31	63
Indirect labour	Allocation	5,463	287	671	1,660	1,040	1,805
Factory administration	No of employees	2,184	16	48	120	800	1,200
Machine depreciation	Value	440	–	88	–	220	132
Power	Electricity	550	–	20	–	320	210
Heat and light	Area	80	3	4	1	30	42
Machine insurance	Value	40	–	8	–	20	12
Fumes extraction plant	No. of extraction points	120	3	6	–	42	69
Total		9,851	350	910	1,835	2,803	3,953

However, we really need to express all overhead costs as being appropriate to one or other of the two production departments, so that we can include in the price of our products an element to cover overhead – for it is only in this way that costs incurred will be recovered. Although costs have been incurred *by* the service departments, they have really in the end been incurred *for* the production departments. The next step is therefore to **re-apportion the costs of the service departments**. The methods employed are similar to those used in the original apportionment.

Table 17.3 shows the apportionment using the following additional data:

- The total number of material requisitions was 1,750, of which 175 were for maintenance department, 1,000 for Dept X and 575 for Dept Y. This data will be used to apportion the costs of the stores department to these three departments.
- Maintenance costs will be apportioned on the basis of hours worked for each department, already given.
- Production control costs will be apportioned between Departments X and Y according to the number of employees in those departments (already given).

Note that, when a department's costs are re-apportioned, the cost is credited to that department.

Having completed the re-apportionment, you will see from Table 17.3 that the total of overhead now attributed to Departments X and Y is equal to the original total of overhead. This is something you should always check.

Table 17.3

Item	Basis of Apportionment	Stores £000	Main- tenance £000	Production Control £000	X £000	Y £000
Costs b/f from previous table		350	910	1,835	2,803	3,953
Stores Dept: costs re-apportioned	No of requisitions	-350	35	-	200	115
Maintenance Dept: costs re-apportioned	No of hours		-945	126	263	556
Production Control: costs re-apportioned	No of employees	-	-	-1,961	784	1,177
Totals		-	-	-	4,050	5,801

In this example, some of the stores department's cost was incurred on behalf of the maintenance department, but not the other way round. When service departments serve each other as well as the production departments (sometimes called reciprocal services), we must use **repeated distribution** to apportion their costs to the production cost centres. An example follows:

Example 2

A manufacturing company has two production departments (Machining and Assembly) and two service departments (Tooling and Maintenance). The expenses of the service departments are dealt with as follows:

- Tooling: 70% to Machining
20% to Assembly
10% to Maintenance
- Maintenance: 50% to Machining
30% to Assembly
20% to Tooling

Overhead incurred during the month was:

	Machining £	Assembly £	Tooling £	Maintenance £
Indirect material	4,600	5,200	1,800	600
Indirect labour	6,100	1,200	2,700	1,600
Miscellaneous	700	900	500	300

We are required to apportion all costs to the production departments.

The first stage is to find the total of all the costs incurred. We can then apportion the costs of each service department in turn until our objective is achieved.

	Machining	Assembly	Tooling	Maintenance
	£	£	£	£
Total	11,400	7,300	5,000	2,500
<i>Redistribution of service department costs:</i>				
<i>From:</i> Tooling	3,500	1,000	-5,000	500
Maintenance	1,500	900	600	-3,000
Tooling	420	120	-600	60
Maintenance	30	18	12	-60
Tooling	9	3	-12	
Total	16,859	9,341	-	-

C. ABSORPTION COST ACCOUNTING

Absorption cost accounting is the process of apportioning overheads to the products produced or the services provided, i.e. the **whole** costs of the organisation will now be **absorbed** into the final (or total) cost of the product.

Absorption cost accounting is the oldest system of cost accounting in operation. In order for costs to be absorbed as production takes place or services are provided, **two estimates** must be made:

- An **estimate of overhead** for the period; and
- An **estimate of the basis of apportionment** chosen.

A **predetermined overhead rate** (of absorption) can then be calculated. This will become clearer as we now look at the most common methods of overhead absorption found in practice.

Common Methods of Overhead Absorption

It is not possible to generalise and claim one of these methods to be the best. In broad terms, however, the first and second methods are usually preferable, since most overhead costs are time-based. For example, rates, rent, salaries and depreciation occur with the passing of time.

- **Rate per labour-hour**

This rate of absorption is given by the following formula:

$$\frac{\text{Estimated overhead for period}}{\text{Estimated number of direct labour hours in period}} = \text{Direct labour-hour rate}$$

If labour is a predominant factor in the production process, this method is preferable.

- **Rate per machine-hour**

This rate of absorption is given by the following formula:

$$\frac{\text{Estimated overhead for period}}{\text{Estimated number of machine hours in period}} = \text{Machine-hour rate}$$

If machinery is a predominant factor in the production process, this method is preferable.

- **Percentage of direct material cost**

This rate of absorption is given by the following formula:

$$\frac{\text{Estimated overhead for period}}{\text{Estimated direct materials to be used in period}} \times 100 = \text{Material percentage rate}$$

This method is normally unsuitable because overhead seldom varies in proportion to direct materials.

- **Percentage of direct labour cost**

This rate of absorption is given by the following formula:

$$\frac{\text{Estimated overhead for period}}{\text{Estimated direct labour cost for period}} \times 100 = \text{Direct labour cost percentage rate}$$

This method may be reasonable when one factory-wide wage rate applies. It will not be suitable when wage rates differ from department to department.

- **Percentage of prime cost**

This rate of absorption is given by the following formula:

$$\frac{\text{Estimated overhead for period}}{\text{Estimated prime cost for period}} \times 100 = \text{Prime cost percentage rate}$$

This method is a combination of the two methods above, so it shares the weaknesses of both.

- **Rate per unit produced**

This rate of absorption is given by the following formula:

$$\frac{\text{Estimated overhead for period}}{\text{Estimated number of units to be produced in period}} = \text{Rate per unit}$$

This method is only suitable where all the products being manufactured are of similar or equal value.

Examples

1. The budgeted production overheads and other budgeted data of Felling Limited for the year commencing 1 November are as follows:

Budgeted	Production Department 1	Production Department 2
Direct materials cost	£64,000	
Direct labour cost	£80,000	
Machine-hours	20,000	
Direct labour-hours	28,000	
Units of production		1,000
Overhead cost	£50,000	£15,000

What *five* methods could be used by Department 1 and *one* method used by Department 2 to absorb the overhead costs? Calculate the overhead absorption rates, using the methods identified and explain which method or methods are the most appropriate.

For Department 1

Total production cost is made up as follows:

	£
Direct materials	64,000
Direct labour	<u>80,000</u>
Prime cost	144,000
Overheads	<u>50,000</u>
Total production cost	<u>194,000</u>

Possible absorption methods are:

- (a) % of direct materials = $\frac{50,000}{64,000}$ = 78.1%
- (b) % of direct labour = $\frac{50,000}{80,000}$ = 62.5%
- (c) % of prime cost = $\frac{50,000}{144,000}$ = 34.7%
- (d) Direct labour-hour rate = $\frac{50,000}{28,000}$ = £1.79 per hour
- (e) Machine-hour rate = $\frac{50,000}{20,000}$ = £2.50 per hour

Overheads are incurred on a time basis and therefore should be recovered on a time basis. The most appropriate rates are, then, machine-hour and labour-hour rates.

Department 2

Here, there is only one possibility from the information available – unit of production:

$$\text{Unit of production} = \frac{15,000}{1,000} = \text{£15 per unit}$$

2. The Excel Company has a small factory with three departments – machine shop, assembly shop and canteen. The budgeted overhead costs for a 12-month period are:

	£
Rent and business rates	120,000
Heat and light	60,000
Repairs to plant and machinery	60,000
Depreciation of plant and machinery	30,000
Stock – fire insurance premium	5,000
Indirect material	25,000
Indirect wages	29,600

The following additional information is available:

	Machine Shop	Assembly	Canteen
Area – square metres	1,500	1,000	500
No. of employees	25	10	–
Indirect wages	£6,000	£7,600	£16,000
Indirect materials	£10,000	£15,000	–
Value of plant	£1,200,000	£1,000,000	£800,000
Value of stock	£75,000	£75,000	–

The budgeted direct labour wage rates are as follows:

- Machine shop £4 per hour
- Assembly shop £3 per hour

The budgeted total machine-hours for the machine shop for next year is 38,900 hours.

The budgeted total direct labour-hours for the assembly shop for next year is 16,900 hours.

Required:

- Prepare the budget overhead analysis sheet.
- Calculate the budgeted overhead absorption rate for the machine shop and the assembly shop.
- A product takes 4 hours in the machine shop (on this job it is one person per machine) using £50 of direct material and a further 2 hours in the assembly shop using another £15 of direct material. Calculate the total production cost, clearly showing the breakdown of your figure.

Answer

(a)

Overhead Analysis Sheet

Expense	Department			Total	Basis
	Machine Shop	Assembly Shop	Canteen		
	£	£	£	£	
Rent & bus. rates	60,000	40,000	20,000	120,000	Area
Heat and light	30,000	20,000	10,000	60,000	Area
Repairs to P & M	24,000	20,000	16,000	60,000	Plant value
Dep'n of P & M	12,000	10,000	8,000	30,000	Plant value
Stock insurance	2,500	2,500	–	5,000	Value
Indirect material	10,000	15,000	–	25,000	Alloc
Indirect wages	6,000	7,600	16,000	29,600	Alloc
	144,500	115,100	70,000	329,600	
	50,000	20,000	(70,000)		No of Emps
	194,500	135,100	–	329,600	

- (b) Machine shop: $\frac{£194,500}{38,900 \text{ hrs}} = £5.00$ per machine-hour
- Assembly shop: $\frac{£135,100}{16,900 \text{ hrs}} = £8.00$ per direct labour-hour (rounded to nearest £)
- (c) Total production cost is calculated as follows:

	Machine Dept		Assembly Dept		Total
	£	£	£	£	
Direct material		50.00		15.00	65.00
Direct labour	(4×4)	<u>16.00</u>	(2×3)	<u>6.00</u>	<u>22.00</u>
		66.00		21.00	87.00
Production overheads	(4×5)	<u>20.00</u>	(2×8)	<u>16.00</u>	<u>36.00</u>
Total		86.00		37.00	123.00

D. TREATMENT OF ADMINISTRATION OVERHEADS

It is not generally worthwhile attempting to be too scientific in apportioning administration costs to products.

- For *pricing purposes* the inclusion of an agreed percentage on production costs will generally be adequate.
- For *other purposes* there is no need to absorb administration costs into product costs; they can be treated as period costs to be written off in the profit and loss account.

E. TREATMENT OF SELLING AND DISTRIBUTION OVERHEADS

Variable Elements

Some elements of selling and distribution overhead vary directly with the quantities sold – for example, commission of so much per unit paid to a salesman. Such items can be charged directly to the product concerned in addition to the production cost.

Fixed Elements

Other items are incurred whether products are sold or not – for instance, rent of showrooms, salaries of salesmen. Such items may be treated as period costs and written off in the profit and loss account, or may be absorbed in one of three ways:

- **Percentage on sales value**
This method is useful when prices are standardised and the proportions of each type of article sold are constant.
- **Rate per article**
This method is particularly applicable where a restricted range of articles is produced, but it can be used for an extended range by evaluating different sizes using a points system.

- **Percentage of production cost**

Care must be taken in applying this method. For instance, suppose a company makes two products, A and B. A costs twice as much as B to produce. Therefore a percentage on production cost basis would charge A with twice as much selling and distribution overhead as B.

However, suppose there is a ready market for Product A, which means that the firm has no need to advertise it, while with Product B the firm is in competition with others and spends £5,000 pa on advertising B. Then it is clearly incorrect to charge A with twice as much overhead as B! (In fact, the cost of advertising B should have been charged directly to Product B.)

The method is, however, acceptable if the costs involved are small, or if there is a limited range of products and those costs which clearly do not vary with cost of production (as in the above example) can be charged direct.

F. ACTIVITY BASED COSTING (ABC)

In this study unit we have considered the apportionment of overheads to the product produced or service provided, as the basis of a percentage over prime or direct costs, so that each unit of production bears its fair share of the total overheads to be absorbed. The apportionments have therefore been on the basis of benefits received. However, you should also be aware of another basis of apportionment sometimes used by cost accountants, known as **Activity Based Costing (ABC)**.

ABC and Cost Drivers

This alternative basis of allocation uses the principle that the more a cost unit (i.e. product produced or service provided) causes the generation of an overhead, the more overhead it should bear as an apportioned cost. In other words, if one product type causes 50% of a particular overhead then 50% should be apportioned to it. These types of cost units are called **cost drivers** because they generate cost.

Cost accountants argue that Activity Based Costing is more relevant to the requirements of today's competitive markets than the conventional benefits of absorption costing. For instance, a certain type of manufacturing process may require a liquid waste to be treated before it can be flushed into the sewerage system. The treatment plant, once installed, may be useful for other activities as well, but because the manufacturing process is driving the cost generation of the treatment plant, then 100% of the cost should be borne by the manufacturing process rather than being apportioned across all users. Another example could be the use of delivery vehicles for moving finished goods to customers, where the same vehicles are sometimes also used for internal collection purposes. In this case Activity Based Costing would require 100% of the delivery vehicle's cost to be charged to the cost of the finished goods.

Absorption Costing v. Activity Based Costing

- Some cost accountants argue that many types of overheads, such as rent, rates, heating and lighting, telephone expenses etc. are not dependent on whether or not an individual product is made and therefore should not be shared out equally across all cost units.
- Activity Based Costing ensures that true costs are calculated.
- Activity Based Costing ensures that overheads are more effectively controlled as an element of the product cost.

Practice Questions

1. The following figures have been extracted from the books of a manufacturing company. All jobs pass through the company's two departments.

	Working Dept	Finishing Dept
Material used	£6,000	£500
Labour (direct)	£3,000	£1,500
Factory overhead	£1,800	£1,200
Direct labour-hours	12,000	5,000
Machine-hours	10,000	2,000

The following information relates to Job A100:

	Working Dept	Finishing Dept
Material used	£120	£10
Direct labour	£65	£25
Direct labour-hours	265	70
Machine-hours	255	25

You are required to:

- (a) State *four* methods of absorbing factory overheads by jobs, showing the rates for each department for each method quoted.
- (b) Prepare a statement showing the different cost results for Job A100 under any *two* of the methods referred to.
2. The following information relates to a small engineering company:

Budgeted data for next year:	<i>£000</i>
Overheads: Business rates, building insurance	800
Repairs and maintenance of machines	200
Depreciation of machinery	280
Power consumption	180
Production Manager's salary and expenses	50
Supervisors' salaries: Dept A	30
Dept B	30
Dept C	25
Heating and lighting	120
Basic hourly wage rates: Dept A	£5 per hour
Dept B	£6 per hour
Dept C	£6 per hour

Other information:

	Floor Area <i>(square metres)</i>	Machine Value <i>£000</i>	Machine Hours	Number of Employees
Dept A	10,000	1,500	6,000	100
Dept B	14,000	2,000	6,000	75
Dept C	16,000	500	8,000	75

The Production Manager's costs are to be apportioned in proportion to each department's machine-hours.

Required:

- (a) Prepare an overhead analysis sheet.
- (b) Compute machine-hourly overhead absorption rates for each department – rounded to the nearest whole pound.
- (c) Prepare a price quotation for a job which requires 30 hours' machining in Department A, 20 hours' machining in Department B and 45 hours' machining in Department C. £2,000 of material will be required from stores. Administrative/distribution overheads are absorbed by adding 20% to total production costs. The company operates a standard profit margin of 25%.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

1. (a) Four methods of absorbing factory overheads are:

- (i) Machine-hour rate = $\frac{\text{Factory overhead}}{\text{Machine hours}}$
- (ii) Direct labour-hour rate = $\frac{\text{Factory overhead}}{\text{Direct labour hours}}$
- (iii) % on direct labour = $\frac{\text{Factory overhead}}{\text{Direct labour cost}} \times 100$
- (iv) % on prime cost = $\frac{\text{Factory overhead}}{\text{Prime cost}} \times 100$

Calculation of departmental rates:

	Working Dept	Finishing Dept
Material used	£6,000	£500
Direct labour	£3,000	£1,500
Prime cost	<u>£9,000</u>	<u>£2,000</u>
Factory overhead	£1,800	£1,200
Overhead % on prime cost	20%	60%
Overhead % on direct labour	60%	80%
Direct labour-hours	12,000	5,000
Overhead rate per direct labour-hour	£0.15	£0.24
Machine-hours	10,000	2,000
Overhead rate per machine-hour	£0.18	£0.60

(b) *Cost Statements for Job A100*

(i) Using overhead rate per machine-hour

	Working Dept	Finishing Dept	Total
	£	£	£
Material used	120	10	130
Direct labour	65	25	90
Overhead (<i>see note</i>)	45.9	15	<u>60.90</u>
Total cost of job			<u>£280.90</u>

Note: Overhead for Working Dept: 255 hrs at £0.18 = £45.9

Overhead for Finishing Dept: 25 hrs at £0.60 = £15.0

(ii) Using % on direct labour

	Working Dept	Finishing Dept	Total
	£	£	£
Material used	120	10	130
Direct labour	65	25	90
Overhead (<i>see note</i>)	39	20	59
Total cost of job			£279

Note: Overhead for Working Dept: 60% of £65 = £39

Overhead for Finishing Dept: 80% of £25 = £20

2. (a)

Overhead Analysis Sheet

Expense	Department			Total £000	Basis
	A £000	B £000	C £000		
Business rates etc.	200	280	320	800	Area
R & M of mach.	75	100	25	200	Mach. value
Depreciation of mach.	105	140	35	280	Mach. value
Power	54	54	72	180	Mach. hours
Production Manager	15	15	20	50	Given
Supervisors	30	30	25	85	Given
Heat and light	30	42	48	120	Area
	509	661	545	1,715	

(b) Machine-hourly overhead absorption rates:

$$\text{Department A: } \frac{\text{£}509,000}{6,000 \text{ hrs}} = \text{£}85 \text{ per machine-hour}$$

$$\text{Department B: } \frac{\text{£}661,000}{6,000 \text{ hrs}} = \text{£}110 \text{ per machine-hour}$$

$$\text{Department C: } \frac{\text{£}545,000}{8,000 \text{ hrs}} = \text{£}68 \text{ per machine-hour}$$

(c) *Price quotation:*

	£	£	£
Direct material			2,000
Direct labour: Dept A	30 × 5	150	
Dept B	20 × 6	120	
Dept C	45 × 6	<u>270</u>	540
Production overheads: Dept A	30 × 85	2,550	
Dept B	20 × 110	2,200	
Dept C	45 × 68	<u>3,060</u>	<u>7,810</u>
Production costs			10,350
Administration and distribution overheads			<u>2,070</u>
Total costs			12,420
Profit ($33\frac{1}{3}\%$ on cost: 25% on sales)			<u>4,140</u>
			16,560

Study Unit 18

Methods of Costing

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INTRODUCTION

Costing techniques and principles – such as absorption costing (which we have seen), marginal costing and standard costing (which will be considered in later units) – are of general application to different industries and services. These techniques are used for purposes of decision making and control over costs and performance and they are applicable to all types of manufacturing and service industries.

Costing methods refers to the system (or systems) adopted to arrive at the cost of products or services within a particular organisation.

The type of costing system to be adopted should be tailored to meet the needs of the individual business and its manufacturing processes. Different types of business operate with different costing systems – the main ones which we shall consider being job, batch or process costing.

- **Job and batch costing** is used where products or batches of products are made to individual customer specifications. Examples include general engineering, printing, foundries, contracting, and building. Individual cost analyses are prepared for each separate order.
- **Process costing** applies where large quantities are made in a continuous flow or by repetitive operations. The total costs incurred are averaged over all production (see the next study unit).

Although you do not need to know the workings of job, batch or process costing systems, you do need to be aware of their features.

A. JOB COSTING

The CIMA Official Terminology refers to job costing as applying:

“...where work is undertaken to customers’ special requirements and each order is of comparatively short duration (compared with those to which contract costing applies).

The work is usually carried out within a factory or workshop and moves through processes and operations as a continuously identifiable unit. The term may also be applied to work such as property repairs and the method may be used in the costing of internal capital expenditure jobs.”

Businesses that operate in a job-costing environment generally do not manufacture for stock but instead to specific customer requirements. Very often an enquiry will be received from a prospective customer asking the firm to quote for producing a particular item. The estimating department will price up the potential work using standard charge-out rates based on its job costing system.

Pricing is generally on a “cost-plus” basis. This means that a standard percentage is added to the calculated cost to arrive at the price to the customer.

Not all work is arrived at in this way; the foregoing example only applies where new business is involved. Very often the work undertaken by a firm operating a job-costing system will be repeat business and the cost of such work will already be known.

Procedure

(a) **Setting up the system**

There are two main items to which attention must be paid when setting up a method of job costing:

- We must first establish what is to be considered as a **job** – this being our logical unit of cost. In factories where job costing is employed, we may look upon the job in any of the following ways:

- (i) An order for one large unit of production which has to be made to specification.
- (ii) An order for a quantity of stock units of production which is required to keep up the warehouse supply.
- (iii) A number of small orders for the same unit of production which can be conveniently accumulated into a batch and regarded as a single job.
- There must be an adequate method in operation whereby it is possible to allocate *distinctive numbers* to the various jobs which have to be done, so that cost can be coded by reference to the job number.

(b) Total cost of each job

The total cost of each job is obtained by labelling cost as it occurs with the number of the job on behalf of which the cost was expended. The collection of these labelled costs will give the **total job cost**.

Elements of Cost Involved

We shall now consider the elements of cost which are involved, and decide on the techniques which should be used in cost collections to obtain the appropriate cost for each job number.

(a) Accounting for materials

When dealing with the control of materials, material issued from stores has to be signed for on a *stores requisition slip*. The description and quantity of material issued is shown on this slip. If we associate the correct job number with each slip, we have the basis for associating materials used with the jobs for which they were used. Of course, where the material is indirect, the slip will bear the reference number of the appropriate *overhead account*.

Copies of the stores requisition slips will be passed to the costing department, to be priced and entered, and at the end of each costing period, they are analysed by job number and to the appropriate job account – or to an overhead account, in the case of indirect material. The total material cost posted to the debit of job and overhead accounts will, of course, equal the total of the postings to the credit of the individual stores ledger accounts.

(b) Accounting for labour

Wages will be charged as follows:

- Direct wages – direct time: charged to job number
- idle time: charged to overheads
- Indirect wages – charged to overheads

The data will be obtained in the following ways:

- The charges for labour applicable to overheads will be obtained from the *gate cards* of the indirect workers. If indirect workers serve several cost centres in the course of the week, they will fill up job cards showing the time spent on each, and the cost centre reference number.
- The direct labour force will be issued with a *job card* on which they will record the time spent on each job, and its number. The job cards will be analysed and the relevant amount posted to each job account.

(c) Accounting for overheads

Overheads are charged to the various cost units in a costing routine by means of a system of precalculated *overhead absorption rates*. The method to be used will vary from system to system, and it is almost certain that a variety of methods will be used in each organisation, dependent on the characteristics of the various cost centres, e.g. some will use a rate per

machine-hour and others a rate per labour-hour. This will give a fairer allotment of cost than the use of a blanket (average) rate to cover the whole organisation.

Specimen Cost Calculations for a Job

Job number 707, the copper plating of 100 tubes, was completed in three departments of a factory. Cost details for this job were as follows:

Department	Direct Materials £	Direct Wages £	Direct Labour Hours
X	650	800	1,000
Y	940	300	400
Z	230	665	700

Works overhead is recovered on the basis of direct labour hours and administrative overheads as a percentage of works cost.

The figures for the last cost period for the three departments on which the current overhead recovery rates are based, were:

Departments	X	Y	Z
Direct material	£6,125	£11,360	£25,780
Direct wages	£9,375	£23,400	£54,400
Direct labour hours	12,500	36,000	64,000
Works overhead	£5,000	£7,200	£9,600
Administrative overhead	£2,870	£14,686	£8,978

Calculation of the cost of job 707 is set out as follows. We can also establish the price charged, assuming a profit margin of 20% on total cost.

(a) Calculation of works overhead recovery rate

	Department		
	X	Y	Z
Works overhead	£5,000	7,200	9,600
Direct labour hours	12,500	36,000	64,000
Recovery rate per direct labour hour	£0.40	0.20	0.15
Direct labour hours spent on job 707	1,000	400	700
Works overhead recovered on job 707	£400	80	105

(b) Calculation of administrative overhead recovery rate

	Department		
	X	Y	Z
Direct materials	£6,125	11,360	25,780
Direct wages	£9,375	23,400	54,400
Works overhead	£5,000	7,200	9,600
Works cost	£20,500	41,960	89,780
Administration overhead	£2,870	14,686	8,978
Administration overhead as % of works overhead	14%	35%	10%

(c) Cost and price of Job 707

	Department			Total £
	X £	Y £	Z £	
Direct materials	650	940	230	1,820.00
Direct wages	800	300	665	1,765.00
Works overhead (<i>from (a)</i>)	400	80	105	585.00
Works cost	1,850	1,320	1,000	4,170.00
Administration overhead (<i>applying percentages found in (b)</i>)	259	462	100	821.00
Total cost	2,109	1,782	1,100	4,991.00
Profit margin 20%				998.20
Price to be charged				5,989.20

B. BATCH COSTING

Batch costing is defined in the CIMA Terminology as:

“That form of specific order costing which applies where similar articles are manufactured in batches either for sale or for use within the undertaking.

In most cases the costing is similar to job costing.”

A batch cost is described as:

“Aggregated costs relative to a cost unit which consist of a group of similar articles which maintains its identity throughout one or more stages of production.”

The main point to note, therefore, is that it is a method of job costing, the main difference being that there are a number of similar items rather than just one. Batch costing will apply in similar situations to those we mentioned in job costing, i.e. general engineering, printing, foundries, etc.

Costs will be worked out in a similar fashion to job costing and then apportioned over the number of units in the batch to arrive at a unit cost.

The following is an example of how batch costing operates.

Example

The XYZ Printing Co. has received an order for printing 1,000 special prospectuses for a customer. These were processed as a batch and incurred the following costs:

- Materials – £500
- Labour: design work – 150 hours at £15 per hour
- printing/binding – 10 hours at £5 per hour

Administration overhead is 10% of factory cost.

The design department has budgeted overheads of £20,000 and budgeted activity of 10,000 hours.

The printing/binding department has budgeted overheads of £5,000 and budgeted activity of 1,000 hours.

The cost per unit is calculated as follows.

- (a) The overhead absorption rates are as follows:

$$\text{Design: } \frac{\pounds 20,000}{10,000} = \pounds 2 \text{ per labour hour}$$

$$\text{Printing/binding: } \frac{\pounds 5,000}{1,000} = \pounds 5 \text{ per labour hour.}$$

- (b) The cost per unit can therefore be calculated as:

	£	£	
Direct material			500
Direct labour:			
Design	150 × £15	2,250	
Printing	10 × £5	50	2,300
Prime Cost			2,800
Overheads:			
Design	150 × £2	300	
Printing	10 × £5	50	350
Factory Cost			3,150
Admin. cost (10% of factory cost)			315
Total Cost			3,465

As this is the total cost of the batch, we find the cost per unit simply by dividing by the number of units in the batch, i.e.:

$$\frac{\pounds 3,465}{1,000} = \pounds 3.465 \text{ per unit } (\pounds 3.47 \text{ rounded}).$$

C. PROCESS COSTING

In job costing each job is a separate unit which maintains its identity until completion, even though various operations and processes may be involved. In process costing the situation is completely different, for here we are dealing with a *continuous production of identical products* which are often quite incapable of being identified separately and which combine to form distinct processes, the finished product of one process being the raw material of the next.

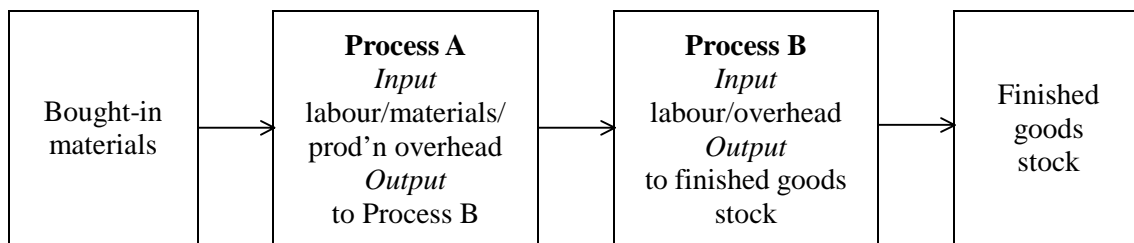
The CIMA Official Terminology defines process costing as:

“The basic costing method applicable where goods or services result from a sequence of continuous or repetitive operations or processes to which costs are charged before being averaged over the units produced during the period.”

This method of costing applies not only to the areas mentioned above, but may also be used in situations of continuous production of large numbers of low cost items such as tin cans or light bulbs.

Diagrammatically, process costing can be represented as follows:

Figure 18.1



Production is moved from process to process and the costs are transferred with it so that it is the cumulative cost that is carried to finished goods stock.

Method of Process Costing

The method is essentially one of *averaging*, whereby the total costs of production are accumulated under the headings of processes in the manufacturing routine, and output figures are collected in respect of the various processes. The total process cost is divided by the total output of the process, so that an *average unit cost of manufacturing* is arrived at for each process.

Where there are several processes involved in the production routine, it is normal to cost each process, and to build up the final total average cost step by step. The output of one process may be the raw material of a subsequent one, thus making it necessary to establish the process cost at each stage of the manufacturing operation.

Each process carried out is regarded as a *cost centre*, and information is collected on the usage of materials, costs of labour and direct expenses exclusively attributable to individual processes. Each process, in an absorption costing system, will be charged with its share of overhead expenses. (We have assumed this to be in operation throughout.)

We have stated that an average cost per unit is obtained for each process. This average cost is arrived at by dividing the cost of each process by the number of good units of production obtained from it. Hence, it is necessary to set up a *report scheme* to find the number of units produced by each process. Since it is unlikely that all material entering a process will emerge in the form of good production, the recording scheme should provide records of *scrap* from each process, in addition to records of good production achieved.

Elements of Cost Involved

(a) Material usage

The method of charging material usage will depend on the factory layout and organisation. If there is only one injection of raw material at the stage of the initial process, the problem is simplified, and material usage can be computed from the stores requisition slips. In this case, the output of the first process becomes the raw material of the second, and so on.

If further raw material is required in a subsequent process, it may be convenient to establish new material stores adjacent to the point of usage, and record the usage from the stores requisition slips.

In many cases, material may be used which is of little value unit-wise (e.g. nails) and the volume of paperwork required to record each issue would be prohibitive. In such cases, the method of charging would be to issue the anticipated usage for a costing period at one time, the issue being held for use at the point of manufacture. A physical stocktaking at the end of the period would establish actual usage of material, which could be compared with the theoretical usage expected for the output achieved.

(b) Accounting for labour

Accounting for labour where process costing is in operation is, normally, straightforward. Fixed teams of operatives are associated with individual processes, and the interchange of labour between processes is not encouraged from the point of view of efficiency. It is often as simple as collating names on the pay sheets to establish the wages cost for a process. Where process labour is interchangeable, labour charges per process may be established by issuing *job cards* to employees, to record the time spent on each process.

(c) Direct expenses

All expenses wholly and exclusively expended for one particular process will be given the proper process number and allotted to the cost centre on this basis.

(d) Overhead expenses

In absorption costing, the indirect material, labour and expenses not chargeable to one particular process must be borne, eventually, by production. Absorption rates are used as before, and we need to establish rates in advance for *each of our cost centres*. This means that the total overhead expenses of the business must be estimated and allocated or apportioned to the processes, in terms of the rules which we have already explained. As we have seen, it is necessary to assess the output expected at each cost centre. Then, the absorption rates for the cost centres can be calculated by dividing the estimated costs associated with them by the estimated output per cost centre.

In this way, we establish a relationship between overhead cost and activity and, at the close of each period, the actual activity achieved by the cost centre is multiplied by the predetermined rate, to give the charge for overheads.

Comparison of Job and Process Costing

The similarities and differences between the two methods are summarised in the following table.

Table 18.1

Job	Process
Items are discrete and identifiable.	Items are homogeneous.
Costs are allocated to individual units of production.	No attempt is made to allocate costs on an individual basis.
Losses are not generally expected to occur in the course of production.	Losses are expected to occur (see later).
Direct costs (labour, materials and product overhead) are the same under both systems.	
As costs are allocated to each unit, each item of finished production has its own costs.	As costs are allocated to the process, finished goods have an average value.
Stock consists of unlike units.	Stock consists of like units.

Treatment of By-Products

The costing of by-products of a process may be dealt with in three different ways.

- **By-products of little value**

The clerical work involved in calculating the cost of products which are of little value is not justified. The process concerned should be credited with the market value of the by-product less any selling expenses incurred in disposing of it.

- **By-products of considerable value**

As accurate an assessment as possible must be made of these by-products and the value transferred to a by-product account. The value might be based on a formula determined by consultation with the technical staff, or assessed on the market price of the by-product.

- **Joint products**

It sometimes happens that a process produces two products of approximately the same value, and here the problem is to ascertain the cost of each product up to the point of separation. This is usually done by apportioning the costs to that point on the market value of the products. The market values used may be the values at the separation point or the ultimate values after further processing.

Wastage in Process Costing

The main problem here is to distinguish between normal waste and abnormal waste; each is dealt with quite differently.

- **Normal waste**

It is almost inevitable that a certain amount of waste will occur in any process, and the cost of this expected waste must remain with the good production and be passed on to the next process. For example, if the total cost of process A was £1,000 and the total number of units produced was 1,000 (there being no wastage), the unit cost would be £1. If, however, there was a

wastage of 10%, the £1,000 transferred to the next process would represent 900 units and the unit cost would be £1.111.

The total cost of each process must therefore be absorbed by the good production.

- **Abnormal waste**

Abnormal waste may be the result of faulty material, faulty machinery or careless labour. Where this occurs, it is usual to transfer the cost to a separate account, which is written off direct to the costing profit and loss account.

Treatment of Work in Progress

One of the difficulties that arises with process costing is the valuation of work-in-progress. This is because costs need to be apportioned fairly over the units of production which, as you are now aware, are not generally separately identifiable. Materials may be added in full at the start, or at varying rates through the differing processes; the cost of labour may not necessarily be incurred in proportion to the level of output achieved.

In order to apportion costs fairly, the concept of equivalent units is used. The CIMA Official Terminology defines them as:

“A notional quantity of completed units substituted for an actual quantity of incomplete physical units in progress, when the aggregate work content of the incomplete units is deemed to be equivalent to that of the substituted quantity of completed units, e.g. 150 units 50% complete = 75 units.

The principle applies when operation costs are being apportioned between work-in-progress and completed output.”

Example

A new process has been started by your company, and for the first month costs were as follows:

Material X 400 kilos at £2.50 per kilo

Material Y 3,000 kilos at £0.80 per kilo

Labour 2,200 hours at £3 per hour

Overheads 100% of labour cost

During the first month 3,000 kilos of the product were completed and taken into stock. There was no gain or loss in process. The work in progress (i.e. 400 kilos) was considered 75% complete in relation to labour and overhead and 100% complete as far as material was concerned.

The following statement and process account for the month shows the value of completed items transferred to finished stores and the closing work in progress. Note how we treat work in progress in terms of percentage completion, and calculate an *equivalent number* of completed units.

	Material	Labour	Overheads	Total
Complete (units)	3,000	3,000	3,000	
WIP (equivalent units)	400	300	300	
Total (units)	3,400	3,300	3,300	
Costs	£3,400	£6,600	£6,600	
Cost per unit	£1	£2	£2	£5

Study Unit 19

Marginal Costing

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A. THE PRINCIPLES OF MARGINAL COST ACCOUNTING

Absorption cost systems, which we discussed previously, are based on the assumption that **all** costs should be absorbed into the products, activities or cost centres identified within the cost accounting system. This concept of cost accounting is of course, cost accounting on the basis of total cost, and is an important aid to management in the *control* of costs. However, the accountant's task of providing information on costs for *decision-making* purposes may require a different approach.

When planning the volume of output in the short term, the accountant has to provide information about the behaviour of fixed and variable costs over the planned range of output. For a number of special decisions relating to alternative courses of action, such as making or buying a component, he or she has to provide cost information which will help management to choose the most profitable course of action. The total absorption of all costs in products, etc. can lead to bad decisions, and this is why a *marginal* (or variable) cost accounting approach is used in many decision-making situations.

Elements of Cost Involved

At the heart of marginal costing is the distinction between fixed, variable and semi-variable cost. Before going any further, we should review the terms.

- **Fixed costs**

A fixed cost is one which tends to remain constant regardless of the level of production. Examples are rent and the salary of the production manager.

It should be clear to you that any expense classified as fixed is only fixed for a certain period of time, and only within certain levels of production. For instance, business rates are likely to be increased once a year or once every few years, but within the year they are fixed regardless of the level of production at the factory. If, however, production increased so greatly that it was necessary to acquire a new factory, there would be another rates demand to pay.

- **Variable costs**

Consider, on the other hand, a selling expense such as sales staff commission. If the organisation makes no sales, no payment or expense will arise. As sales begin to rise from zero, the cost of commission will increase according to the level of sales achieved. This is an example of variable costs.

- **Semi-variable costs**

Between these two extremes, one of which is affected by activity while the other is not, there is another type of cost which is partly fixed and partly variable. It is known as a semi-fixed or semi-variable cost. An example is the charge for electricity, which consists of a standing charge per quarter (the fixed element) and a charge per unit of usage (the variable element). Any semi-variable cost can be separated into fixed and variable components.

Now we can move on to marginal cost itself.

Marginal cost

CIMA defines marginal cost as:

“The variable cost of one unit of a product or a service; i.e. a cost which would be avoided if the unit was not produced or provided.”

From the above description of fixed, variable and semi-variable costs, it should be clear to you that producing one item less does not avoid any fixed cost, nor any of the fixed element of semi-variable costs.

A statement of cost on a marginal basis will therefore contain only the variable cost, built up as follows:

	<i>Cost per unit</i>	
	£	£
Direct material		X
Direct labour		X
Direct expenses		<u>X</u>
Prime cost		X
<i>add Variable overheads:</i>		
Factory	X	
Selling	<u>X</u>	<u>X</u>
Marginal cost		X

Contribution

When the total variable (or marginal) cost of a number of products is deducted from the total sales revenue, the amount that is left over is called the **contribution**. Since fixed costs have not yet been taken into account, this contribution has to cover fixed costs; any amount remaining is profit. (That is why it is called the contribution – it contributes to fixed costs and then to profit.) We can write this symbolically as:

$$S - V = F + P$$

$$(\text{Sales revenue} - \text{Variable cost} = \text{Fixed cost} + \text{Profit})$$

This is the basic equation of marginal cost accounting.

We can also talk about the **contribution per unit** of a product, which is simply the selling price minus the variable (marginal) cost.

It should be clear that under marginal cost accounting we cannot talk about the profit from any one product, since fixed costs are considered only in total and are not apportioned to the individual products. However, a number of decisions can be made by looking at the contribution: clearly, if a company maximises its contribution it is also maximising its profit, provided that fixed costs are truly fixed.

A profit statement for three products built up on a marginal cost accounting basis would appear as follows (the numbers are included purely for illustration, so that you can see the format):

	Product J	Product E	Product N	Total
	£	£	£	£
Sales	<u>1,344,000</u>	<u>840,000</u>	<u>680,000</u>	<u>2,864,000</u>
Direct materials	336,000	294,000	374,000	1,004,000
Direct labour	201,600	168,000	136,000	505,600
Variable overhead	<u>268,800</u>	<u>168,000</u>	<u>204,000</u>	<u>640,800</u>
Marginal cost	<u>806,400</u>	<u>630,000</u>	<u>714,000</u>	<u>2,150,400</u>
Contribution	<u>537,600</u>	<u>210,000</u>	<u>(34,000)</u>	<u>713,600</u>
Fixed overhead				<u>113,600</u>
Profit				£600,000

Relevant Costs

The costs which are relevant for decision-making will depend on the type of decision problem for which they are required. In the next section we will examine several different types of decision problems. However, we can at this stage identify two important points relating to relevant costs:

- **Future costs**

Costs that have been incurred in the past, known sometimes as “sunk” costs, are not relevant to future decisions, except insofar as they may help the accountant to estimate future costs.

- **Differential costs**

Anything that remains the same regardless of the alternative selected should be ignored, even if it is a future cost.

B. USES OF MARGINAL COST ACCOUNTING

Selling Price

Marginal cost accounting does have limitations as a price-setting tool but it is useful when a company has carried out some market research to ascertain the likely sales of a product at different selling prices.

Example

The variable costs of Product A are £10 per unit. The company has undertaken some market research which indicates what the likely sales at each of a number of possible selling prices would be:

Selling Price	£12	£15	£20
Sales (thousands)	20	10	4.5

The company wants to decide which selling price it should adopt.

To determine the optimum price, we need to ascertain the price at which the contribution is maximised:

Selling Price	£12	£15	£20
(a) Contribution per unit (selling price – variable cost)	£2	£5	£10
(b) Sales (thousands)	20	10	4.5
Total contribution (£000) ((a) × (b))	40	50	45

Clearly, the company should sell the product at £15, since this will maximise the contribution it makes.

Additional Contracts

In times when it is short of work, a firm can accept additional work provided that the sales revenue covers the marginal cost of that work and any **additional** fixed costs incurred. This is because, although the new work might not show a profit on a full costs basis (where it will be given a share of the total fixed costs), it will provide an additional contribution and so reduce any overall loss (or increase overall profit). In the long term, of course, a firm will not survive unless it covers all its fixed costs.

Example 1

A company manufactures articles for £6 each (variable cost) and normally sells them at £10 each. Fixed costs are £10,000 per month. The firm is currently short of work – it is selling only 2,000 units a month. It has the chance of an additional contract for 500 units a month for four months if it will

accept a reduced selling price of £8 per unit. Fixed costs will not be increased if the contract is accepted. Should the company accept the contract?

The contribution per unit on the additional contract would be £2 (£8 – £6). Since this is positive (i.e. selling price is greater than marginal cost) the contract should be accepted.

We can demonstrate the effectiveness of this decision by considering the current and potential positions:

On present sales of 2,000 units the contribution is £4 per unit (£10 – £6).

Total monthly contribution =	2,000 × £4 =	£8,000
Fixed costs, monthly, are		<u>£10,000</u>
Therefore, monthly loss =		<u>£2,000</u>

If the new contract is accepted, the additional contribution is $500 \times £2 = £1,000$ per month. Therefore, the loss is reduced by £1,000 to £1,000.

N.B. Since the contract is for four months, the company would have to take into account the likelihood of sales at the normal selling price picking up within that time. Obviously, if sales are likely to pick up, the company would prefer full price sales rather than being tied to a reduced price contract. But if sales are unlikely to improve, the reduced price contract is better than nothing!

Example 2

A company manufactures articles at a variable cost of £5 each, and usually sells them for £10 each. It has the chance of an additional contract for 600 articles at £9 each but is unsure whether to accept as fixed costs would be increased by £1,500.

Contribution per unit on the extra sales =	£4
Total additional contribution =	600 × £4 = £2,400
Additional fixed costs incurred	<u>£1,500</u>
Additional profit	<u>£900</u>

Therefore the company should accept the contract.

Selling Price for Additional Work

In the long run, a company must set selling prices which ensure that *all* its costs are covered. However, in the short term, as we have seen above, it will accept work at lower prices than normal, rather than lose the work altogether, if it is short of work. Marginal cost accounting can be used to determine the minimum price which should be charged for such additional work.

Example

A company manufactures articles at a marginal cost of £12 each, which it sells for £20. It has been approached by a charity who would purchase 2,000 articles if a mutually acceptable reduced price could be negotiated. Fixed costs are expected to increase by £6,000 if the extra 2,000 articles are produced. What is the minimum price which the company should quote for the contract?

The contribution from the extra 2,000 articles must at least cover the extra fixed costs incurred, i.e. extra contribution needed is £6,000 minimum.

Therefore, extra contribution needed per unit is:

$$\pounds \frac{6,000}{2,000} \text{ minimum} = \pounds 3 \text{ minimum}$$

Therefore, minimum price to be quoted is:

Marginal cost + £3 = £15 each.

Minimum price for whole order is $2,000 \times £15 = £30,000$.

Unprofitable Items

Consider the following statement of the profitability of three products, drawn up on a total cost basis:

Profit Statement – Total Cost Basis

Element of Cost	Total Cost	Product A	Product B	Product C
	£	£	£	£
Direct wages	12,000	3,000	4,000	5,000
Direct material	14,000	6,000	6,000	2,000
Factory overheads	5,000	1,000	3,000	1,000
Selling overheads	7,000	3,000	2,000	2,000
Total cost	38,000	13,000	15,000	10,000
Profit/(loss)	–	3,000	(1,000)	(2,000)
Sales value	38,000	16,000	14,000	8,000

From the above statement of the facts as they emerge under the total cost basis, management is entitled to assume that products B and C are distinctly unprofitable and that the obvious thing to do would be to discontinue production of these lines.

We will now evaluate the problem from the marginal viewpoint. This means eliminating fixed expenses from the figures of product cost. The figures we will assume to be fixed will be factory overheads of £3,000 and selling overheads £4,000. These elements are now excluded so that we can view the position with a greater degree of clarity.

Profit Statement – Marginal Cost Accounting Basis

Element of Cost	Total	Product A	Product B	Product C
	£	£	£	£
Direct wages	12,000	3,000	4,000	5,000
Direct material	14,000	6,000	6,000	2,000
Variable overheads				
(a) Factory	2,000	800	800	400
(b) Selling	3,000	2,000	300	700
Marginal cost	31,000	11,800	11,100	8,100
Sales value	38,000	16,000	14,000	8,000
Contribution	7,000	4,200	2,900	(100)
less Fixed expenses	7,000			
Profit	–			

From the statement above the true picture emerges, and it is possible to arrive at a policy decision which is certain to prove of greater value to the business than any decision based on the total cost statement. The following are the facts:

- Product C does not even cover marginal cost by its sales value. From this it will be seen that expansion of sales of C will result in greater and greater losses being incurred. This product should be discontinued forthwith unless there is a special necessity to have it available for sale, e.g. if A and B can only be sold if C is available.
- Product B makes a positive contribution and this is the fact which should ensure its continuance as an item of manufacture. If we had discontinued products B and C as indicated by the total cost statement, the fixed expenses of the business would fall exclusively on product A and, far from breaking even, the business would suffer a loss of £2,800. The figure of loss in the first statement attributed to product B was caused by the arbitrary application of fixed expenses.
- If we continue with products A and B, it will be seen that, given the same cost structure, the profit would be increased by £100, the amount of the marginal loss on the discontinued product C.

To summarise, the effect of a policy decision based on the statement of total cost would have meant a future loss of £2,800, whereas basing our decision on the statement of marginal cost gives a future profit of £100. The benefits to be obtained by expressing problems in terms of marginal cost are very considerable indeed.

Make or Buy

A company makes several components, one of which, X, has the following cost structure:

	<i>£ per unit</i>
Direct material	10
Direct labour	5
Variable overhead	5
Fixed overhead	6
	<u>26</u>

The component could be purchased from an outside supplier for £23 per unit. The total fixed overhead bill would be unchanged if outside purchase were adopted. Should the company make or buy component X?

Since the total fixed overhead bill is unaffected, the absorbed fixed overhead of £6 per unit is irrelevant. The cost of purchase (£23) must be compared with the marginal cost of manufacture (£20). On this basis continued production is preferable.

C. CONTRIBUTION AND THE KEY FACTOR

Up until now we have regarded contribution as a real and reasonable measure of profitability and this is perfectly in order in the absence of any special circumstances. However, special circumstances exist where there is a “key factor” in the organisational set up.

A key (or limiting) factor is any factor in an organisation which will place a limit to the level of business which can be carried on.

There are two main factors which may hinder the expansion or activity of a business.

- **Sales level**

It is obvious that, if there is a limited market for a company’s products, it will not be good business to produce output much in excess of the expected sales. In this case the sales level puts the limit on the activity which will be carried on by the business.

- **Production level**

If the plant and machinery available to manufacture the items cannot supply the demand, it is clear that the production level will be the factor which controls the level of activity.

It is also possible that a shortage of raw materials or labour can have the same effect.

If we are faced with a situation which is affected by a key or limiting factor, and there are few businesses which are not, we must ensure that we make the best use of the facilities which form the key factor, i.e. attain the highest level of profitability that is possible from their use.

- Where *sales* is the limiting factor in the operation of a business, we should endeavour to make up our sales value total of products which yield the highest margin of profit.
- Where *production* is the limiting factor, we should ensure that we produce those products which earn the highest profit margins.

In solving our business problems we should evaluate the effect of the key factors on the profit to be earned by the various products. This may be regarded as a further exercise to be undertaken when we have evaluated the various levels of contribution earned by our products.

Sales as a Key Factor

The natural method of assessing the most profitable lines when sales is the limiting factor is the expression of each product’s contribution as a percentage of the selling price. This is in fact the creation of a series of profit volume ratios for each item sold.

Example

	Product A	Product B	Product C
	£	£	£
Marginal costs	4,000	7,000	18,000
Selling price	<u>5,000</u>	<u>8,000</u>	<u>20,000</u>
Contribution	<u>1,000</u>	<u>1,000</u>	<u>2,000</u>
Profit volume percentage	20%	12½%	10%

Obviously, the rate of contribution is most effective from Product A and the ideal situation would be to direct the whole of the sales effort to A. This would give a contribution of 20% of £33,000 – or £6,600 – compared with the current £4,000.

However, it may be that there is tremendous sales resistance to Product A, making it impossible to expand the sales level, in which case Product B should be pushed. The object is to enhance the lines which are most effective in relation to the limiting factor.

Production as Key Factor

Where production is limited by the availability of material or labour, we must calculate not simply the contribution per unit of each product, but each product's contribution related to the amount of the scarce resource which it uses.

Example

A manufacturing company is reviewing its product range, as the basic material used in all its products has suddenly increased in price.

The budget figures for the next period are as follows:

	Product			
	A	B	C	D
Maximum production (units)	5,000	5,000	5,000	5,000
	£	£	£	£
Selling price per unit	25	33	43	56
Variable costs: material	9	12	17	20
labour	8	10	12	18
overhead	4	5	6	9

The total amount of material available to the company is limited by the supplier's production capacity to £200,000. The budget fixed costs total £80,000.

The company wishes to make the best use of the company's capacity and resources, and wants to know the product mix that would produce the maximum profit, and the maximum profit.

	Product			
	A	B	C	D
Selling price per unit (£)	25	33	43	56
less Total variable cost per unit (£)	<u>21</u>	<u>27</u>	<u>35</u>	<u>47</u>
Contribution per unit (£)	<u>4</u>	<u>6</u>	<u>8</u>	<u>9</u>
Contribution per £1 of material (p) - contribution divided by material cost	44	50	47	45
Order of preference of products (based on contribution per £1 material)	4	1	2	3

If we were able to choose only one product, we would choose product B, since, in terms of contribution earned, that makes the best use of the limited amount of raw material available. However, we shall also be able to produce some of the other products, and we must ascertain how much material we have left over after producing the maximum amount of B (5,000 units).

	£
Total material available	200,000
Produce 5,000 units of B: material used = $5,000 \times 12$	<u>60,000</u>
Material remaining	140,000
Produce 5,000 units of C: material used = $5,000 \times 17$	<u>85,000</u>
Material remaining	55,000
Produce 2,750 units of D: material used = $2,750 \times 20$	<u>55,000</u>
Material remaining	–

Therefore the best possible product mix is:

5,000 units of B

5,000 units of C

2,750 units of D

None of A

If this product mix is produced, the maximum profit will be obtained as follows:

	Product			Total
	B	C	D	£
Contribution per unit (£)	6	8	9	
Output (<i>units</i>)	<u>5,000</u>	<u>5,000</u>	<u>2,750</u>	
Total contribution	30,000	40,000	24,750	94,750
<i>less</i> Fixed costs				<u>80,000</u>
Profit				14,750

D. OPPORTUNITY COST

This is the value of a benefit sacrificed in favour of an alternative course of action.

Example

Take as an example a piece of equipment in a factory which can be used only in the manufacture of one article. Each article takes half an hour to make, and there is a demand for 80 per week. The cost of the article works out as follows:

	£
Material	1.00
Direct labour 30 mins @ £2 hr.	<u>1.00</u>
Marginal cost	2.00
Contribution	<u>3.00</u>
Selling price	<u>£5.00</u>

It is discovered that there is a possibility of using the equipment to make another article. The demand for this is 80 units per week. If the new article is produced, the present article will have to be discontinued. The marginal cost of the alternative article is:

	£
Material	2.70
Direct labour 30 mins @ £2 hr.	<u>1.00</u>
Marginal cost	<u>£3.70</u>

What is the minimum selling price for the alternative product?

The making of a new product always means the loss of an old one. There is therefore an opportunity cost in making the new product, i.e. the lost contribution from the old product. The minimum price must take this into account and is derived as follows:

	£
Marginal cost	3.70
Opportunity cost (lost contribution)	<u>3.00</u>
Minimum price	<u>£6.70</u>

E. COMPARISON OF MARGINAL AND ABSORPTION COST ACCOUNTING

It is appropriate at this stage to draw some comparisons between the techniques of marginal and absorption cost accounting. You should remember that both are acceptable and useful techniques, provided that they are used in *appropriate* circumstances.

- Marginal cost accounting is easier to use, since the apportionment of overheads is unnecessary. The problem of over or under-absorption of overheads at the end of an accounting period is avoided.
- Marginal cost statements which are presented to managers for control purposes usually contain only the detail for which the managers are responsible. Overheads often fall outside of an individual manager's control and are not included.
- Overhead recovery rates are often applied in an arbitrary fashion. Overall profit figures do not highlight the contributions made by individual products.
- As we saw in the last unit, marginal cost accounting is generally preferred in most decision-making situations, particularly those of a short-term or special nature.
- In the long term, overheads must be recovered if the business is to make a profit. Total absorption cost accounting may well be a better basis for long-term pricing.

Study Unit 20

Break-Even and Profit Volume Analysis

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A. BREAK-EVEN ANALYSIS

For any business there is a certain level of sales at which there is neither a profit nor a loss, i.e. the total income and the total costs are equal. This point is known as the **break-even point**. It is very easy to calculate, and it can also be found by drawing a graph called a **break-even chart**.

Calculation of Break-Even Point

Let us assume that the organising committee of a Christmas party has set the selling price of tickets at £7 per ticket. It has agreed with a firm of caterers that a buffet be supplied at a cost of £5.50 per person. The other main items of expense to be considered are the costs of the premises and discotheque, which will amount to £40 and £50 respectively. The variable cost in this example is the cost of catering, and the fixed costs are the amounts for premises and discotheque.

The first step in the calculations is to establish the amount of contribution per ticket:

Contribution

	£
Price of ticket (sales value)	7.00
<i>less</i> Catering cost (marginal cost)	<u>5.50</u>
Contribution	<u>1.50</u>

Now we must evaluate the fixed expenses involved.

Fixed costs

	£
Premises hire	40
Discotheque	<u>50</u>
Total fixed expenses	<u>90</u>

The organisers know that for each ticket they sell, they will obtain a contribution of £1.50 towards the fixed costs of £90. Clearly, it is only necessary to divide £90 by £1.50 to establish the number of contributions which are needed to break-even on the function. The break-even point is therefore 60, i.e. if 60 tickets are sold there will be neither a profit nor a loss on the function. Each ticket sold in excess of 60 will provide a profit of £1.50.

Formulae

The *general* formula for finding the break-even point is

$$\frac{\text{Fixed costs}}{\text{Contribution per unit}}$$

This is, of course, exactly what we did in the example above.

There are a number of other ways of expressing the formula, depending on the circumstances in which the analysis is to be applied.

- If the break-even point is required in terms of sales *revenue*, rather than sales *volume*, the formula simply has to be multiplied by the selling price per unit, i.e.

$$\text{BEP (sales revenue)} = \frac{\text{Fixed costs}}{\text{Contribution per unit}} \times \text{Selling price per unit}$$

In our example, the break-even point in revenue would be $60 \times £7.00 = £420$. The organisers would know that they had broken-even when they had £126 in the kitty.

- Suppose the committee were organising the party in order to raise money for charity, and had decided in advance that the function would be cancelled unless at least £60 profit would be made. The committee would want to know how many tickets it would have to sell to achieve this target.

Now, the £1.50 contribution from each ticket has to cover not only the fixed costs of £90, but also the *desired profit* of £60, making a total of £150. Clearly, they will have to sell 100 tickets ($150 \div £1.50$) to reach this point.

To state this in general terms:

$$\text{Volume of sales needed to achieve a given profit} = \frac{\text{Fixed costs} + \text{Desired profit}}{\text{Contribution per unit}}$$

Suppose the organisers actually sold 110 tickets. Then they have sold 50 more than the number needed to break-even. We say they have a *margin of safety* of 50 units or of £350 ($50 \times £7.00$).

$$\text{Margin of safety} = \text{Sales achieved} - \text{Sales needed to break-even}$$

It may be expressed in terms of sales volume or sales revenue.

- Margin of safety is very often expressed in *percentage terms*:

$$\frac{\text{Sales achieved} - \text{Sales needed to break - even}}{\text{Sales achieved}} \times 100$$

Thus the party committee have a percentage margin of safety of $\frac{50}{110} \times 100 = 45\%$

The significance of margin of safety is that it indicates the amount by which sales could fall before a firm would cease to make a profit. Thus, if a firm expects to sell 2,000 units, and calculates that this would give it a margin of safety of 10%, it will still make a profit if its sales are over 1,800 units ($2,000 - 10\%$ of 2,000) but, if its forecasts are more than 10% out, then it will make a loss.

- The *profit for a given level of output* is given by the formula:

$$(\text{Output} \times \text{Contribution per unit}) - \text{Fixed costs}$$

It should not, however, be necessary for you to memorise this formula, since when you have understood the basic principles of marginal cost accounting you should be able to work out the profit from first principles.

Consider again our example of the party. What would be the profit if the organisers sold (a) 200 tickets or (b) £700 worth of tickets?

- (a) We already know that the contribution per ticket is £1.50. Therefore, if they sell 200 tickets, total contribution is $200 \times £1.50 = £300$.

Out of this, the fixed costs of £90 must be covered and anything remaining is profit, so profit = £210.

(Check: 200 tickets is 140 more than the number needed to break-even. The first 60 tickets sold cover the fixed costs; the remaining 140 show a profit of £1.50 per unit. Therefore profit = $140 \times £1.50 = £210$, as before.)

(b) £700 worth of tickets is 100 tickets since they are £7.00 each.

	£
Total contribution on 100 tickets	150
less Fixed costs	<u>90</u>
Profit	<u>£60</u>

(You will see that this checks with an earlier calculation.)

Comparison of Different Price/Output Scenarios

We can also apply the above forms of analysis to comparing the profit arising from changes in price and sales volumes.

Consider the following example.

A shoe manufacturer has fixed costs (premises, labour and machinery) of £50,000 per year in producing 10,000 pairs of shoes. The marginal cost for each pair of shoes, in terms of materials used, is £5 and the manufacturer sells them at £15.

Break-even and profit are calculated as follows:

$$\begin{aligned}\text{Contribution} &= \text{price per item} - \text{marginal cost} \\ &= £15 - £5 \\ &= £10\end{aligned}$$

$$\begin{aligned}\text{Break-even sales volume} &= \frac{\text{Fixed costs}}{\text{Contribution per unit}} \\ &= \frac{50,000}{10} \\ &= 5,000\end{aligned}$$

$$\begin{aligned}\text{Profit on sales of 10,000} &= (\text{Output} \times \text{Contribution per unit}) - \text{Fixed costs} \\ &= (10,000 \times £10) - £50,000 \\ &= £100,000 - £50,000 \\ &= £50,000\end{aligned}$$

It has been estimated that the company could increase sales by 10% if it reduced the price by 10%. What would be the effect of this?

First, we need to re-calculate the contribution per unit to take account of the 10% reduction (£1.50):

$$\begin{aligned}\text{Contribution per unit} &= £13.50 - £5 \\ &= £8.50\end{aligned}$$

The new break-even sales volume is:

$$\frac{50,000}{8.50} = 5,882.36 \text{ or } 5,883$$

The profit at the new price is:

$$(11,000 \times £8.50) - £50,000 = £43,500$$

Thus, profit would fall, despite the larger volume of sales and the price reduction should not be implemented.

B. BREAK-EVEN CHART

A break-even chart plots the relationship between costs and sales revenue, and output. Output is the independent variable and is plotted along the x axis, and sales and costs, as dependent variables, are plotted on the y axis.

To illustrate the construction of a break-even chart, we shall use the following information:

- **Sales revenue**

We need the total sales revenue which would be received at various outputs, as shown in the following table:

Output	Sales revenue
<i>(units)</i>	<i>£</i>
0	0
2,500	10,000
5,000	20,000
7,500	30,000
10,000	40,000

- **Costs**

We must first establish which elements of cost are *fixed* in nature, together with the fixed element of any semi-variable costs must also be taken into account.

Let us assume that the fixed costs total £8,000.

The *variable* element of cost must also be assessed at varying levels of output.

Output	Variable costs
<i>(units)</i>	<i>£</i>
0	0
2,500	5,000
5,000	10,000
7,500	15,000
10,000	20,000

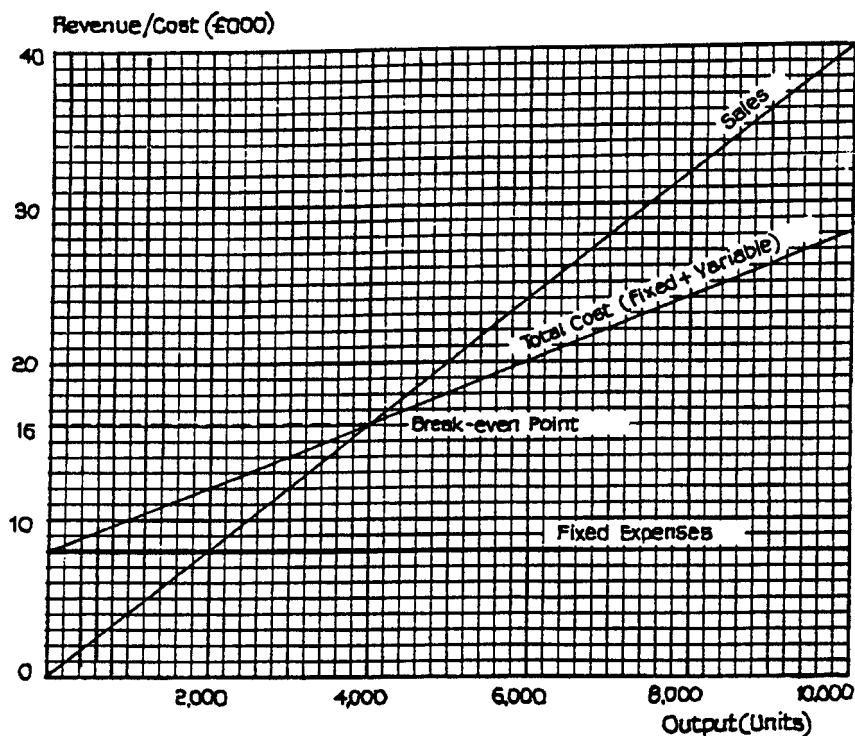
Plotting the Graph

The following are the stages in the construction of the graph:

- Plot the sales line from the given figures.
- Plot the fixed costs line. This line will be parallel to the horizontal axis.
- Plot the total costs line. This is done by adding the fixed expense of £8,000 to each of the variable costs above.
- The break-even point is represented by the meeting of the sales revenue line and the total cost line. If a vertical line is drawn from this point to meet the horizontal axis, the break-even point in terms of units of output will be found.

The graph is illustrated in Figure 20.1.

Figure 20.1: Break-even Chart



Note that, although we have information available for four levels of output besides zero, one level is sufficient to draw the chart, provided we can assume that sales and costs will lie on straight lines. We can plot the single revenue point and join it to the origin (the point where there is no output and therefore no revenue). We can plot the single cost point and join it to the point where output is zero and total cost = fixed cost.

In this case, the break-even point is at 4,000 units, or a revenue of £16,000 (sales are at £4 per unit).

This can be checked by calculation:

Sales revenue = £4 per unit

Variable costs = £2 per unit

∴ Contribution = £2 per unit

Fixed costs = £8,000

$$\begin{aligned} \text{Break-even point} &= \frac{\text{Fixed costs}}{\text{Contribution per unit}} \\ &= 4,000 \text{ units} \end{aligned}$$

Assumptions and Limitations

The following points should be borne in mind when constructing and using break-even charts:

- Break-even charts are accurate only within fairly narrow levels of output. This is because the proportion of fixed costs could change with a substantial change in the level of output.
- Even with only one product, the income line may not be straight. A straight line implies that the manufacturer can sell any volume he likes at the same price but this may well be untrue. If he wishes to sell more units he might have to reduce the price and whether this increases or decreases his total income depends on the *elasticity of demand* for the product. Therefore, the sales line may curve upwards or downwards, but in practice is unlikely to be straight.
- Similarly, we have assumed that variable costs have a straight line relationship with level of output, i.e. variable costs vary directly with output. Again, this might not be true. For instance, the effect of diminishing returns might cause variable costs to increase beyond a certain level of output.
- Break-even charts hold good only for a limited time-span.

Nevertheless, within these limitations a break-even chart can be a very useful tool. Managers who are not well-versed in accountancy will probably find it easier to understand a break-even chart than a calculation showing the break-even point.

Interpretation

In addition to the break-even point itself, there are two further pieces of information which may be read from a break-even chart. These are illustrated in the skeleton chart shown in Figure 20.2.

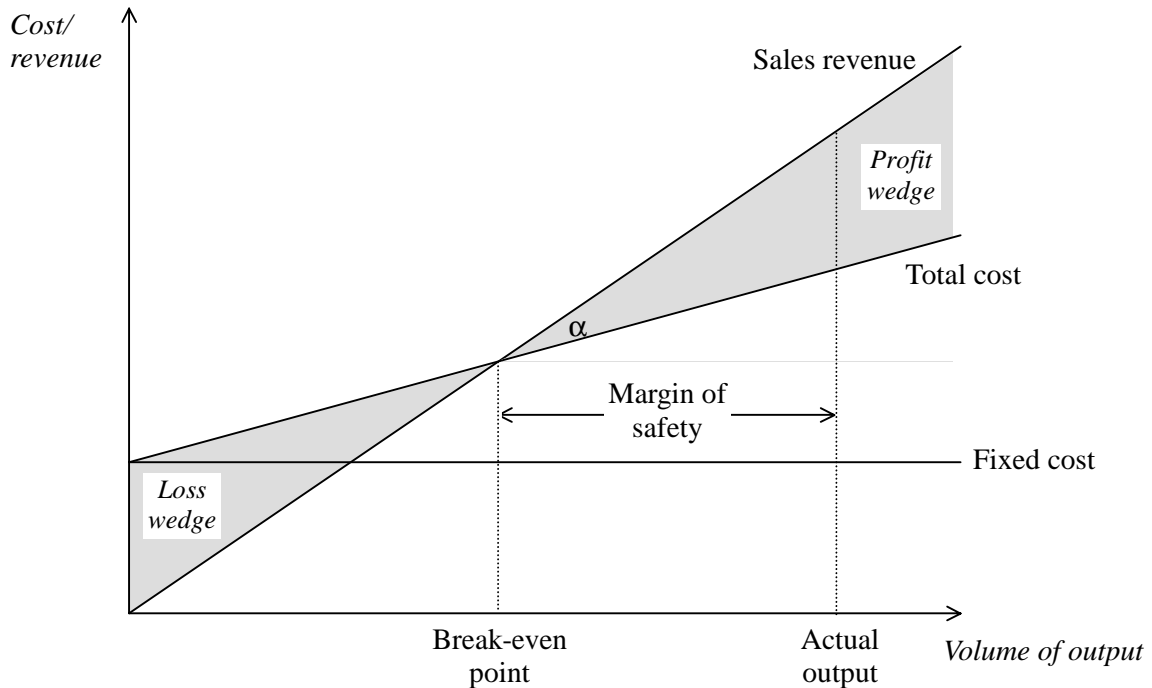
- **Margin of safety**

The margin of safety, i.e. the extent by which sales could fall before a loss was incurred, is easily read from the graph.

- **Angle of incidence**

The angle α marked on the chart is referred to as the angle of incidence. This shows the rate at which profits increase once the break-even point is passed. A large angle of incidence means a high rate of earning. (It also means that if sales fell below break-even point, the loss would increase rapidly.) This is also illustrated by the size of the profit and loss wedges.

Figure 22.2: Skeleton break-even chart



C. PROFIT VOLUME GRAPH

The profit volume graph provides an alternative presentation to the break-even chart. It may be more easily understood by managers who are not used to accountancy or statistics. In this graph, sales revenue is plotted on the horizontal axis, against profit/loss on the vertical axis. It is therefore necessary to work out the profit before starting to plot the graph.

This is done by using the marginal cost accounting equation given earlier. The form of the equation which is most convenient will depend on the presentation of the information in the particular question.

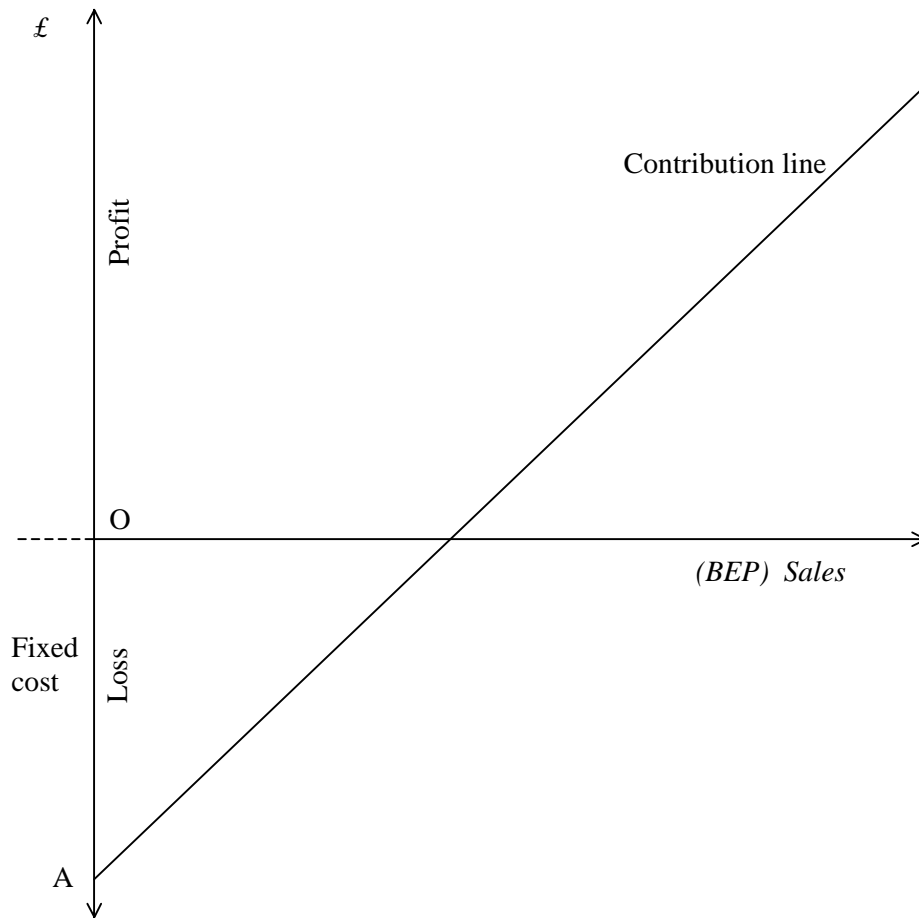
$$\text{Sales revenue} - \text{Variable cost} = \text{Fixed cost} + \text{Profit}; \text{ or}$$

$$\text{Profit} = \text{Sales revenue} - \text{Variable cost} - \text{Fixed cost}; \text{ or}$$

$$\text{Profit} = \left[\begin{array}{l} \text{Selling price} \\ \text{per unit} \end{array} \times \begin{array}{l} \text{Number of units} \\ \text{sold} \end{array} \right] - \left[\begin{array}{l} \text{Variable cost} \\ \text{per unit} \end{array} \times \begin{array}{l} \text{Number of units} \\ \text{sold} \end{array} \right] - \text{Fixed cost}; \text{ or}$$

$$\text{Contribution per unit} \times \text{Number of units} - \text{Fixed cost}.$$

The general form of the graph is illustrated in Figure 20.3.

Figure 20.3: Profit/volume graph

The distance AO on the graph represents the amount of fixed cost, since when no sales are made there will be a loss equal to the fixed cost.

D. THE PROFIT/VOLUME OR CONTRIBUTION/SALES RATIO

This ratio has historically been referred to as the “Profit:Volume Ratio”. This is not a very sensible name because it does not describe what the ratio actually is. In fact, it is now being called by the more descriptive name of “Contribution:Sales Ratio” (C/S Ratio) but you should watch out for the alternative term P/V Ratio.

The ratio may be calculated as either:

$$\frac{\text{Selling price per unit} - \text{Variable cost per unit}}{\text{Selling price per unit}}$$

or

$$\frac{\text{Total sales revenue} - \text{Total variable cost}}{\text{Total sales revenue}}$$

Alternatively, it may be calculated when variable costs are not known, provided that the sales revenue and profit figures are known for two different levels of output.

Example

Calculate the profit/volume (C/S) ratio from the following information:

	Sales Figures	Profit Figures
	£	£
Activity Level I	3,500	625
Activity Level II	3,000	500

The calculation of the profit/volume ratio is as follows:

- (a) Variation in profits, Level I – Level II: £625 – £500 = £125.
 (b) Variation in sales, Level I – Level II: £3,500 – £3,000 = £500.

This means that for additional sales of £500 there is an additional profit of £125.

- (c) Profit volume ratio $\frac{(a)}{(b)}$ or $\frac{125}{500} = 0.25$

This figure can be checked by drawing up profit statements for the two activity levels, bearing in mind that if the P/V ratio is 0.25, i.e. contribution is 25p per £ of sales, then variable costs will be 75p per £ of sales. We must also remember that fixed cost = contribution – profit, and that the fixed cost will by definition be the same at each of the two activity levels.

	Level I	Level II
	£	£
Sales	3,500	3,000
<i>less</i> Marginal cost (0.75 per £1)	<u>2,625</u>	<u>2,250</u>
Contribution	875	750
<i>less</i> Fixed expenses	<u>250</u>	<u>250</u>
Profits	625	500

Use of Ratio**(a) Calculating profit at different levels of sales**

Using the data in the last example, what would be the profit on £2,000 sales and what sales level would be required to produce a profit of £1,000?

At sales of £2,000

Sales as above	£2,000
P/V percentage as calculated	25%
Contribution on £2,000 sales (25% of £2,000)	£500
Fixed expenses as calculated	£250
Profit on £2,000 sales (contribution less fixed expenses)	£250

For profit requirement of £1,000

Profit requirement as above	£1,000
Fixed expenses as calculated	£250
Total contribution required (profit + fixed expenses)	£1,250
PV percentage as calculated	25%
Sales required: $£1,250 \times \frac{100}{25}$	£5,000

(b) Calculating break-even point

An alternative formula for calculating the break-even point is:

$$\frac{\text{Fixed cost}}{\text{C/S ratio}}$$

This gives the break-even point in terms of sales value.

Using the same data again, break-even point will be:

$$250 \div 0.25 = 250 \times \frac{100}{25} = 1,000$$

Thus, the break-even point occurs when sales are £1,000.

(c) Worked example

(i) Define and illustrate by means of simple arithmetical examples:

Contribution/sales ratio

Margin of safety.

(ii) What is the significance of a firm's margin of safety?

(iii) The following details relate to product X:

	£	£
Selling price		120
Costs:		
Material	60	
Labour	15	
Variable overhead	5	
Fixed overhead	10	90
Profit		£30

During the forthcoming year it is expected that material costs will increase by 10%, wages by 33.33% and other costs by 20%.

Calculate the percentage increase in the selling price of X which would maintain the firm's contribution/sales ratio.

Solution

- (i) The contribution/sales ratio is the contribution (i.e. sales revenue – variable cost) expressed as a proportion of sales.

Thus, if selling price = £100 and variable cost/unit = £75, the contribution/unit is £25 and the C/S ratio 0.25 or 25%.

The margin of safety is the difference between a firm's actual or expected sales and the sales which would be needed for the firm to break-even. It may be expressed as a percentage of the actual sales.

For example, using the data above and supposing fixed costs to be £2,500, the sales volume required to break-even would be 100 units ($2,500 \div 25$). If the firm's actual sales were 200 units, its margin of safety would be 100 units or $(100 \div 200) \times 100 = 50\%$.

- (ii) A firm's margin of safety shows its ability to withstand adverse trading conditions. For instance, in the above example the firm can afford for sales to drop by up to 50% before it will be in real difficulties.

	Present Costs	Increase	Expected Costs
	£	%	£
Material	60	10	66
Labour	15	33.33	20
Variable overhead	<u>5</u>	20	<u>6</u>
Marginal cost	80		92

Since current sales revenue is £120 per unit, the current C/S ratio is $40/120$ or 33.33%. The variable cost:sales ratio is 66.67%.

If the C/S ratio is to remain the same, the variable cost:sales ratio will also remain the same, i.e. 66.67% of the new selling price is £92.

Therefore, the new selling price must be:

$$\left(\frac{92}{66.67} \times 100 \right) = \text{£}138$$

We can check this as follows:

Selling price	£138	
less Variable cost	<u>92</u>	
Contribution	<u>£ 46</u>	which is 0.33 of sales revenue, as required.

The two most important points to notice about this part of the question are as follows:

- The fixed cost per unit is given as a “red herring”. In marginal cost accounting we are only interested in the fixed costs in total; fixed cost per unit is relevant only to absorption cost accounting. As it transpired, in this example we did not need any information at all about fixed costs.

- The variable (marginal) cost to sales ratio and the contribution to sales ratio are complementary ratios, i.e. when expressed as percentages they add up to 100%, and if one of them remains constant, then so does the other.

Practice Questions

1. A company producing 25,000 electric fans per year has calculated its costs as follows:

	£
Fixed costs	225,000
Variable costs	312,500

- (a) Assuming it sells all of its output, what should be the price in order to:
- (i) break-even?
 - (ii) achieve a profit of £30,000?
- (b) The company has estimated that if the price is raised to £30 per fan it might only sell 20,000 fans. Would this be more profitable than selling all the output at the price established in (a)(ii) above?
2. The following figures relate to one year's working in a manufacturing business:

	£
Fixed overhead	120,000
Variable overhead	200,000
Direct wages	150,000
Direct materials	410,000
Sales	1,000,000

Represent each of the above figures on a break-even chart, and determine from the chart the break-even point.

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTIONS FOR PRACTICE

1. (a) We first need to calculate the marginal cost:

$$\begin{aligned}\text{Marginal cost} &= \frac{\text{Total variable cost}}{\text{Output}} \\ &= \frac{312,500}{25,000} \\ &= \text{£}12.50\end{aligned}$$

$$(i) \text{ BEP (sales volume)} = \frac{\text{Fixed costs}}{\text{Contribution per unit}}$$

Therefore:

$$\begin{aligned}\text{Contribution per unit} &= \frac{\text{Fixed costs}}{\text{Sales volume}} \\ &= \frac{225,000}{25,000} \\ &= \text{£}9\end{aligned}$$

The price at the break-even point is:

$$\text{Contribution per unit} + \text{Marginal cost} = \text{£}9 + \text{£}12.50 = \text{£}21.50$$

$$(ii) \text{ Volume of sales needed to achieve a given profit} = \frac{\text{Fixed costs} + \text{Desired profit}}{\text{Contribution per unit}}$$

Therefore:

$$\begin{aligned}\text{Contribution per unit} &= \frac{\text{Fixed costs} + \text{Desired profit}}{\text{Volume of sales}} \\ &= \frac{225,000 + 30,000}{25,000} \\ &= \text{£}10.20\end{aligned}$$

The price required to generate profits of £30,000 is:

$$\text{Contribution per unit} + \text{Marginal cost} = \text{£}10.20 + \text{£}12.50 = \text{£}22.70$$

- (b) We first need to recalculate the marginal cost and contribution per unit at the lower output, as follows:

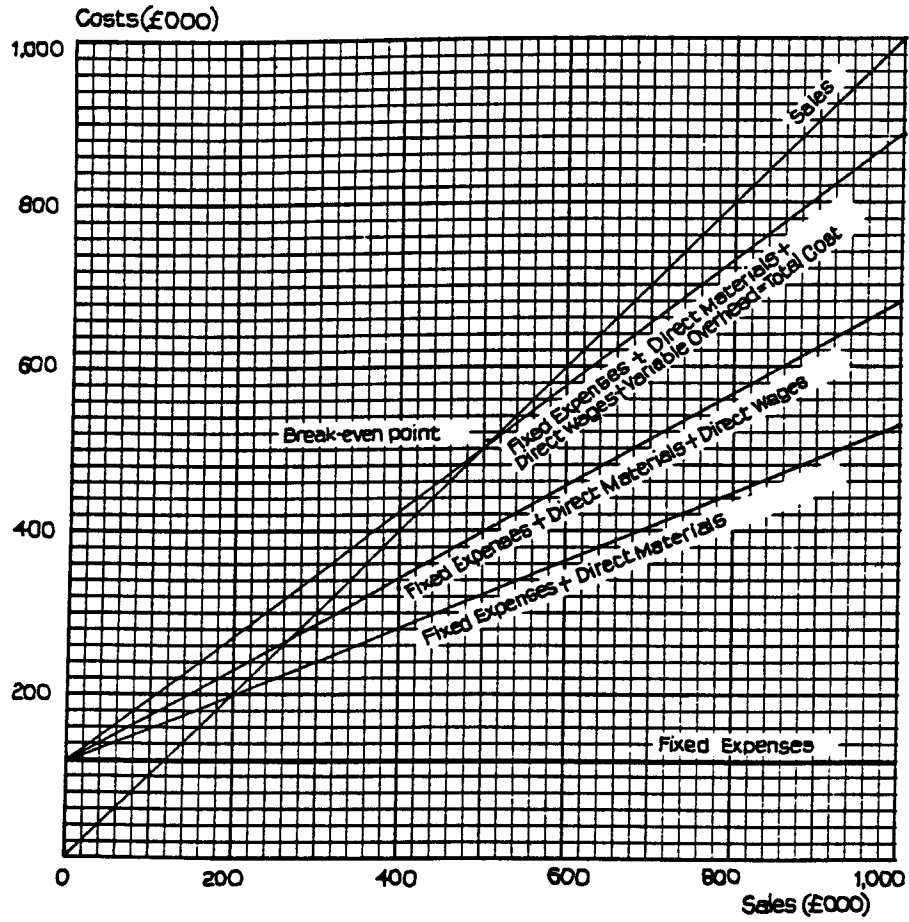
$$\begin{aligned}\text{Marginal cost} &= \frac{312,500}{20,000} \\ &= \text{£}15.625\end{aligned}$$

$$\begin{aligned}\text{Contribution per unit} &= \text{£}30 - \text{£}15.625 \\ &= \text{£}14.375\end{aligned}$$

$$\begin{aligned}\text{Profit} &= (\text{Output} \times \text{Contribution per unit}) - \text{Fixed costs} \\ &= (20,000 \times \text{£}14.375) - \text{£}225,000 \\ &= \text{£}62,500\end{aligned}$$

Therefore, the price rise would bring increased profits, despite the fall in output.

2. Break-even point occurs at £500,000 sales value, as shown by the break-even chart.



Study Unit 21

Standard Costing and Variance Analysis

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A. STANDARD COSTING

Standard costing involves the setting of *standard costs*. This involves the predetermination of the various component costs, and hence the total cost, of an article or unit of production.

Note, at the outset, that these costs are not estimated. Estimated costs are generally based on a consideration of past results or the personal experience or opinion of individuals. Standard costs are based on a carefully planned and standardised method or routine of manufacture for a given article.

Standard costing is appropriate in the following circumstances:

- When the quantity and quality of materials used are fixed and defined according to a given specification.
- When the manufacturing processes or operations are defined and clearly established by experience and study.
- When the machinery and equipment used in the manufacture of the article are clearly stated.

Standard costs can be established for any product, but the measurement will differ between industries.

Any standard cost derived for an article will be made up of a series of standard costs for the component parts. You will recall the elements of cost – material cost, labour cost and overhead cost. In exactly the same way, the component elements of standard production cost are:

- Standard material cost
- Standard labour cost
- Standard overhead cost

Types of Standard

In establishing standards, there is an important distinction between the ideal and the norm.

- **Ideal or basic standards**

These are standards which could be attained under ideal conditions, and as they are rarely, if ever, attainable, they serve primarily as a base from which to measure the standard of achievement revealed by actual costs.

- **Normal or current standards**

These are based upon conditions which are actually attainable, and which may be regarded as a reasonable level of achievement to be matched by actual results. In most cases these will be the standards which will be most useful for the measurement of actual manufacturing efficiency.

Trying to meet ideal standards can be demotivating. Normal standards can be met and improved upon and reset at higher levels.

Standard Material Cost

In establishing the standard material cost, certain considerations need taking into account and these will inevitably present the purchasing officer (or whoever is responsible for buying materials) with some basic questions to be answered:

(a) **Type of material**

- What quality is required?
- If price constraints are important, to what price bands should purchases be limited?

(b) **Quantity of material**

- If quantities are to be realistic, what allowance must be made for waste, spoilage, rejects?

- For what period of future production are orders to be made?

(c) **Price of material**

- How reliable is current price as an indicator of future price?

Example

This example shows how standard costs are built up.

The 3C Company produce greetings cards and calendars. One product is a special calendar which sets out 12 photographs of favourite ski resorts and provides a dossier of information about snow and weather conditions recorded month by month over the last three years. Specifications for the calendar are as follows:

- Per calendar: Card – one sheet
 Paper – 12 sheets, printed both sides
 Envelope – plain brown
 Packing – white cardboard box with printed top

Standard material costs have been drawn up as follows:

	Per 1,000 calendars	Per calendar
	£	p
Card	300	30
Paper (basic)	200	20
Photography	500	50
Printing	300	30
Envelopes	20	2
Packing	80	8
Total standard materials	1,400	£1.40

$$\text{Check: } \frac{\pounds 1,400}{1,000} = 1.40 \text{ per calendar for materials}$$

More detailed records further analyse these costs:

Standard material cost

Item	Per 1,000 Calendars		Per Calendar Standard Cost per item
	Actual Cost	Waste	
	£	£	
Card	262.50	37.50	30p
Paper	160.00	40.00	20p
Photographs	477.50	22.50	50p
Printing	300.00	–	30p
Envelopes	20.00	–	2p
Box	78.00	2.00	8p
	1,298.00	102.00	£1.40

Standard Labour Cost

Obviously the important factor here is **time taken**, but this itself is dependent on a number of other factors. Some of these are:

- Layout of factory, workshop or print room
- Type and capacity of machinery and other equipment
- Methods of handling materials
- Precision of operations carried out by machinists
- Establishment of exact time to be allowed for each operation

Once again, the important thing from the point of view of costing is that all this information should be available. Information should be kept up-to-date so that any changes in layout, equipment or method may immediately be incorporated in the standard costs. Special allowances should be made for such items as setting of machines, training of new operatives, handling or preparation of materials, and so on.

Continuing our previous example, standard labour costs have been drawn up for the Ski Calendar as follows:

	Per 1,000 calendars	Per calendar
	£	p
Cutting room	400	40
Assembly room	300	30
Print shop	600	60
Distribution/packing	<u>200</u>	<u>20</u>
Total labour materials	1,500	£1.50

$$\text{Check: } \frac{\text{£}1,500}{1,000} = 1.50 \text{ per calendar for labour}$$

More detailed records further analyse these costs:

Standard labour cost

	Hours	Cost per Hour	Per 1,000 Calendars
		£	£
Cutting room	80	5	400
Assembly room	100	3	300
Printshop	100	6	600
Distribution/packing	100	2	<u>200</u>
			1,500

Standard Overhead Cost

This will need to be obtained from the budgeted overhead figures, and then included in the standard cost of an article

Returning to our example of 3C Company, the budgeted overheads are as follows for the whole business:

	£
Production overheads	16,000
Administration overheads	12,000
Selling overheads	<u>12,000</u>
Total overheads	<u>40,000</u>

Greetings cards make up 80% of 3C's total production, with calendars making up the other 20%. The Ski Calendar makes up 25% of total calendar overheads. The calculation of overheads attributable to the Ski Calendar is as follows:

$$20\% \text{ (calendars) of } \pounds 40,000 = \pounds 8,000$$

$$25\% \text{ (Ski Calendars) of } \pounds 8,000 = \pounds 2,000$$

This total overhead must now be added to the existing standard costs at rate of.

$$\frac{\pounds 2,000}{1,000} = 20\text{p standard overhead cost per calendar}$$

The full standard costs of the Ski Calendar can now be set out as follows:

Standard Cost Of Ski Calendar

	£
Standard material cost	1.40
Standard labour cost	1.50
Standard overhead cost	<u>0.20</u>
Total standard cost	<u>3.10</u>

Advantages of Using Standard Costs

- Efficiency is helped by the necessary preparation of products, processes and equipment.
- Variances from standards can be identified and action taken to correct these.
- Labour efficiency can be monitored.
- Plant capacity and performance can be evaluated and controlled.
- Wastage of materials is avoided.
- Price-fixing is made more reliable because of less fluctuating costs.
- Costing procedures are simplified.
- Targets can be fixed realistically for different departments.
- Management control is made easier.
- Long-term forecasts can be made.

Standard costs are closely allied with budgetary control, enabling variations from the standard to be identified and examined. Both standard costs and budgets involve:

- The establishment of a predetermined standard or target of performance.

- The measurement of actual performance.
- The comparison of actual performance, in detail and in total, with the predetermined standard and budget.
- The disclosure of variances between actual and standard performances, and the reasons for these variances.
- The suggestion of corrective action where examination of the variances indicates that this is necessary.

But they differ in that:

- Budgets deal with *totals*, standards deal with articles or *units of production*.
- Budgets generally cover the *entire business* whereas standard costs cover only *part of it*.

B. VARIANCES FROM STANDARD COSTS

It is one thing to set standard costs, but it is quite another to ascertain how these have worked out in practice. Usually there is a discrepancy between standard and actual cost – a *variance*.

For example:

	£
Actual cost	2.50
Standard cost	<u>2.30</u>
Variance	<u>0.20</u>

0

Variances can exist in respect of each component of cost, as well as in total. They may also be either adverse – i.e. actual costs are **more** than standard costs – or favourable, where actual costs are less than expected. For example:

	Standard costs	Actual costs	
	£	£	
Materials	3	4	Material variance: £1 adverse
Labour	2	5	Labour variance: £3 adverse
Overheads	<u>4</u>	<u>3</u>	Overhead variance: £1 favourable
Total	9	12	Total variance: £3 adverse

How Variance is Caused

There are two main causes of favourable or adverse variances:

- A variance because the *actual price* was different from the *standard price*. This is called a *price variance*, and may arise in terms of material, labour or overhead costs.
- A variance between the *actual quantity* used and the *standard quantity* expected. This is called a *usage variance*. Here again, this can arise under materials, labour or overheads.

Examples will help you to understand these points. Remember that whether the variance is caused by price or by quantity, it will be the *cost* that is affected.

Example**(a) Material cost**

	Standard costs	Actual costs
Quantity to be used (units)	60	50
Price to be paid (per unit)	£1	£1
Total cost	£60	£50

The £10 difference is a *favourable* one (costs were less than expected). It can be explained as follows:

	Standard	Actual	Variance	
			<i>Adverse</i>	<i>Favourable</i>
Usage	60	50	–	10
Price	£1	£1	–	–

So the variance is entirely due to usage – 10 more units at £1 each have been used than was budgeted for.

(b) Labour cost

	Standard costs	Actual costs
Quantity (hours)	30	30
Price (wage per hour)	£3	£3.50
Total cost	£90	£105

This adverse difference of £15 arises as follows:

	Standard	Actual	Variance	
			<i>Adverse</i>	<i>Favourable</i>
Usage	30	30	–	–
Price	£3.00	£3.50	50p	–

So the variance arises entirely by price, because 30 hours' labour cost 50p each more than planned.

(c) Overhead cost

	Standard costs	Actual costs
Quantity (hours)	10	8
Price	£3	£3
Total cost	£30	£24

This favourable difference of £6 arises as follows:

	Standard	Actual	Variance	
			Adverse	Favourable
Usage	10 hours	8 hours	–	2
Price	£3	£3	–	–

So the variance arises entirely by usage – 10 hours planned but only 8 hours used. 2 hours at £3 is £6.

We can now summarise all the variances as follows:

	Standard	Actual	Variance	
			Adverse	Favourable
	£	£	£	£
Labour	90	105		15
Materials	60	50	10	
Overheads	30	24	6	
Total	180	179	16	15

In other words the credit for the saving of £1 in costs arises from favourable performances under the materials and overhead aspects. This would have produced a much better result, but for the adverse labour variance being £15. We know, too, that the reason for this variance is that the price per unit was more than the standard.

C. SUMMARISING AND INVESTIGATING VARIANCES

Reconciling Budgeted and Actual Profit

Having identified individual variances, we can summarise them in order to see why actual profit differs from budgeted profit. Let's look at a simple example:

In a one-week period, goods to the value of £3,000 were sold. The selling prices of these goods were 20% above standard cost.

During the period, the following variances were recorded:

	£	
Material price	25	(A)
Material usage	12	(F)
Labour rate (price)	8	(A)
Labour efficiency (quantity)	18	(A)
Direct expenses	5	(F)
Indirect expenses	20	(A)

What was the net profit for the period?

We can prepare a simple standard costing profit and loss account:

Profit and Loss Account

	£	£	£
Sales			3,000
Standard cost ($£3,000 \times \frac{100}{120}$)			<u>2,500</u>
Standard profit			<u>500</u>
Variances:			
Adverse:			
Material price	(25)		
Labour rate	(8)		
Labour efficiency	(18)		
Indirect expenses	<u>(20)</u>	(71)	
Favourable:			
Material usage	12		
Direct expenses	<u>5</u>	<u>17</u>	
Total net variance			<u>(54)</u>
Net profit			<u>446</u>

Standard profit is the difference between actual sales and the standard cost of sales. It is the amount of profit which would have been achieved if there had been no variances.

We can prepare standard costing profit and loss accounts for each department or section of a business, as well as overall, to see how actual performance is comparing with budget (standard).

Investigating Variances

Before finally deciding whether to amend a budget, we must look carefully at each significant variance and ask:

- Why did it happen?
- How can it be prevented from happening again?

This exercise is invaluable in highlighting areas where improvement may be needed – is a machine wearing out? Are we using skilled enough workers, or do operators need more training to work more efficiently? Should we change our material supplier? Again, costing is helping to ***plan the future*** – and improve it.

Calculation of variances merely points out deviations from budget/standard and does not explain the reasons for such deviations. Ideally, management would wish for an explanation of all variances, but it is obviously not worth doing this if the cost of investigation outweighs the benefit to be obtained from any corrective action which might follow. We must therefore take into account the following factors:

(a) Relative size of variance

As a “rule of thumb”, variances of over, say 5%, need to be investigated. However, if there was a persistent variance in one item over several control periods, it might merit investigation even if each individual period’s variance was below the specified limit.

(b) Size of the item of expenditure

If, say, labour costs are 10 times as high as material costs, then clearly any variance on labour cost is more serious than a similar percentage variance on material cost.

(c) Possibility of corrective action

There is no point detailing possible reasons for variance if corrective action is not likely to be possible. (Frequently, however, it will only be after investigation that it becomes clear whether corrective action is possible.)

We've seen that variances can be due to differences between actual and budgeted *price* (or rate) and/or *quantity* (or efficiency of volume). Let's look at the possible reasons for some production variances:

- **Material price variance:**

Adverse – Higher price owing to using different supplier, buying a smaller quantity and losing bulk discount, etc.

Favourable – Lower price owing to fall in general price of that material, buying in bulk etc.

- **Material usage variance:**

Adverse – Careless workers wasting material, poor quality material requiring more to be used, etc.

Favourable – High quality material, better machinery reducing wastage, etc.

- **Labour rate variance:**

Adverse – Higher wages owing to shortage of skilled workers, higher-grade workers, etc.

Favourable – Lower wages owing to using lower-grade workers, trainees etc.

- **Labour efficiency variance:**

Adverse – More hours worked owing to untrained or low-grade workers, lack of supervision, poor maintenance of machines leading to frequent breakdowns, etc.

Favourable - Efficient workers, good machines and supervision, etc.

Can you see how some of these variances are *interdependent*?

For instance, if you looked simply at an adverse material usage variance, you might be inclined to blame the production manager for not controlling wastage. However, if you look at this variance in conjunction with a favourable materials price variance due to buying slightly substandard materials, you can see that this might have led to high wastage.

Similarly, an adverse labour rate and favourable labour efficiency variance might be related. Higher wage rates might have motivated the workers towards better performance. Or conversely, they might have been on an incentive scheme, whereby greater efficiency was rewarded by higher pay.

There might be interdependence between the material and labour variances. Rapid working, as indicated by a favourable labour efficiency variance, might have led to careless working with increased wastage of materials.

Examples

The following examples illustrate the range of variances and the ways in which they interact to affect company performance.

1. A company provides the following figures:

Actual hours worked = 3,800

Standard rate = £3.60 per hour

Actual wages = £15,200

Actual production = 1,000 units

Standard time per unit = 4 hours

Calculate the following variances

- (a) Labour cost variance
 (b) Wage rate variance
 (c) Labour efficiency variance

(a) **Labour cost variance**

$$\begin{aligned} \text{Labour cost variance} &= \text{Actual} - \text{Budget} \\ &= £15,200 - (1,000 \times 4 \times £3.60) \\ &= £15,200 - £14,400 \\ &= £800 \text{ Adverse} \end{aligned}$$

(b) **Wage rate variance**

$$\begin{aligned} \text{Wage rate variance} &= \text{Actual hours} \times (\text{Actual rate} - \text{Standard rate}) \\ &= 3,800 \times (£4 - £3.60) \\ &= 3,800 \times £0.40 \\ &= £1,520 \text{ Adverse} \end{aligned}$$

(c) **Labour efficiency variance**

$$\begin{aligned} \text{Labour efficiency variance} &= \text{Standard rate} \times (\text{Actual} - \text{Standard hours}) \\ &= £3.60 \times (3,800 - 4,000) \\ &= £3.60 \times -200 \\ &= -£720 \text{ Favourable} \end{aligned}$$

Note that Labour cost = Wage rate + Labour efficiency:

$$£800 \text{ (A)} = £1,520 \text{ (A)} - £720 \text{ (F)}$$

2. York Ltd operates a standard costing system and a report of variances between actual and standard costs is prepared each month. The monthly report for May shows the following variances:

Direct material price variance = £860 favourable

Direct material usage variance = £1,000 adverse

Direct labour rate variance = £1,200 adverse

Direct labour efficiency variance = £1,600 adverse

What may be the reason(s) for the variances?

Possible reasons for the variances are:

- Material price variance: Lower purchase price
- Material usage variance: Inefficient production or poor quality materials
- Labour rate variance: Incorrect staff used or staff paid incorrect rate
- Labour efficiency: Poor quality materials or high levels of spoilage

3. A manufacturer produces a single product. The standard cost data is as follows:

Standard weight of material to produce one unit	18 kilos
Standard price per kilo	£8
Standard labour hours to produce one unit	9 hours
Standard wage rate per hour	£5

The actual production and costs for April were:

Material used	5,810 kilos
Material cost	£44,100
Hours worked	2,610 hours
Wages paid	£15,620

The actual output was 300 units.

Calculate the relevant material and labour cost variances.

These can be shown in tabular form as follows:

	£		£
Material price variance: $(5,810 \times £8) - £44,100$	2,380	<i>Fav</i>	
Material usage variance: $((300 \times 18) - 5,810) \times £8$	<u>3,280</u>	<i>Adv</i>	
Material cost variance			900 <i>Adv</i>
Labour rate variance: $(2,610 \times £5) - £15,620$	2,570	<i>Adv</i>	
Labour efficiency variance: $((300 \times 9) - 2,610) \times £5$	<u>450</u>	<i>Fav</i>	
Labour cost variance			<u>2,120</u> <i>Adv</i>
Total variance			<u>3,020</u> <i>Adv</i>

Practice Question

A company supplies the following data:

	£
Standard cost of one unit of output:	
Direct material 20 kilos at £2.00 per kilo	40
Direct wages 10 kilos at £4.00 per hour	<u>40</u>
	80

Actual cost of 100 units of output:

Direct material: £4,081 (2,182 kilos)

Direct wages: £4,312 (980 hours)

Calculate the following variances:

- (a) Direct material price variance
- (b) Direct material usage variance
- (c) Total direct material cost variance
- (d) Direct labour rate variance
- (e) Direct labour efficiency variance
- (f) Total direct labour cost variance

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTION FOR PRACTICE

The variances can be shown in tabular form as follows:

	£		£
(a) Direct material price variance: $(2182 \times \pounds 2) - \pounds 4,081$	283	<i>Fav</i>	
(b) Direct material usage variance: $((100 \times 20) - 2,182) \times \pounds 2$	<u>364</u>	<i>Adv</i>	
(c) Total direct material cost variance			81 <i>Adv</i>
(d) Direct labour rate variance $(980 \times \pounds 4) - \pounds 4,312$	392	<i>Adv</i>	
(e) Direct labour efficiency variance: $((100 \times 10) - 980) \times \pounds 4$	<u>80</u>	<i>Fav</i>	
(f) Total direct labour cost variance			<u>312</u> <i>Adv</i>
Total variance			393 <i>Adv</i>

Study Unit 22

Capital Investment Appraisal

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A. CAPITAL INVESTMENT AND DECISION MAKING

From time to time a business will need to consider making a capital outlay, in order to:

- Acquire fixed assets – e.g. plant and machinery.
- Develop new business activities – e.g. introduce a new product.
- Acquire or make an investment in another business.

Decisions on such expenditure need to be properly planned for, and all relevant factors appraised in order to ensure the investment is worthwhile. Once a capital investment has been made, it will be expected to generate income. It is the balance between the initial costs (*cash outflows*) – e.g. the purchase and set-up costs of fixed assets – and the resulting income generated (*cash inflows*) which decides whether the investment is advisable. The process of determining whether to invest or not is called capital budgeting or capital investment appraisal.

Constraints

In practice the availability of finance to resource a capital project will be limited, and the choice of capital projects to appraise will generally be governed by opportunity. For instance, it is not every day that an opportunity will arise to invest in a new business, or a new product. The purchase of new fixed assets will depend on business expansion, and the replacement of existing fixed assets will depend on them wearing out or becoming obsolescent.

Regarding the availability of finance, a business will normally have some flexibility in the amount of cash it can raise from shareholders or other forms of borrowing, but generally it will have to contain its capital expenditure to within the limits of what is viable in relation to the total capital structure of the company. Assuming we have the capital finance resources to spend, and having decided on the project or projects to appraise, there are a number of financial considerations which will influence whether or not to invest.

Financial criteria

These financial decisions fall broadly into two different types:

- The requirement to recover the capital outlay of the project as early as possible. This can be measured by what we call the *payback* method.
- The requirement for the investment to earn as high a return as possible. This can be measured by what we call the *accounting rate of return*.

The results of either type of appraisal should not be taken in isolation because they may give conflicting results, mainly due to the future accounting period in which the revenue cash inflows are expected. We therefore also need to look at cash flow in the light of its value in real terms, at today's value.

Cash flow in earlier periods is of greater value in real terms than cash flow in later periods. We use the *discounted cash flow (DCF)* techniques to enable us to calculate the *net present value* of the project, or alternatively the *internal rate of return*. It is from these results that we will be able to decide the financial viability of the project and whether or not to go ahead with the capital investment. We will now look at each of these techniques.

B. PAYBACK

Payback is the method we use to measure the *period of time it takes to recover the cash outlay on a project*.

We shall examine the way in which this work through the following two examples. The first example is a simple appraisal between three similar capital projects; the second example is more complicated, dealing with the replacement of an old machine. The investigation from a costing point of view must make it absolutely clear that a saving should accrue from the investment, this being equivalent to increasing the profits of the business.

Example 1

Determine which of these three capital schemes has the earliest pay back:

	Project		
	A	B	C
	£	£	£
Initial outlay	15,000	25,000	12,000
Net cash inflows:			
Year 1	10,000	8,000	1,800
Year 2	8,000	10,000	2,800
Year 3	3,000	14,000	3,800
Year 4	1,500	4,000	4,800
Year 5	750	1,675	3,535

By aggregating the net cash inflows we can compare the period over which each project will generate the funds to cover the initial outlay.

	Project		
	A	B	C
	£	£	£
Initial outlay	15,000	25,000	12,000
Cumulative net cash inflows:			
Year 1	10,000	8,000	1,800
Year 2	18,000	18,000	4,600
Year 3	21,000	32,000	8,400
Year 4	22,500	36,000	13,200
Year 5	23,250	37,675	16,735

The payback periods are as follows:

- For Project A: between Year 1 and 2
- For Project B: between Year 2 and 3
- For Project C: between Year 3 and 4

Assuming that cash flows are spread evenly over the year during the payback periods, we can calculate the precise payback time in accordance with the following formula:

$$\text{Number of years prior to year of payback} + \frac{\text{Cash inflow required to achieve payback in year}}{\text{Cash flow in year of payback}}$$

Applying this to the three projects in our example:

$$\text{Project A: } 1 + \frac{5,000}{8,000} = 1.625 \text{ yrs}$$

$$\text{Project B: } 2 + \frac{7,000}{14,000} = 2.500 \text{ yrs}$$

$$\text{Project C: } 3 + \frac{3,600}{4,800} = 3.750 \text{ yrs}$$

Example 2

This example deals with the replacement of machines. We should not replace merely on the basis of increasing output, but should consider the cost of the output as it exists at the present and also what it would be were the new machine purchased as a replacement. It is normally the practice to evaluate problems of this type on a marginal costing basis. The payback period in this example refers to the annual saving expected by replacement, set against the capital cost of the new machine.

An organisation has a machine shop which manufactures components for sale, as well as making replacement parts for its contracting plant. The management is considering the replacement of an old machine tool with a new one of improved design which will give increased output. The following information is given in respect of the two machine tools:

	Old Machine	New Machine
Purchase price	£8,000	£12,000
Labour cost per running hour	22.5p	27.5p
Other running costs per annum:		
Power	£600	£400
Consumable stores	£300	£300
Repairs and maintenance	£450	£150
Units of output per hour	30	40
Running hours per annum	3,000	3,000
Material cost per unit	2p	2p
Selling price per unit	6p	6p

Depreciation is being written off the cost of the old machine on a straight-line basis over 10 years, and its book value is now £4,000. The cost of the new machine is to be written off over 10 years on the same basis.

Assuming that all output can be sold, prepare a statement showing whether or not it would be profitable to install the new machine.

Comparison of Machine Profitability

		Old Machine		New Machine	
Outputs in units per annum	<i>(30 × 3,000)</i>	90,000	<i>(40 × 3,000)</i>	120,000	
Sales value thereof (1)		£5,400		£7,200	
Marginal cost		£		£	
Direct material	<i>90,000 @ 2p</i>	1,800	<i>120,000 @ 2p</i>	2,400	
Labour costs	<i>3,000 @ 22.5p</i>	675	<i>3,000 @ 27.5p</i>	825	
Other running costs:	£		£		
Power	600		400		
Consumable stores	300		300		
Repairs and maintenance	<u>450</u>	<u>1,350</u>	<u>150</u>	<u>850</u>	
Marginal cost (2)		3,825		4,075	
Gross contribution (1) – (2) = (3)		1,575		3,125	
less Depreciation (4)		<u>800</u>		<u>1,200</u>	
Net contribution (3) – (4) = (5)		775		1,925	

The cost-saving to be obtained by carrying out the replacement envisaged amounts to the difference between the gross margins or contributions as per item numbered (3). This is £1,550, giving a payback period of:

$$\frac{12,000}{1,550} \text{ years} = 7\frac{3}{4} \text{ years.}$$

Thus the machine would pay for itself within its anticipated life-span. The saving of £1,550 per annum on the worst possible set of circumstances should ensure that the machine of the new type is introduced.

The worst set of circumstances which could affect the issue would be if the present machine lasted for a further 10 years without loss of efficiency, and the new machine also only lasted 10 years. The position would then be as shown below.

Cost-saving on gross contribution basis:

	£	£
10 years at £1,550		15,500
Depreciation:		
New – 10 years at £1,200	12,000	
Old – 5 years at £800	<u>4,000</u>	<u>16,000</u>
		<u>(–£500)</u>

In normal circumstances, however, maintenance costs would rise very quickly and efficiency would also fall after 10 years' life, and the breakeven position would be very much improved.

Another way of looking at the position is to take the net contribution saving and reduce it by the capital value write-off:

	£
Saving in net contribution over 10 years (@ £1,150)	11,500
less Capital loss (£400 × 5 yrs)	<u>2,000</u>
Net saving	<u>9,500</u>

C. ACCOUNTING RATE OF RETURN

Calculation

The accounting rate of return is expressed as a percentage and is calculated by dividing the average annual net profit by the average investment, i.e.:

$$\frac{\text{Average annual net profit}}{\text{Average investment}} \%$$

To explain this more fully we will use the figures from Example 2 above, when we calculated the payback period of a replacement machine. We will assume that the average annual net profit of the new machine is £1,925 (sales of £7,200 – costs £5,275).

The average investment figure is normally calculated by taking $\frac{1}{2}$ (opening value + closing value), or $\frac{1}{2} \times$ total investment. If we assume that the new machine is depreciated on a straight-line basis over its 10-year life, the calculation will be $\frac{1}{2} (\text{£}12,000 + 0) = \text{£}6,000$. Therefore the accounting rate of return over the life of the new machine is calculated as:

$$\frac{\text{£}1,925}{\text{£}6,000} \times 100 = 32.08\%$$

This figure is an *average* over the 10-year life of the machine, and it must not be forgotten that there will be significant differences in the actual figures between the purchase date of the new machine and its disposal date. In our example the accounting rate of return for year 1 would be:

$$\frac{\text{£}1,925}{\text{£}11,400} \times 100 = 16.89\%$$

Workings: Average investment = $\frac{1}{2} (\text{£}12,000 + \text{£}10,800)$

Comparison of Payback and Accounting Rate of Return

The advantages and disadvantages of the two methods are compared in the tables below.

	Payback	Accounting Rate of Return
Advantages	Simple to apply and understand. Minimises the time cash resources are tied up in capital projects. Facilitates cash flow. Cash flows are confined to the most recent accounting periods and therefore are easiest to calculate.	Simple to apply and understand. Relates to the concept of rate of return on capital employed (ROCE). Takes all cash flows into account. Takes the total life of the project into account.

	Payback	Accounting Rate of Return
Disadvantages	Ignores cash flows as real time values Ignores disposal value of assets Ignores cash flows after the end of the payback period Ignores project wind-up costs	Ignores cash flows as real time values Does not take into account the need to recover the capital outlay as quickly as possible

D. DISCOUNTED CASH FLOW (DCF)

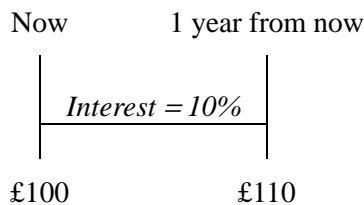
So far we have calculated a payback period in terms of years and an accounting rate of return as a percentage. However, when we apply these tests in practice to a number of competing capital projects, we will often find that the figures give us conflicting results. This is because each method only takes into account one of the two types of financial criteria described earlier. What we require is a method for evaluating capital projects which not only takes into account the total cash inflow but also recognises that earlier cash inflows have a greater value than those received in later periods. The tool we use for this is called a **discount rate**.

Discounting to Present Value

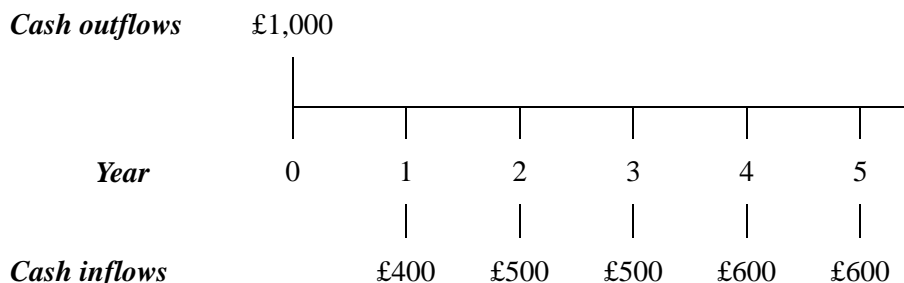
Given an interest rate freely available of 10%, would you prefer £100 now or £110 in one year's time?

You would be indifferent, because £100 now and £110 in a year's time, given an interest rate of 10%, are the *same*. £100 is the **present value** (PV); £110 is the **future value** (FV).

Cash, then, has a **time** value:



Now, assume a project involved spending £1,000 now and resulted in cash inflows over five years as follows:



The **total** inflow of cash is £2,600, spread over Years 1-5. The outflow of cash is £1,000 **now** – i.e. Year 0. But we have seen that cash has a time value; we cannot correctly add Year 1 inflows to Year 2 inflows to Year 3 inflows, and so on, because they are a year apart from each other and they are

different sorts of £s. To add a Year 1 to a Year 2 £ and so on would be like adding a £ to a dollar – they are different currencies, and we must convert them to common currency, to a common type of £.

The DCF technique involves converting future cash flows to their *present* values, which will be less than their actual money amounts in the future. The future cash flows are *discounted* (i.e. reduced) to present values.

Calculating Net Present Value (NPV)

We can calculate the present value of a future sum of money using special tables which take into account the general interest rate or cost of capital and the length of time over which the amount is to be discounted. Here is an extract from NPV tables:

Present value of £1 in 1, 2, 3, 4, 5 years' time

Discount rate	10%	15%	18%	20%	24%	28%	32%
1 year	0.909	0.870	0.847	0.833	0.806	0.781	0.758
2 years	0.826	0.756	0.718	0.694	0.650	0.610	0.574
3 years	0.751	0.658	0.609	0.579	0.524	0.477	0.435
4 years	0.683	0.572	0.516	0.482	0.423	0.373	0.329
5 years	0.621	0.497	0.437	0.402	0.341	0.291	0.250

Thus £1 in three years' time (assuming interest of 20%) has a NPV of 57.9p. Similarly £1,000 in three years' time (assuming interest of 20%) has a NPV of £579. This means that £579 in three years' time is just as good as £1,000 now.

We calculate the *overall NPV of a project* by discounting the expected cash inflows and then deducting the amount invested from the total discounted revenue. The higher the NPV, the more profitable the project. A negative NPV means the project is unprofitable. Let's look at two simple examples.

Example 1

A company is considering investing £10,000 in buying a new machine. The expected cash inflows from using the machine are:

	£
Year 1	6,000
Year 2	6,000
Year 3	6,000
Year 4	5,000
Year 5	5,000

Interest rates are expected to be around 10% throughout the five years.

Should the machine be purchased, or the money invested to earn interest directly? No scrap value is expected from the machine.

The company can make the decision by discounting the future cash receipts to present values and calculating the project's NPV as follows.

Present Values of Machine Revenues

Year	Net Cash Flow (NCF)	Discount Factor (from tables)	NPV (NCF × Discount factor)
	£	10%	£
0	<u>- 10,000</u>		<u>- 10,000</u>
1	+ 6,000	0.909	+ 5,454
2	+ 6,000	0.826	+ 4,956
3	+ 6,000	0.751	+ 4,506
4	+ 5,000	0.683	+ 3,415
5	<u>+ 5,000</u>	0.621	<u>+ 3,105</u>
	+ 28,000		+ 21,436

Net present value of project = £21,436 – £10,000 = £11,436

In straight cash flow terms the opportunity presented by the machine purchase is as follows:

	£
Cash revenues resulting	28,000
<i>less</i> Cost of machine	<u>10,000</u>
Cash gain	<u>18,000</u>

But if we take into account that the £18,000 gain is not realised now but over a period of five years, the true gain is only £11,436.

Another way of looking at this is to say that in order to produce revenues of £18,000 you would need to invest £11,436 in a bank or building society at the outset. In fact, you are getting £18,000 cash flows by investing only £10,000 so there is a gain of £1,436 as compared with direct investment of the money.

Example 2

Let's take another look at our original example, again assuming an interest rate of 10%:

Cash outflows	£1,000					
Year	0	1	2	3	4	5
Cash inflows		£400	£500	£500	£600	£600
Discount factor		0.909	0.826	0.751	0.683	0.621
£		363.6	413.0	375.5	409.8	372.6
						1,934.5

All the cash flows have been converted into Year 0 £s, and can be added, to give NPV = £934.50.

(Cash inflows are assumed to occur in discrete end-of-year steps. In fact the cash flow will usually occur during the year, and discount factors calculated on a "continuous" basis are available. However, using such factors makes no significant difference.)

The result of this example is a positive NPV of £934.50, and this means the project is viable, on one condition – that the cost of capital of the company is 10% or less. If the company's cost of capital were more than 10%, then the appraisal would have to be done using the actual cost of capital. The positive NPV in our example means, "This project offers you 10% return on your investment and a positive amount over and above that besides".

In using the NPV method, we appraise at the cost of capital %. Projects having a positive return in NPV terms cover the capital cost and increase the wealth of the company. Projects with a negative NPV do not cover their cost of capital and reduce the wealth of the firm, and should be rejected.

Depreciation and DCF

Depreciation is ignored when making NPV calculations. Remember that "cash flow" means exactly what it says – the flow of *cash*.

Why no allowance for something as important as depreciation? The answer to this question is that there is an allowance for it. When a machine is purchased, the cash payment enters the DCF analysis, as does the scrap value at the end. The difference between these two amounts measures depreciation, so an allowance is made for it. This is not the normal accounting method of dealing with it; nevertheless, the loss in value over the life of an asset is taken into account.

Internal Rate of Return (IRR) Method

This method of DCF capital investment appraisal seeks to answer a simple but important question: “What **interest rate** must be employed in order to make the **NPV of a project zero**?”

So far, in considering the NPV method, we have seen that a percentage rate of discount will reduce a number of future cash flows to their PVs. As the discount rate is increased, the NPV of the project will diminish and eventually become negative. It is this **percentage discount rate** which we compare with our cost of capital.

The two concepts of NPV and IRR are just different sides of the same coin. With the NPV method we said:

Discount the cash flow at our percentage cost of capital, and if the NPV is positive then the project is a good one.

With the IRR method we say:

Work out which percentage rate will discount the project's NPV to zero, and if that rate is larger than our cost of capital, the project is a good one.

We calculate the IRR by trial and error. We try first one discount rate and then another, checking our NPV result each time. If the NPV is positive, we next use a slightly higher rate; if it is negative, a slightly lower rate, and so on until a zero NPV tells us we have arrived at the IRR.

Keep DCF in its Proper Place

Don't be tempted to regard DCF as an infallible answer to any capital investment decision. It is indeed a useful and valuable method which eliminates some of the disadvantages of other methods, as we have seen. But its accuracy is entirely dependent on accurate **forecasts** of **cash** inflow and outflow, and you will appreciate how difficult such forecasting is if you consider the problems involved in trying to assess the rate of company taxation in, say, five years' time!

In practice the results of a DCF exercise may be ignored if benefits are expected from the capital project which are not definable in terms of money – extensive technological benefits, for example.

Practice Question

The ABC Printing Co. are trying to decide which type of printing machine to buy.

Type A costs £100,000 and the net annual income from the first three years of its life will be respectively £30,000, £40,000 and £50,000. At the end of this period it will be worthless except for the scrap value of £10,000. To buy a Type A machine, the company would need to borrow from a finance group at 9%.

Type B will last for three years too, but will give a constant net annual cash inflow of £30,000. It costs £60,000 but credit can be obtained from its manufacturer at 6% interest. It has no ultimate scrap value.

Which investment would be the more profitable?

Use the following discounting tables for the present value of £1:

Discount rate	6%	9%	15%	20%
1 year	0.943	0.917	0.870	0.833
2 years	0.890	0.842	0.756	0.694
3 years	0.840	0.772	0.658	0.579
4 years	0.792	0.708	0.572	0.482
5 years	0.747	0.650	0.497	0.402
6 years			0.432	0.335

Now check your answers with the ones given at the end of the unit.

ANSWERS TO QUESTION FOR PRACTICE

Type A

Year	Net Cash Income £	Discount Factor (9%)	Discount PV £
0	- 100,000	1.000	- 100,000
1	+ 30,000	0.917	+ 27,510
2	+ 40,000	0.842	+ 33,680
3	+ 50,000	0.772	+ 46,320
	+ 10,000		
		NPV	+ 7,510

Type B

Year	Net Cash Income £	Discount Factor (6%)	Discount PV £
0	- 60,000	1.000	- 60,000
1	+ 30,000	0.943	+ 28,290
2	+ 30,000	0.890	+ 26,700
3	+ 30,000	0.840	+ 25,200
		NPV	+ 20,190

Machine Type B has a far higher NPV than Type A and should be the better investment.

